3GPP TSG-RAN WG2 Meeting #116bis- electronic [R2-2201661](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201661.zip)

Online, January, 2022

**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)**

**Email discussion deadlines**

**Deadline 1 (discussions for Thu online)**

* **Comment deadline, 1st phase:** Wednesday W1, 1000 UTC (for collecting views)
* **Rapporteur proposals, 1st phase:** Wednesday W1, 1300 UTC (proposed outcome)
* **Document deadline, 1st phase:** Thursday W1, 0400 UTC (discussion report)
	+ Discussion may continue to 2nd phase (using Deadline 3) based on online decisions

**Deadline 2 (discussions for Fri online):**

* **Comment deadline, 1st phase:** Thursday W1, 0500 UTC (for collecting views)
* **Rapporteur proposals, 1st phase:** Thursday W1, 2000 UTC (proposed resolution of issues)
* **Document deadline, 1st phase:** Friday W1, 0500 UTC (report, agreed CRs,final approved LS, etc.)
	+ Discussion may continue to 2nd phase (using EOM as 3) based on online decisions

**Deadline 3 (discussions for 2nd week Mon/Tue online):**

* **Comment deadline:** ThursdayW1, 1600 UTC (for collecting views)
* **Rapporteur proposals:** Friday W1, 0900 UTC (proposed resolution of issues)
* **Document deadline:** Monday W2, 1200 UTC (report or agreed CRs)
	+ No extensions to this deadline for regular discussions. Discussions handling CRs may continue to 1-week email (based on chair decision).

**Deadline 4 (CR/LS for 2nd week):**

* **Comment deadline:** MondayW2, 1000 UTC (for collecting views)
* **Rapporteur proposals:** Monday W2, 1300 UTC (proposed final document versions)
* **Document deadline:** Tuesday W2, 1200 UTC (LS and/or agreed CRs)
	+ If not agreeable, may continue to 1-week email (based on chair decision).

**Organizational**

* [AT116bis-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: 1st week Wed, UTC 0900

**NR Rel-17 DCCA (started immediately at meeting start)**

* [AT116bis-e][221][DCCA] MAC aspects (Samsung)

 Scope: Discuss the following topics: 1) How to define the "partial MAC reset" for SCG deactivation? 2) What are the MAC actions SCG activation (e.g. is PHR triggered, are some variables reset, etc.)? 3) Other MAC aspects related to SCG deactivated state (e.g. CSI-RS reporting)

 Intended outcome: Discussion summary in [R2-2201701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201701.zip).

 Deadline: Deadline 3

* [AT116bis-e][222][DCCA] Uplink aspects (Huawei)

 Scope: Discuss the following topics: 1) How is UL data indication done when UE has data arrival for SCG but the SCG is deactivated? 2) What are the conditions for RACH-less activation? 3) Does something need to be specified for PDCP/RLC regarding UL data arrival when SCG deactivated?

 Intended outcome: Discussion summary in [R2-2201702](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201702.zip).

 Deadline: Deadline 3

* [AT116bis-e][223][DCCA] MCG failure recovery (Apple)

 Scope: Discuss whether it's possible to support MCG failure recovery via deactivated SCG (based on contributions to this meeting).

 Intended outcome: Discussion summary in [R2-2201703](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201703.zip).

 Deadline: Deadline 3

* [AT116bis-e][224][DCCA] CPAC procedures from NW perspective (CATT)

 Scope: Discuss the remaining details of CPAC procedures:
A) For SN initiated CPC: 1) Is the indication of prepared PSCells always sent to S-SN, and in which procedure step? What are the RAN2/RAN3 messages use for indicating a) accepted cells from MN to S-SN, b) updated configuration from S-SN to MN and c) RRCComplete from MN to S-SN
B) For MN initiated CPAC: 1) Does MN provide separate list of proposed PSCells to T-SN? 2) Can T-SN pick different PSCells than those in the list?”

 Intended outcome: Discussion summary in [R2-2201704](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201704.zip).

 Deadline: Deadline 1

**NR Rel-17 DCCA (started after Thursday session)**

* [AT116bis-e][225][DCCA] TRS-based SCell activation CRs and LS to RAN1 (OPPO)

 Scope: Update CRs for TRS-based SCell activation based on online discussion and using [R2-2201095](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201095.zip) as baseline. Provide LS to RAN1 informing them of the decision.

 Intended outcome: Endorsable CRs in [R2-2201713](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201713.zip) and [R2-2201714](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201714.zip). Approved LS to RAN1 in [R2-2201715](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201715.zip).

 Deadline: Deadline 4

* [AT116bis-e][226][DCCA] LS to RAN4 on deactivated SCG (Huawei)

 Scope: Indicate RAN2 agreements to RAN4, especially explaining those that impact RAN4.

 Intended outcome: Approved LS in [R2-2201711](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201711.zip).

 Deadline: Deadline 4

* [AT116bis-e][227][DCCA] LS to RAN3 on CPAC (CATT)

 Scope: Indicate RAN2 agreements on CPAC to RAN3.

 Intended outcome: Approved LS in [R2-2201712](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201712.zip).

 Deadline: Deadline 4

**NR Rel-17 Multi-SIM (started immediately at meeting start)**

* [AT116bis-e][230][MUSIM] Paging collision handling (China Telecom)

 Scope: Discuss 1) LTE paging offset calculation: How is the LTE paging collision avoidance specified in 36.304? 2) Is there a need to specify the AS-NAS interaction for UE assistant information in EPS 3) Is there are issue with SI change aspects for paging collision?

 Intended outcome: Discussion summary in [R2-2201705](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201705.zip).

 Deadline: Deadline 3

* [AT116bis-e][231][MUSIM] MUSIM gap details (vivo)

 Scope: Discuss the details of MUSIM gaps for the NW switching when UE does NOT leave RRC connection: 1) is there a need to define new MGL or MGRP for MUSIM purposes, or are the existing MGL/MGRP sufficient? 2) how to define the details of gap signalling (UE assistance + NW configuration) 3) are there any urgent RAN2 actions needed based on the RAN4 LS [R2-2200132](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200132.zip) (e.g. reply LS)

 Intended outcome: Discussion summary in [R2-2201706](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201706.zip).

 Deadline: Deadline 2

* [AT116bis-e][232][MUSIM] MUSIM configured time for leaving RRC connection (MediaTek)

 Scope: Discuss the details of NW switching when UE leaves RRC connection: configured time configuration (configured values, what is UE behaviour if the timer is not configured, etc.

 Intended outcome: Discussion summary in [R2-2201707](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201707.zip).

 Deadline: Deadline 3

**NR Rel-17 Multi-SIM (started after Friday session)**

* [AT116bis-e][233][DCCA] LS to RAN4 on RAN2 agreements for MUSIM gaps (vivo)

 Scope: Indicate RAN2 agreements on MUSIM gaps to RAN4 (according to online decisions).

 Intended outcome: Approved LS in [R2-2201717](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201717.zip).

 Deadline: EOM

**NR Rel-17 RAN Slicing (started immediately at meeting start)**

* [AT116bis-e][240][Slicing] Remaining details for slice groups (CMCC)

 Scope: Discuss the slice group aspects: 1) discuss what should be the definition of slice group (based on latest RAN2 and SA2 agreements)? 2) how to resolve the TA boundary aspects? 3) does UE select different slice group if no cell supporting that slice group is available?

 Intended outcome: Discussion summary in [R2-2201708](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201708.zip).

 Deadline: Deadline 3

**NR Extension to 71 GHz (started immediately at meeting start)**

* [AT116bis-e][210][71 GHz] RRC aspects of CR for 71 GHz (Qualcomm)

 Scope: Update running RRC CR for 71 GHz based: 1) how to handle MIB with 71 GHz (e.g. use spare bit, define new MIB, modify existing fields)? 2) are new values needed for some fields (e.g. time offsets needed for various fields)? 3) is there some input from RAN1 that needs to be added to the RRC running CR?

 Intended outcome: Discussion summary in [R2-2201710](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201710.zip).

 Deadline: Deadline 3

* [AT116bis-e][211][71 GHz] LBT aspects for 71 GHz (Lenovo)

 Scope: Discuss the impact of directional LBT and LBT mode change on consistent LBT failure detection/recovery and CG HARQ retransmissions (e.g. does consistent LBT failure procedure involve directional LBT result?)

 Intended outcome: Discussion summary in [R2-2201709](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201709.zip).

 Deadline: Deadline 2

**Summary documents**

None

**Dates and deadlines – Technical Meeting**

Dec 17, 2021, 1200 UTC Early submission: Tdoc Allocation deadline for long email discussions outcome. Also WI Rapporteur planning tdocs may be submitted early. (Manual allocation by email to Juha), in the email please indicate title, tdoc type (discussion draft CR + additional info etc) and please indicate the AI.

Dec 21, 2021 Early Submission: Tdoc Submission deadline for long email discussions outcome (manual upload into inbox).

Jan 11, 1200 UTC. General Tdoc Submission Deadline. Tdoc number allocation deadline. Kick off, summaries.

Jan 14th 1200 UTC Tdocs submission deadline for Summaries

Jan 17th 0700 UTC **e-Meeting Start** (by email), Week 1
Rapporteurs in non-favourable time zones may kick off AT meeting offline / email discussions before meeting start (at most 12h before). It is assumed that participants starts paying attention to offline / email discussions after meeting start.

Jan 21th 1600 Local Time 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.

Jan 24th 0900 Local Time Resume after weekend. Resume decision making in email discussions, Week 2.

Jan 25th after close of on-line session **e-Meeting Stop**, no more email comments for AT-meeting email discussions. Decision confirmations announced within 24h. Session notes for email checking.

Jan 28th Deadline Short Post116bis-e email discussions. For this short meeting Short Post email discussions can be started before the meeting has ended. However please NOTE that short post email discussions as usual shall be for finalizing progress of something well started, e.g. additional time to check almost agreeable proposals, endorsements of running CRs, Approval of LS outs etc. As the time is very very short and there are likely many open issues, be prepared to capture Editors notes in Running CRs describing the parts not converged. Well written editors notes can be very helpful towards next meeting. Not converged parts can also be captured in an Annex.

**Web Conference Schedule, WEEK 1**

Note that this schedule is indicative and can change. After Week 1 the schedule for Week 2 will be updated.

|  |  |  |  |
| --- | --- | --- | --- |
| **Time ZoneUTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 13:00-13:45 | Early Items Main session, if any.NR17 feMIMO (Johan) | NR17 RedCap (Sergio) | NR17 SL enh (Kyeongin) |
| 13:45-14:30 | NR17 UDC (Johan) | NR17 Small Data Enh (Diana) | NR17 SL enh (Kyeongin) |
| 14:30-15:15 | NR17 eIAB (Johan) | NR17 Small Data Enh (Diana) | NR17 Pos (Nathan) |
| 15:15-16:00 | NR17 eIAB (Johan) | NR17 RACH indication / partitioning (Diana) | NR17 Pos (Nathan) |
| **Tuesday** |  |  |  |
| 13:00-13:45 | NR17 feMIMO (Johan) | LTE17 IoT (Brian) | NR17 SL enh (Kyeongin) |
| 13:45-14:30 | NR17 MGE (Johan) | NR17 IIOT (Diana) | NR17 NTN (Sergio) |
| 14:30-15:15 | NR17 ePowSav (Johan) | NR17 SL Relay (Nathan) | NR17 NTN (Sergio) |
| 15:15-16:00 | NR17 ePowSav (Johan) | NR17 SL Relay (Nathan) | NR17 CovEnh (Sergio) |
| **Wednesd** |  |  |  |
| 05:00-06:00 | NR17 IoT NTN (Johan) | NR17 SONMDT (HuNan) | NR17 Pos (Nathan) |
| **Thursday** |  |  |  |
| 04:30-05:30 | 0430-0515: NR17 QoE (Johan)0515-0600: NR17 Other (Johan) | NR17 DCCA (Tero)- **8.2.4 (TRS-based SCell activation):** [R2-2200096](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200096.zip) (RAN1 LS), [R2-2201095](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201095.zip) (MAC/RRC options)**- 8.2.2.2 (SCG activation):** [R2-2201117](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201117.zip)/[R2-2201097](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201097.zip) (MAC CE-based SCG (de)activation, [R2-2201562](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201562.zip) (smaller RRC processing time definition?)- **8.2.2.1 (UE at SCG deactivation):** [R2-2200057](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200057.zip) ([Post116-e][225]), [R2-2200881](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200881.zip) (partly) | 0430 – 0515 NR17 NTN (Sergio)0515 – 0600 NR17 RedCap (Sergio) |
| 05:30-06:30 | 06:00-06:30: NR17 MBS (Johan) | NR17 DCCA (Tero)**- 8.2.3.1 (CPAC procedures from NW perspective):** [R2-2201704](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201704.zip) (outcome of [AT116bis-e][224])**- 8.2.3.2 (CPAC procedures from UE perspective):** [R2-2201001](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201001.zip)/[R2-2201094](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201094.zip)**- 8.2.5 (UE capabilities):** [R2-2200275](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200275.zip) (finalizing capability inputs for DCCA) | 06:00-0630 NR17 SL Relay (Nathan) |
| **Friday** |  |  |  |
| 04:30-05:30 | NR17 MBS (Johan) | NR17 Multi-SIM (Tero)**- 8.3.1 (Organizational):** [R2-2200801](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200801.zip) (open issue list)**- 8.3.3 (MUSIM NW switching):** [R2-2200489](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200489.zip)/[R2-2200950](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200950.zip)/[R2-2201633](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201633.zip) (amount of MUSIM gaps), [R2-2201706](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201706.zip) ([AT116bis-e][231]) | NR17 SL Relay (Nathan) |
| 05:30-06:30 | MR17 MBS (Johan) | 05:30-0600: NR17 Multi-SIM (Tero)**- 8.3.5 (UE capabilities):** [**R2-2200360**](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200360.zip) (capability input finalization), [R2-2201203](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201203.zip) (additional aspects?)0600-0630: NR17 up to 71 GHz (Tero)**- 8.20.1 (LSs):** RAN1 LSs [R2-2200076](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200076.zip) and[R2-2200078](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200078.zip)**- 8.20.2 (MAC, RRC and UE capabilities):** [R2-2200480](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200480.zip)/[R2-2201015](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201015.zip)/[R2-2200885](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200885.zip) (RA-RNTI and MSGB-RNTI handling as indicated by RAN1 LS), outcome of [AT116bis-e][211][LBT handling] | NR17 SL enh (Kyeongin) |

**Web Conference Schedule, WEEK 2**

Note that this schedule is indicative and can change. After Week 1 the schedule for Week 2 will be updated.

|  |  |  |  |
| --- | --- | --- | --- |
| **Time ZoneUTC** | **Web Conference R2 - Main** | **Web Conference R2 - BO1** | **Web Conference R2 - BO2** |
| **Monday** |  |  |  |
| 13:00-13:45 | NR17 Other (Johan) | NR17 71 GHz (Tero)**- 8.20.2 (71 GHz RRC):** A1-A3 from [R2-2201710](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201710.zip) (RRC aspects, [AT116bis-e][210])NR17 RAN Slicing (Tero)**- 8.8.1 (organizational):** [**R2-2200055**](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200055.zip) (open issue list)**- 8.8.2 (cell reselection):** [R2-2200043](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200043.zip) (outcome of [Post116-e][242]), [R2-2201708](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201708.zip) ([AT116bis-e][240]), selected parts of [R2-2200179](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200179.zip)/[R2-2200845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200845.zip) (if time allows)**- 8.8.3 (RACH):** [R2-2200846](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200846.zip) (remaining open issues of slice-specific RACH) (if time allows)**- 8.8.4 (UE capabilities):**[**R2-2200511**](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200511.zip) (UE capabilities for slicing) | TBD CB Sergio |
| 13:45-14:30 | NR17 AI 8.0.x (Johan) | CB Tero**- 8.8.x:** RAN slicing overflow from previous session**- 8.2.3.3 (CPAC other):** [R2-2200897](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200897.zip) (support of CPAC+CHO)**- 8.2.2.1 (SCG deact MAC):** [**R2-2201701**](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201701.zip) ([AT116bis-e][221])**- 8.2.2.2 (SCG deact UL):** [R2-2201702](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201702.zip) ([AT116bis-e][222])**- 8.2.2.3 (SCG deact other):** [**R2-2201703**](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201703.zip) (MCG failure recovery feasibility, [AT116bis-e][223]) (if time allows)**- 8.2.2.2 (SCG activation):** CB on [R2-2201117](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201117.zip)/[R2-2201097](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201097.zip) (MAC CE-based SCG (de)activation (if time allows)- **8.2.2.1 (UE at SCG deactivation):** P11-12 from [R2-2200881](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200881.zip) (if time allows) | LTE17 IoT (Brian) |
| 14:30-15:15 | CB UDC eIAB QoE Johan | NR17 IIOT (Diana) | NR17 Pos (Nathan) |
| 15:15-16:00 | CB feMIMO Johan  | NR17 RACH indication / partitioning (Diana) | CB Nathan |
| **Tuesday** |  |  |  |
| 13:00-13:45 | CB feMIMO MGE Johan | CB Sergio | CB Diana |
| 13:45-14:30 | CB MBS Johan | CB Sergio | CB Diana |
| 14:30-15:15 | CB IoT NTN Johan | CB TeroNR17 Multi-SIM**- 8.3.2 (MUSIM paging collision):** [R2-2201705](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201705.zip) ( [AT116bis-e][230])**- 8.3.3 (MUSIM configured time):** [R2-2201707](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201707.zip) ([AT116bis-e][232])- **8.3.5 (MUSIM capabilities):** P1 from [R2-2201203](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201203.zip)NR17 71 GHz **- 8.20.2 (71 GHz RRC):** Remaining parts of[**R2-2201710**](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201710.zip) (RRC aspects, [AT116bis-e][210])NR17 DCCA - **8.2.2.1 (UE at SCG deactivation):** P11-12 from [R2-2200881](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200881.zip) (if not treated on Monday)**- 8.2.2.2 (SCG activation):** CB on [R2-2201117](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201117.zip)/[R2-2201097](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201097.zip) (MAC CE-based SCG (de)activation (if not treated on Monday)**-8.2.4 (TRS-based Scell activation):** Outcome of AT116bis-e][225][DCCA] (only if needed - intent is to agree by email) | CB Kyeongin |
| 15:15-16:00 | CB ePowSav Johan | CB Brian, HuNan | CB Nathan |

# 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.

**This agenda item will not be treated in this meeting.**

# 7 Rel-16 EUTRA Work Items

Only essential corrections. No documents should be submitted to 7. Please submit to 7.x

## 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 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.

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

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.

**This agenda item will not be treated in this meeting.**

## 7.4 Other LTE Rel-16 corrections

(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 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.

For LTE work items with corresponding NR component (e.g. LTE mobility, RACS), only corrections that are LTE-specific should be submitted to this AI. Corrections that impact or are common with NR component should be submitted to 6.1.X instead.

**This agenda item will not be treated in this meeting.**

# 8 Rel-17 NR Work Items

No documents should be submitted to 8. Please submit to 8.x

## 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: 5 tdocs (note that email discussion outcome documents or rapporteur inputs do not count against Tdoc limitations)

Email max expectation: 4 threads

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

Contributions should illustrate the Stage-3 details of the proposals (e.g. in an Annex containing TP against the running CRs).

### 8.2.1 Organizational, Requirements and Scope

Including LSs, any rapporteur inputs and results of running CR email discussions [210]-[215]

Including rapporteur input on remaining open issues needed to close the WI.

LS on MAC CE contents (for all Rel-17 WIs):

[R2-2200081](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200081.zip) LS on Rel-17 MAC-CE impacts (R1-2112842; contact: Nokia) RAN1 LS in Rel-17 NR\_feMIMO, NR\_ext\_to\_71GHz, NR\_IIOT\_URLLC\_enh, NR\_NTN\_solutions, NR\_pos\_enh, NR\_redcap, NR\_UE\_pow\_sav\_enh, NR\_cov\_enh, NR\_IAB\_enh, NR\_SL\_enh, NR\_MBS, NR\_DSS, LTE\_NR\_DC\_enh2, LTE\_NBIOT\_eMTC\_NTN, NB\_IOTenh4\_LTE\_eMTC6, LTE\_terr\_bcast\_bands\_part1 To:RAN2 Cc:RAN4

* Noted (MAC CE details for TRS-based SCell activation are already being discussed under 8.2.4 based on RAN1 inputs since last meeting)

By Email [200] (4)

Results of running CR email discussions [210]-[215]:

Email discussion [210]:

[R2-2201646](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201646.zip) Introduction of CPA and inter-SN CPC CATT draftCR Rel-17 37.340 16.8.0 LTE\_NR\_DC\_enh2-Core B R2-2111640 Late

* [200] Endorsed (as running CR)

Email discussion [211]:

[R2-2201647](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201647.zip) Introduction of CPA and inter-SN CPC CATT draftCR Rel-17 38.331 16.7.0 LTE\_NR\_DC\_enh2-Core B R2-2111660 Late

[R2-2201648](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201648.zip) Introduction of CPA and inter-SN CPC CATT draftCR Rel-17 36.331 16.7.0 LTE\_NR\_DC\_enh2-Core B R2-2111661 Late

* [200] Endorsed (as running CR)

Email discussion [212]:

[R2-2201089](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201089.zip) Introduction of SCG deactivation Huawei, HiSilicon draftCR Rel-17 38.331 16.7.0 LTE\_NR\_DC\_enh2-Core Late

* [200] Endorsed (as running CR)

[R2-2201090](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201090.zip) Introduction of SCG deactivation Huawei, HiSilicon draftCR Rel-17 36.331 16.7.0 LTE\_NR\_DC\_enh2-Core Late

* [200] Endorsed (as running CR)

Email discussion [213]:

[R2-2201397](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201397.zip) [Post116-e][213][R17 DCCA] Running MAC CR for SCG deactivation (vivo) vivo CR Rel-17 38.321 16.7.0 1182 - B LTE\_NR\_DC\_enh2-Core

* [200] Endorsed (as running CR)

Email discussion [214]:

[R2-2200276](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200276.zip) Draft 331 CR for DCCA UE capabilities Intel Corporation draftCR Rel-17 38.331 16.7.0 B LTE\_NR\_DC\_enh2-Core

*(moved from 8.2.5)*

[R2-2200277](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200277.zip) Draft 306 CR for DCCA UE capabilities Intel Corporation draftCR Rel-17 38.306 16.7.0 B LTE\_NR\_DC\_enh2-Core

*(moved from 8.2.5)*

Email discussion [215]:

[R2-2201561](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201561.zip) Running 37.340 CR for SCG deactivation ZTE Corporation draftCR Rel-17 37.340 16.8.0 B LTE\_NR\_DC\_enh2-Core

* [200] Endorsed (as running CR)

Web Conf (1st week Thursday) (1)

Rapporteur input on remaining open issues needed to close the WI:

[R2-2201091](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201091.zip) Open issues for MR DC/CA further enhancements Huawei, HiSilicon other Rel-17 LTE\_NR\_DC\_enh2-Core Late

* Discussed as part of email discussions
* Companies should focus on these open issues for the next meeting contributions
* Noted

### 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 and UE behaviour in deactivated SCG

Including outcome of [Post116-e][225][R17 DCCA] Remaining details for SCG deactivation (Huawei)

including discussion on essential aspects of BFD/BFR and RRM/RLM that were not covered by the email discussion [Post116-e][225]

Including discussion on any remaining UP details of SCG deactivation (if any) that were not covered by the email discussion [Post116-e][225]

Web Conf (1st week Thursday) (1)

Outcome of [Post116-e][225][R17 DCCA] Remaining details for SCG deactivation (Huawei):

[R2-2200057](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200057.zip) [Post116-e][225][R17 DCCA] Remaining details for SCG deactivation Huawei (rapporteur) discussion Rel-17

* Bulk agreements
* 1 upon SCG RLF while the SCG is deactivated, the UE reports SCGFailureInformation (legacy procedure) and the network can reconfigure the UE to release the SCG, change the PSCell or keep the PSCell and reconfigure RLM RS.
* 3 while the SCG is deactivated, RLM can be based on activated TCI state for PDCCH reception when RadioLinkMonitoringConfig does not provide any RS for “rlf” or “both”, like currently for the activated SCG.
* 4 Keep the existing indication in the 38.331 running CR to indicate whether the UE shall perform RLM while the SCG is deactivated.
* 6 while the SCG is deactivated, BFD can be based on activated TCI state for PDCCH reception when RadioLinkMonitoringConfig does not provide any RS for "beamFailure" or "both", like currently for the activated SCG
* 7 Keep the existing indication in the 38.331 running CR to indicate whether the UE shall perform BFD while the SCG is deactivated.
* 8 RAN2 does not consider introducing a separate RLM configuration specific for deactivated SCG. If RAN4 feel the necessity RAN4 can discuss/decide if it is needed or not.
* 10 Whether to support the configuration of measCycle for deactivated SCG is up to RAN4.
* 5 tci-Info, which can provide activated TCI states for PDCCH/PDSCH reception at SCG activation (i.e. transition from deactivated SCG to activated SCG), can be included at any RRC reconfiguration while the SCG is deactivated and, if SCG remains deactivated and the UE performs BFD and/or RLM based on activated TCI states for PDCCH reception, the UE uses the newly activated TCI states for PDCCH reception.

- Huawei indicates that how to handle BWP switching is still FFS even with these.

- LGE thinks P8/10 might require LS to RAN4? Huawei agrees we can send LS

- Apple thinks P3/6 may need some rewording for " activated TCI state for PDCCH reception" in the RAN4 LS. Could use "TCI state when SCG was activated".

* Offline 226: Send LS to RAN4 (Huawei) about these agreements (esp. P8/10). Can clarify what "activated TCI state for PDCCH reception". CB Tuesday or By Email.

**Discuss online**

*[For discussion]Proposal 2: Select one of the following options upon BF while the SCG is deactivated:*

*1) no report, the UE will do CBRA in case of SCG activation without reconfigurationWithSync*

*2) send an SCGFailureInformation message with a new cause, the network can reconfigure the UE to keep the SCell and allow RACH-less activation (by changing BFD RS), change the PSCell or release the SCG. If the network does not reconfigure the UE and activates the SCG, RACH will be used.*

- LGE supports option 2 for efficiency. That enables lower delay at activation. QC agrees and thinks this enables NW to reconfigure and update TCI state to the UE. Ericsson agrees that NW can provide updated TCI state at SCG activation but if there is no BF information, it doesn't know that. CATT and ZTE agree. ZTE thinks option 2 would mean UE stops TAT at BFD and this let's NW to know RACH is needed so dedicated RACH resources can be provided for SCG activation. Samsung and Huawei agrees. Huawei thinks that report useful for the network to either allocate RACH resources at activation or reconfigure immeiately.

- Nokia is not sure what the gain from option 2 is. What will NW do with the report? Or would UE do this at activation? Apple, NEC, vivo and OPPO agree. vivo thinks RACH is triggered at activation so RACH resources can be FFS. Apple thinks the TCI state agreement is not motivation for this: It just allows NW to change TCI for any reason. Nokia thinks RRC reporting is slow compared to MAC BFD - due to this NW has to anyway rely on RACH might be needed.

* Upon BF while the SCG is deactivated: UE indicates BF to NW via RRC (e.g. so the network can reconfigure the UE to keep the PSCell and allow RACH-less activation (by changing BFD RS), or change the PSCell or release the SCG). If the network does not reconfigure the UE and activates the SCG, RACH will be used (FFS how this will be captured).

*[For discussion]Proposal 9: RAN2 to discuss whether to support configuring, prior to SCG deactivation, the measIds or the measObject to be measured after the SCG is deactivated.*

*[For discussion]Proposal 11: RAN2 to discuss while the SCG is deactivated, how the UE applies the MCG power limitation and PDCCH blind decoding limitation (e.g. whether the UE does as if there would be no SCG, or as if the SCG would be activated).*

*[For discussion]Proposal 12: RAN2 to discuss whether to support a MAC CE to indicate "SCG activation", presumably with no additional information in the MAC CE.*

TCI states in deactivated SCG:

[R2-2201295](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201295.zip) Further discussion on TCI State indication in RRC MediaTek Inc. discussion R2-2111192

*(moved from 8.2.2.3)*

*Proposal 1: Add TCI State information in NR RRC IE ServingCellConfig. The network could use this indication for RACH-less PSCell activation and direct SCell activation.*

*Proposal 2: RAN2 to adopt the TP in Annex for TCI state indication in RRC configuration.*

[R2-2201342](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201342.zip) Discussion on updating TCI states NTT DOCOMO, INC. discussion Rel-17

*Observation 1: If MN updates the TCI state for PDCCH/PDSCH reception during SCG deactivated state, UE can continue RLM and BFD to valid RS even after RLF is detected.*

*Observation 2. RLM and BFD follow activated TCI states for PDCCH only when no RS is configured in RadioLinkMonitoringConfig.*

*Proposal 1. MN can update the TCI state for PDCCH/PDSCH while SCG is deactivated.*

*Proposal 2. If the network configures UE to perform RLM and BFD while the SCG is deactivated, MN instructs UE to release RSs configured in RadioLinkMonitoringConfig when MN indicates SCG deactivation.*

UL power sharing aspects:

[R2-2200583](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200583.zip) DC power sharing for deactivated SCG Samsung Electronics Polska discussion LTE\_NR\_DC\_enh2-Core

*Proposal 1. UE performs DC power sharing mechanisms unless SCG state is configured with deactivated state.*

*Proposal 2. RAN2 send a LS to ask RAN1 if there is any issue with Proposal 1.*

Web Conf (1st week Thursday) (1)

Remaining open issues for deactivated SCG:

[R2-2200881](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200881.zip) Open issues in deactivation of SCG Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

* Only P11-12 treated online

*Observation 1: Currently once BFD triggers BFR on the PSCell will cause UE to access PSCell with RACH*

*Observation 2: Intra-SN CPC was introduced in Rel.16.*

BWP used when SCG is deactivated

*Proposal 11: When PSCell (SCG) is deactivated one needs to specify which BWP is active while SCG is deactivated*

*Proposal 12: UE switches to firstActiveDownlinkBWP-Id and firstActiveUplinkBWP-Id at SCG deactivation. Corresponding TP is in annex F.*

- Apple thinks we shouldn't touch BWPs. UE should keep the BWP it used when it was deactivated. NW can still switch BWP via RRC if it wants to. Ericsson, Huawei, Intel agrees.

- QC agrees with P2 as smaller BWP might reduce power consumption. Samsung thinks UE will use first active BWP upon activation.

- vivo also thinks we need to agree on which BWP is used. Supports to use first active BWP.

- ZTE asks what happens if UE reuses existing BWP and UE does HO, how does the source cell inform this to target cell? There is no field other than first active BWP. Huawei points out that after HO, we have to do RACH for activation anyway.

Web Conf (2nd Week Monday/Tuesday) (1)

* No decision yet - CB Monday/Tuesday (online)

**Chair proposals:**

**Alt.1: When SCG is deactivated, UE immediately switches to using BWP indicated to *firstActiveDownlinkBWP-Id* and *firstActiveUplinkBWP-Id* in PSCell (i.e. there is no additional BWP switching at SCG activation).**

**Alt.2: When SCG is deactivated, UE continues using its currently active BWP in PSCell until SCG activation. When SCG is activated, UE switches to using BWP indicated to *firstActiveDownlinkBWP-Id* and *firstActiveUplinkBWP-Id* in PSCell (i.e. UE may switch BWP at SCG activation).**

UE measurements

*Proposal 1: There is no need to restrict implicitly measurements on deactivated SCG as NW can always reconfigure measurement when deactivating SCG with RRC signalling.*

*Proposal 2: Network can configure measurement cycle (similar to measCycleSCell) for deactivated SCG to relax RRM measurements – corresponding text proposal is in annex A. Wait for RAN4 input on possible value range needed for the parameter.*

UE indication on deactivation

*Proposal 6: Rely on existing RRM measurements and data transmission information in network side to make decision to deactivate SCG*

*Proposal 7: Existing overheating indication is sufficient for helping NW to know when to deactivate SCG*

Deactivated SCG and CPC

*Proposal 8: CPC execution-condition evaluation and execution are applicable when the SCG is deactivated.*

*Proposal 9: In intra-SN CPC, the CPC command does not configure the activation status of the target SCG.*

*Proposal 10: FFS whether in inter-SN CPC the CPC command configures the activation status of the target SCG.*

By Email [221] (4+1)

Partial MAC reset for SCG deactivation:

[R2-2200601](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200601.zip) Partial MAC reset upon SCG deactivation Samsung Electronics Polska discussion LTE\_NR\_DC\_enh2-Core

[R2-2201416](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201416.zip) Partial MAC reset upon SCG deactivation DENSO CORPORATION discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201075](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201075.zip) UE behavior in deactivated SCG and SCG deactivation Qualcomm Incorporated discussion Rel-17

*(only P10-P14 relevant for MAC)*

[R2-2201319](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201319.zip) Remaining issues for MAC procedure in deactivated SCG SHARP Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core

Does MAC allow CSI-RS reporting when SCG is deactivated?:

[R2-2201296](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201296.zip) CSI-RS reporting for deactivated SCG MediaTek Inc. discussion

*Proposal 1: CSI-RS reporting in the deactivated PSCell or for the deactivated PSCell is NOT supported. RAN2 to adopt the TP in Annex for running CR discussion.*

Can be discussed under relevant email discussions or by Web Conf (2nd week Monday) (14)

[R2-2200380](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200380.zip) Considerations on UE measurement and reporting in deactivated SCG KDDI Corporation discussion Rel-17

[R2-2201574](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201574.zip) UE Measurements in SCG Deactivation LG Electronics discussion Rel-17 LTE\_NR\_DC\_enh2-Core R2-2111017

[R2-2200647](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200647.zip) Remaining issues on deactivation of SCG NTT DOCOMO INC. discussion Rel-17

[R2-2200771](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200771.zip) Discussion on SCG deactivation Lenovo, Motorola Mobility discussion Rel-17

[R2-2201092](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201092.zip) UE requested SCG deactivation Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200604](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200604.zip) Discussion on UE behaviour when SCG is deactivated ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201248](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201248.zip) Discussion on SCG Deactivation and UE Behavior CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201318](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201318.zip) Remaining issues for UE behaviour in deactivated SCG SHARP Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core R2-2111014

[R2-2201563](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201563.zip) Deactivation of SCG and UE behaviour in deactivated SCG Ericsson discussion LTE\_NR\_DC\_enh2-Core

[R2-2201640](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201640.zip) Measurements while the SCG is deactivated InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

[R2-2201639](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201639.zip) Deactivation of SCG InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

[R2-2200308](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200308.zip) QoS flow remapping during SCG deactivation Fujitsu discussion Rel-17 LTE\_NR\_DC\_enh2-Core R2-2109708

[R2-2200387](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200387.zip) SCG deactivation indication when resuming from RRC\_INACTIVE due to MO data OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

Email discussions ([221], [226])

* [AT116bis-e][221][DCCA] MAC aspects (Samsung)

 Scope: Discuss the following topics: 1) How to define the "partial MAC reset" for SCG deactivation? 2) What are the MAC actions SCG activation (e.g. is PHR triggered, are some variables reset, etc.)? 3) Other MAC aspects related to SCG deactivated state (e.g. CSI-RS reporting)

 Intended outcome: Discussion summary in [R2-2201701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201701.zip).

 Deadline: Deadline 3

By Web Conf (2nd Week Monday) (1)

[R2-2201701](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201701.zip) Summary of [AT116bis-e][221][DCCA] MAC aspects (Samsung) Samsung discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

Bulk agreement

Proposals for partial MAC reset

*Proposal 1. UE initializes Bj for each logical channel to zero upon SCG deactivation as a part of partial MAC reset.*

* 1. FFS if UE initializes Bj for each logical channel to zero upon SCG deactivation as a part of partial MAC reset. Should consider e.g. what to do with possible Bj increase while SCG is deactivated.

- Ericsson has concern on P1: Resetting Bj to zero at deactivation will make it increase during deactivated time. That's why it's better to not do anything. Is fine to consider this as FFS. QC wonders if this is due to UL data processing? We could initilize it at activation instead. Samsung thinks we can NW can reset Bj value at activation anyway if this is a problem. LGE thinks Ericsson has a point so would luke to check it.

* 2-1. UE stops (if running) all timers except beamFailureDetectionTimer associated with PSCell and timeAlignmentTimers upon SCG deactivation as a part of partial MAC reset.
* 2-2. If BFD is not configured for deactivated SCG, UE stops (if running) beamFailureDetectionTimer associated with PSCell upon SCG deactivation as a part of partial MAC reset.
* 4. UE resets BFI\_COUNTER associated with PSCell if BFD is not configured for deactivated SCG, upon SCG deactivation as a part of partial MAC reset.
* 5. UE does the following actions upon SCG deactivation as a part of partial MAC reset:

1> set the NDIs for all uplink HARQ processes to the value 0;

1> stop, if any, ongoing Random Access procedure;

1> flush Msg3 buffer;

1> flush MSGA buffer;

1> cancel, if any, triggered Scheduling Request procedure;

1> cancel, if any, triggered Buffer Status Reporting procedure;

1> cancel, if any, triggered Power Headroom Reporting procedure;

1> cancel, if any, triggered Configured uplink grant confirmation;

1> flush the soft buffers for all DL HARQ processes;

1> for each DL HARQ process, consider the next received transmission for a TB as the very first transmission;

1> release, if any, Temporary C-RNTI.

Proposals for other issues

* 7. CSI-RS reporting in the deactivated PSCell or for the deactivated PSCell is NOT supported.
* 8. For deactivated PSCell, PHR is not reported.

*Proposal 9-1. PSCell is deactivated upon SCG deactivation and activated upon SCG activation.*

- LGE is fine but thinks PSCell being deactivated is strange. Apple agrees.

* 9-2. PHR is triggered upon SCG activation.
* 10. PHR is triggered upon addition of PSCell not configured with deactivated state.

FFS for now.

* 3. FFS if UE discards explicitly signalled contention-free Random Access Resources for 4-step RA type and 2-step RA type, if any, upon SCG deactivation as a part of partial MAC reset.
* 6. FFS if the BWP associated with PSCell is NOT deactivated upon SCG deactivation.

Email discussions ([226])

* [AT116bis-e][226][DCCA] LS to RAN4 on deactivated SCG (Huawei)

 Scope: Indicate RAN2 agreements to RAN4, especially explaining those that impact RAN4.

 Intended outcome: Approved LS in [R2-2201711](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201711.zip).

 Deadline: Deadline 4

By Email (1)

[R2-2201711](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201711.zip) LS on RAN2 agreements for deactivated SCG RAN2 LS out Rel-17 LTE\_NR\_DC\_enh2-Core To:RAN4

#### 8.2.2.2 Activation of deactivated SCG

Including discussion on UP details of SCG activation, e.g. how the UL data is sent via the MCG leg for split bearers which SCG is deactivated, how UE indicates it has UL data available for SCG/split bearers, etc.

Including discussion on whether to support MAC CE-based SCG (de)activation in Rel-17

Web Conf (1st week Thursday) (1)

[R2-2201117](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201117.zip) On the non-essentiality of MAC CE based SCG deactivation Apple discussion LTE\_NR\_DC\_enh2-Core

 *Observation 6: For (NGEN)EN-DC cases, LTE MAC needs to be changed to use MAC CE based, which is additional work that is not needed for Rel-17.*

 *Proposal 1: MAC CE based SCG (de)activation is not supported in Rel-17*

[R2-2201097](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201097.zip) Reply LS on efficient activation/de-activation mechanism for one SCG (R2-2109368/R4-2115440) Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Observation 1: Using the MAC CE is very useful in the frequent activation and deactivation.*

*Observation 2: Co-located MN and SN, or low latency MN-SN link are very common scenarios, in which the MN-SN delay is very low.*

*Observation 3: In R15, there are some cross CGs MAC CE design.*

*Observation 4: Introducing MAC CE for SCG (de)activation will only bring one small impact on F1.*

*Proposal 1: The MN can set the SCG activation state in any RRC reconfiguration (i.e. not only at PSCell addition /change, RRC resume and HO).*

*Proposal 2: Support the SCG (de)activation using MAC CE.*

*Proposal 3: To support the SCG (de)activation using MAC CE, define one new LCH and one MAC CE with a single octet.*

*Proposal 4: The UE deactivates the SCells within the SCG when receiving the SCG deactivation command without waiting for a separate higher layer signal deactivating the SCells.*

Suppporting MAC CE:

- Huawei, LGE, QC, vivo, IDT, OPPO, Intel, Futurewei and Lenovo support MAC CE. LGE thinks there is delay benefit and signalling overhead reduction. QC thinks we could use this at least for activation.

Not supporting MAC CE:

- Apple thinks we haven't concluded all that UE does in activation. If there are RRC actions, MAC CE becomes.

- Apple, Nokia, Samsung, Ericsson, ZTE do not support MAC CE. Nokia thinks something has to be reconfigured at activation. We might need implicit actions which can take a long time. Ericsson agrees and thinks MAC CE is an optimization. ZTE agrees and wonders how we deal with SCG Scells? Are those also deactivated at PSCell activation?

- Samsung think RRC latency can also be reduced.

Web Conf (2nd week Tuesday) (1)

* Revisit this issue after [222] and [223] conclusions.

Web Conf (1st week Thursday) (1)

Is reduced-processing time RRC reconfiguration needed for activating SCG?

[R2-2201562](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201562.zip) Efficient SCG activation Ericsson discussion LTE\_NR\_DC\_enh2-Core

* Only P11 is discussed online (P4-8 can be discussed under by [222] and P1,2,12,13 can be discussed under [221])

*Proposal 11 Define a reduced processing time for RRCReconfiguration for activating SCG with limited or no change to the SCG configuration.*

- QC wonders how much we can reduce the delay. The gains from activation delay are not that big. Is worried we do lot of work for little gain. Apple agrees and even if we could discuss this in case of no changes, we need more progress on other topics. MTK thinks this can become more complicated than MAC CE design. Would have to define lot of configuration details.

* Noted (P11)

By Email [221] (1)

PHR reporting for deactivated SCG and triggering upon SCG activation:

[R2-2200584](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200584.zip) PHR issues for SCG activation Samsung Electronics Polska discussion LTE\_NR\_DC\_enh2-Core

By Email ([221] and [222], depending on proposals)

UE-initiated SCG activation:

[R2-2200542](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200542.zip) Futher discussion on UE initiated SCG fast activation Futurewei discussion Rel-17 LTE\_NR\_DC\_enh2-Core R2-2110909

[R2-2200605](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200605.zip) Activation of deactivated SCG ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200637](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200637.zip) Discussion on activation of deactivated SCG Spreadtrum Communications discussion Rel-17

[R2-2200649](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200649.zip) UP details of deactivated SCG activation Transsion Holdings discussion Rel-17

[R2-2200772](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200772.zip) Discussion on SCG activation Lenovo, Motorola Mobility discussion Rel-17

[R2-2200882](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200882.zip) Open issues in activation of SCG Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200895](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200895.zip) Remaining issues on SCG (de)activation CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201060](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201060.zip) Activation of deactivated SCG Qualcomm Incorporated discussion Rel-17

[R2-2201249](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201249.zip) Considerations on Activation of Deactivated SCG CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201362](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201362.zip) Discussion on SCG activation and deacitvation LG Electronics Inc. discussion LTE\_NR\_DC\_enh2-Core

[R2-2201393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201393.zip) Activation of deactivated SCG vivo discussion LTE\_NR\_DC\_enh2-Core

[R2-2201431](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201431.zip) SCG/split bearer handling upon SCG deactivation and SCell state upon SCG activation Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201538](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201538.zip) Conditional reconfiguration execution while SCG is deactivated Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201641](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201641.zip) Activation of SCG InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

Withdrawn:

[R2-2201592](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201592.zip) UP details of deactivated SCG activation Transsion Holdings discussion Withdrawn

Email discussions ([222])

* [AT116bis-e][222][DCCA] Uplink aspects (Huawei)

 Scope: Discuss the following topics: 1) How is UL data indication done when UE has data arrival for SCG but the SCG is deactivated? 2) What are the conditions for RACH-less activation? 3) Does something need to be specified for PDCP/RLC regarding UL data arrival when SCG deactivated?

 Intended outcome: Discussion summary in [R2-2201702](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201702.zip).

 Deadline: Deadline 3

Web Conf (2nd Week Tuesday) (1)

[R2-2201702](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201702.zip) Summary of [AT116bis-e][222][DCCA] Uplink aspects (Huawei) Huawei discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

*Proposal 4: Discuss at next meeting detailed proposals (with TP) for handing of primaryPath, of ul-SplitThreshold and of PDCP duplication across MCG and SCG for SRB and DRB, upon SCG deactivation.*

*Proposal 6: Discuss at the next meeting whether the UE can perform RACH-less activation if the UE is not configured to perform RLM/BFD while the SCG is deactivated.*

*Proposal 1: When the SCG is deactivated and there are UL data for one or more SCG bearer, the UE sends an MN RRC message to indicate that there are UL data for one or more SCG bearer.*

*Proposal 2: The MN RRC message includes no information besides "there are UL data for one or more SCG bearer".*

*Proposal 3: The MN RRC message is only triggered by UL data on SCG bearers, not on split bearers.*

*Proposal 5: Upon reception of a network SCG activation command, the UE shall perform RACH towards the SCG if any of the following condition is true:*

*- reconfigurationWithSync is included in the SCG activation command*

*- TA timer for the PSCell is expired*

*- RLF is declared*

*- BF is declared*

*Proposal 7: When the UE is configured to perform RLM/BFD when the SCG is deactivated, upon reception of a network activation command not including reconfigurationWithSync while the TA timer associated with the PSCell is running and BF/RLF is not declared, the UE shall activate the SCG without performing RACH towards the SCG.*

*Proposal 8: No guard timer is introduced for RACH-less SCG activation*

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

Including essential parts of SCG activation/deactivation that do not fit under other AIs.

Including discussion on MCG link recovery via deactivated SCG (with CR to illustrate the needed Stage-3 details)

This agenda item may be deprioritized in this meeting .

By Email ([221], [222] or [223], depending on proposals) (4)

Other aspects of SCG (de)activation:

[R2-2201073](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201073.zip) Other aspects of SCG activation/deactivation Qualcomm Incorporated discussion Rel-17

[R2-2201317](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201317.zip) Deactivation of SCG LG Electronics Finland discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201333](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201333.zip) Discussion on SCG (de)activation NTT DOCOMO, INC. discussion Rel-17

[R2-2201575](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201575.zip) Rest issues of SCG Activation LG Electronics discussion Rel-17 LTE\_NR\_DC\_enh2-Core R2-2111018

By Email [223] (only aspects related to MCG failure recovery via deactivated SCG) (7)

MCG link recovery via deactivated SCG:

[R2-2200388](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200388.zip) Fast MCG recovery based on SCG deactivation OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200896](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200896.zip) Considerations for Fast MCG link recovery with deactivated SCG CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201115](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201115.zip) Simple MCG recovery procedure using deactivated SCG for Rel-17 Apple discussion LTE\_NR\_DC\_enh2-Core R2-2110092

[R2-2201116](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201116.zip) CR TP for MCG recovery procedure using deactivated SCG for Rel-17 Apple discussion LTE\_NR\_DC\_enh2-Core

[R2-2201394](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201394.zip) Fast MCG recovery via deactivated SCG vivo discussion LTE\_NR\_DC\_enh2-Core

[R2-2201432](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201432.zip) Fast MCG link recovery via deactevated SCG Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200612](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200612.zip) UL data arrival and MCG link recovery NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*(moved from 8.2.2.2)*

Email discussions ([223])

* [AT116bis-e][223][DCCA] MCG failure recovery (Apple)

 Scope: Discuss whether it's possible to support MCG failure recovery via deactivated SCG based on contributions marked for this discussion and provide discussion report.

 Intended outcome: Discussion summary in [R2-2201703](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201703.zip).

 Deadline: Deadline 3

Web Conf (2nd Week Tuesday) (1)

[R2-2201703](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201703.zip) Summary of [AT116bis-e][223][DCCA] MCG failure recovery (Apple) Apple discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

*Proposal 1 : RAN2 to agree on the below way forward:*

*- Agree to have company CRs to RAN2-117e (which would be used to decide if this procedure would be agreed) that capture the entire procedure based on the agreements from the below proposals and based on the progress made with agreements from offline #222,221.*

*Proposal 2: UE does not activate the SCG for MCG failure recovery procedure, but follows the RRC response message from the NW (on SCG) after it has triggered the recovery procedure on SN.*

*Proposal 3: In the SCG deactivated state, the UE keep the SCG configuration for SR that it has at the time of deactivation. TAT expiry triggers the release of this configuration.*

*Proposal 4: The NW can provide dedicated RACH and/or SR configuration to the UE at SCG deactivation time, which the UE applies during SCG deactivation.*

*Proposal 5: In the SCG deactivated state, if the UE triggers SR in the SN for the purpose of MCG failure recovery, the UE monitors the PDCCH. Further details on this including any open items can be treated using the company CRs to RAN2-117e.*

*Proposal 6: T-316 timer and its value range is sufficient for MCG failure recovery in SCG deactivated state.*

### 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 network aspects of CPAC that require further interaction with RAN3

Including decision on the name of the new inter-node RRC message for CPAC

By Email [224] (13)

[R2-2201250](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201250.zip) Discussion on CPAC from NW perspective CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: R17 CPAC cannot apply to NGEN-DC as well as NE-DC architecture, but only apply to EN-DC as well as NR-DC architecture.*

*Proposal 2: For MN initiated inter-SN CPA and CPC, RAN2 to agree to reuse the list of proposed PSCell candidates within CG-ConfigInfo introduced for SN initiated inter-SN CPC to provide the candidate cells recommended by MN to T-SN.*

*Proposal 3: For MN initiated inter-SN CPA and CPC, T-SN can only accept or reject the cells recommended by MN, i.e., it cannot come up with additional cells outside the candidate cells recommended by MN.*

*Proposal 4: The T-SN shall configure the measConfig based on the assumption that UE will remove all the CPC related measIds, measObjects and reportConfig configurations configured by S-SN to ensure the consistency of the measConfig between UE and T-SN.*

*Proposal 5: RAN2 to agree that when generating the measurement gap related configurations during CPAC configuration, only full configuration can be adopted by T-SN.*

*Proposal 6: RAN2 to agree to send LS to RAN3 to indicate the following open issues on CPAC:*

*- On data forwarding:*

*• For both MN initiated inter-SN CPAC and SN initiated inter-SN CPC:*

* FFS How to provide the early data forwarding address to S-SN;*

* FFS how to provide the late data forwarding address to S-SN;*

*- On data transmission to UE:*

*• For both MN initiated inter-SN CPAC and SN initiated inter-SN CPC:*

* FFS which message is used for MN to inform the S-SN to stop providing user data to UE;*

*- On how to indicate accepted candidate cells to S-SN:*

*• For SN initiated inter-SN CPC:*

* FFS which message used for the source SN to provide the updated S-SN measurement configurations for CPC to the MN;*

[R2-2201081](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201081.zip) Solving open issues for Rel-17 CPAC Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: MN always informs S-SN regarding the cells which have been acknowledged/not acknowledged by the T-SN, even if no response from S-SN is expected.*

*Observation 1: If the behavior concerning MN informing or not informing the S-SN on which PSCells have been acknowledged by the T-SN is just described in the NOTE, it effectively means Solution 2 for SN-initiated CPC is not supported (contrary to the RAN2 agreement).*

*Proposal 2: The indication on which PSCells have been acknowledged by the T-SN is supported in the inter-node message from MN to S-SN.*

*Observation 2: If T-SN acknowledges all suggested PSCells, delta configuration can be safely used as subsequent S-SN reconfiguration is not likely to happen.*

*Observation 3: T-SN may always use full configuration to avoid potential configuration mismatch in case the S-SN decides to reconfigure the UE prior to CPC execution.*

*Proposal 3: S-SN shall inform under which circumstances S-SN configuration will not be changed after T-SN preparation is done.*

*Proposal 4: How the S-SN informs the MN and T-SN about the use of delta-configuration for candidate PSCells is defined in the standard (e.g. as a part of SN Change Required message).*

*Observation 4: Using ULInformationTransferMRDC to indicate the CPAC execution condition has been met and then subsequently sending the RRCReconfigurationComplete introduces additional signalling step at Uu interface and delays the completion of RRC Reconfiguration procedure.*

*Proposal 5: UE sends ULInformationTransferMRDC using the old configuration. It contains Conditional Reconfiguration ID and embedded RRCReconfigurationComplete.*

*Proposal 6: If Proposal 5 is agreed, RAN2 shall decide whether the same behavior is specified for the case when CPAC configuration does not contain a new MCG config.*

*Proposal 7: CHO and CPAC can be configured simultaneously. Network takes care of configuration handling in case one of CHO/CPAC triggers.*

*Proposal 8: UE may be allowed to delete all other conditional reconfiguration when CHO/CPAC triggers. If network wants the UE to continue evaluating some of them after CHO/CPAC, network provides those after completed CHO/CPAC.*

[R2-2201305](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201305.zip) CPAC procedure for SCG update Samsung R&D Institute UK discussion

*Observation 1. S-SN configuration modification needs the corresponding update of current MCG configuration, candidate target pscell configuration, and its corresponding MCG configuration.*

*Proposal 1. CPAC procedure should be able to support the S-SN configuration modification procedure where current MCG configuration can be updated as well as the candidate target pscell configuration and corresponding MCG configuration in the conditional Reconfiguration.*

*Observation 2. Current Xn-AP procedure cannot support the simultaneous update of current SCG/MCG configuration and candidate pscell configuration and corresponding MCG configuration in conditional Reconfiguration as it is.*

*Proposal 2. RAN2 inform RAN3 about the requirement on S-SN configuration update procedure, and let them develop the necessary Xn-AP procedure.*

[R2-2200613](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200613.zip) Skip response from S-SN in SN-initiated CPC NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: RAN2 to agree that the second part of procedure in Solution 2 to be skipped is the message from the source SN to the MN, i.e. step 5.*

*Proposal 2: RAN2 to agree the following as working assumption and wait for RAN3 response.*

* The Step 4 is mandatory, i.e. MN always indicates the candidate PSCells accepted by the target SN to the source SN.*

* The Step 5 is optional, i.e. MN can skip waiting for the potential response from the source SN in some cases (e.g. when target SN accepts all candidate PSCells.)*

[R2-2200923](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200923.zip) Remaining issues on CPAC procedure ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: RAN2 confirms the new inter-node RRC message that includes the full list of CG-Config(s) is only used from the target SN to the MN, i.e. not used from the source SN to the MN.*

*Observation 1: In SN initiated inter-SN CPC, the source SN provides a separate list of proposed candidate PSCells, including execution conditions, to the MN. And then the MN transfers the list of proposed candidate PSCells to the candidate SN for the PSCell selection.*

*Observation 2: According to the agreement “Target SN chooses candidate target PSCell for CPC from the list of cells and/or measurements provided by the source SN/MN”, the target SN is also allowed to choose candidate PSCells based on measurements provided by the MN in MN initiated CPC and CPA procedure.*

*Proposal 2: The MN is not required to provide a separate list of proposed candidate PSCell(s) to the target SN in MN initiated inter-SN CPC and CPA.*

*Proposal 3: The target SN can not pick other alternative target PSCells which have no associated measurements provided by the MN.*

*Observation 3: The source SN should be informed about the accepted candidate PSCell(s) regardless of whether the source SN configuration update is required, e.g. for data forwarding, CPC modification.*

*Proposal 4: RAN2 confirms the skip of the second part refers to “MN not waiting for S-SN -> MN response”. It means informing the accepted candidate PSCells from the MN to the source SN (i.e. step 4) is mandatory before sending the CPC configuration to the UE. But the response/message from the source SN to the MN (i.e. step 5) is optional.*

*Proposal 5: RAN2 sends a LS to RAN3 to inform them about the RAN2 understanding on the skip of the second part, and ask them to decide which messages are used in step 4 and step 5.*

[R2-2200924](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200924.zip) Further consideration on CPAC procedure ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Observation 1: RAN3 agreed that the initiating node provides upper limit for the number of PSCells to be prepared (i.e. maximum number of PSCells) in CPAC. So the source SN can directly manage the maximum number of PSCells to be prepared by each candidate SN upon initiation of SN initiated inter-SN CPC procedure.*

*Observation 2: The MN and the source SN can adjust the maximum number of candidate PSCells to be prepared before the CPAC is executed.*

*Observation 3: If the coexistence of CPC with MN involvement and CPC without MN involvement is supported, the MN should be informed about the execution of intra-SN CPC without MN involvement even in case it’s configured via SRB3, to release the configuration and reserved resources for other candidate PSCells in the NW side after completion of the CPC execution.*

*Observation 4: If the coexistence of CPC with MN involvement and CPC without MN involvement is supported, the MN and the SN should split/negotiate the conditional reconfiguration ID (i.e. CondReconfigId) space to be used for CPC with/without MN involvement, to avoid the ID collision between these two cases.*

*Observation 5: Given that the intra-SN CPC procedure may be transparent to the MN, some inter-node coordination is also required for not supporting the coexistence of CPC with MN involvement and CPC without MN involvement.*

*Proposal 1: The maximum number of candidate PSCells for CPAC (including Rel-17 CPAC with MN involvement and Rel-16 CPC without MN involvement) is 8.*

*Proposal 2: The MN and the source SN coordinate the maximum number of candidate PSCells to be configured for SN initiated CPC (including both intra-SN and inter-SN CPC), to ensure the maximum number of total candidate PSCells is not exceeded.*

*Proposal 3: An inter-node renegotiation solution is used to allocate the maximum number of candidate PSCells that the source SN is allowed to configure for SN initiated CPC:*

*− The MN indicates the maximum number of candidate PSCell allowed to be configured to the source SN;*

*− If the source SN wants to configure more candidate PSCells, the source SN can send the requested value to the MN.*

*Proposal 4: RAN2 discuss whether to support the coexistence of CPC with MN involvement and CPC without MN involvement.*

*Proposal 5: If the coexistence of CPC with MN involvement and CPC without MN involvement is supported, RAN2 further discuss:*

*− How to inform the MN about the execution of intra-SN CPC without MN involvement in case that it’s configured via SRB3;*

*− How to split/negotiate the conditional reconfiguration ID (i.e. CondReconfigId) space to be used by the MN and the SN.*

*Proposal 6: If the coexistence of CPC with MN involvement and CPC without MN involvement is not supported, RAN2 further discuss how to ensure the non-coexistence of these two features.*

[R2-2201082](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201082.zip) Clarifications to the issues found in CPAC running CRs Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*(moved from 8.2.3.2)*

*Proposal 1: Source SN should always include the CPC execution condition for the suggested PSCell in SN Change Required message to MN. The Optional flag is to be removed from condExecutionConditionSN-r17 in stage 3 CR for NR.*

*Proposal 2: Capture in stage-2 CR that source SN can update the CPC execution conditions (for the accepted PSCells) after being informed about the accepted candidate PSCells.*

*Proposal 3: Capture in stage-2 CR that the CPAC configuration may contain MCG and SCG reconfigurations.*

*Proposal 4: Consider the FFS in stage 2 CR (TS 37.340) on what defines a successful reconfiguration procedure to be already addressed by the current wording (i.e. FFS to be deleted).*

[R2-2201000](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201000.zip) CPAC network procedures Ericsson discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201072](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201072.zip) CPAC procedures from network perspective Qualcomm Incorporated discussion Rel-17

[R2-2200589](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200589.zip) Discussion on CPAC procedures from NW perspective vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200773](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200773.zip) Discussion on CPAC from NW perspective Lenovo, Motorola Mobility discussion Rel-17

[R2-2200362](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200362.zip) Support modification and cancellation of C-PSCells in the CG-CandidateList Google Inc. draftCR Rel-17 38.331 16.7.0 B LTE\_NR\_DC\_enh2-Core

Email discussions ([224])

* [AT116bis-e][224][DCCA] CPAC procedures from NW perspective (CATT)

 Scope: Discuss the remaining details of CPAC procedures:
A) For SN initiated CPC: 1) Is the indication of prepared PSCells always sent to S-SN, and in which procedure step? What are the RAN2/RAN3 messages use for indicating a) accepted cells from MN to S-SN, b) updated configuration from S-SN to MN and c) RRCComplete from MN to S-SN
B) For MN initiated CPAC: 1) Does MN provide separate list of proposed PSCells to T-SN? 2) Can T-SN pick different PSCells than those in the list?”

 Intended outcome: Discussion summary in [R2-2201704](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201704.zip).

 Deadline: Deadline 1

By Web Conf (1st Week Thursday) (1)

[R2-2201704](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201704.zip) Summary of [AT116bis-e][224][DCCA] CPAC procedures from NW perspective (CATT) CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

*Potentially easy agreements*

*SN-initiated CPC*

*1) Is the indication of prepared PSCells always sent to S-SN, and in which procedure step?*

*Proposal 1: RAN2 to confirm that in SN initiated inter-SN CPC, the S-SN is always informed about which candidates were accepted/rejected by T-SN. (15/18)*

*2) What are the RAN2/RAN3 messages used for the procedure*

*Proposal 3: It is up to RAN3 to decide the message used for indicating the accepted PSCells from MN to S-SN, before sending the RRC Reconfiguration message including the CPC configurations to the UE. (17/18)*

*Proposal 4: It is up to RAN3 to decide the message used for indicating the accepted PSCells from MN to S-SN, after sending CPC configuration to the UE (if Alt 2 in Proposal 2 is supported). (16/17)*

*Proposal 5: It is up to RAN3 to decide the message used for S-SN to provide the updated configuration. (17/18)*

*Proposal 6: It is up to RAN3 to decide the message used for providing the RRCReconfigurationComplete message from MN to S-SN. (17/18)*

- Ericsson thinks we agreed last time that MN determines whether to trigger the 2nd procedure. If MN has to inform S-SN before configuring the UE. CATT clarifies that P1 only tries to confirm previous working assumption and leave signalling to RAN3. This does not invalidate previous agreements.

**Agreements (pending P2)**

* 1: RAN2 to confirm that in SN initiated inter-SN CPC, the S-SN is always informed about which candidates were accepted/rejected by T-SN. (15/18)
* 3: It is up to RAN3 to decide the message used for indicating the accepted PSCells from MN to S-SN, before sending the RRC Reconfiguration message including the CPC configurations to the UE. (17/18)
* 4: It is up to RAN3 to decide the message used for indicating the accepted PSCells from MN to S-SN, after sending CPC configuration to the UE (if Alt 2 in Proposal 2 is supported). (16/17)
* 5: It is up to RAN3 to decide the message used for S-SN to provide the updated configuration. (17/18)
* 6: It is up to RAN3 to decide the message used for providing the RRCReconfigurationComplete message from MN to S-SN. (17/18)

*Further discussion needed*

*SN-initiated CPC*

*Proposal 2: RAN2 confirms the following understandings of the two alternatives. Further discuss if down selection between them is possible in RAN2, or we just leave it to RAN3 to decide:*

*- Alt 1: MN is mandatory to indicate S-SN the candidates accepted or rejected by T-SN after receiving the SN addition acknowledge message from T-SN, but it is optional for MN to wait for the response from S-SN before sending the CPC configuration to the UE. FFS if MN also informs S-SN whether it will wait for S-SN response before sending the CPC configuration to the UE. (10/18)*

*- Alt 2: MN is optional to indicate S-SN the candidates accepted or rejected by T-SN after receiving the SN addition acknowledge message from T-SN. And if MN skips the indication to S-SN before sending the CPC configuration to the UE, it should send the indication of accepted cells by T-SN to S-SN in some later step in the procedure. (5/18)*

- CATT thinks RAN2 could also agree that there are different ways and leave things to RAN3. Should first discuss RAN2 understanding.

Alt1

- Nokia thinks this doesn't work without the FFS. We need some criteria when MN waits and when it doesn't. Should specify that. RAN3 is already discussing this.

- LGE wonders if this impacts UE measurements. Ericsson thinks this is against the previous agreement where it's MN choice whether to configure UE immediately or indicate S-SN. Huawei agrees and thinks RAN3 is discussing this already.

- Nokia thinks the accepted/rejected cells should be always indicated to S-SN. But not mandatorily before configuring the UE (while Alt-1 mandates that).

Alt2

- Nokia prefers this approach as it's clearer on what MN has to do. QC agrees.

- ZTE has issues with Alt2 as we need two procedures depending on whether the second part is used or not. This can have more impact to RAN3. Can just let RAN3 decide.

- NEC can accept this but wonders what " it should send the indication of accepted cells by T-SN to S-SN in some later step in the procedure " means? Should it be "it **shall**"?

* RAN2 thinks that MN is optional to indicate S-SN the candidates accepted or rejected by T-SN after receiving the SN addition acknowledge message from T-SN. And if MN skips the indication to S-SN before sending the CPC configuration to the UE, it sends the indication of accepted cells by T-SN to S-SN in some later step in the procedure. Up to RAN3 how the signalling is done efficiently.
* 7: Send LS to RAN3 to ask them to discuss the inter-node message based on the agreements made (can include all CPAC agreements).

*MN-initiated CPAC*

*1) Does MN provide separate list of proposed PSCells to T-SN, and*

*Proposal 8: Further discuss and down select between the following alternatives:*

*- Alt 1: Use legacy candidate cell information (candidateCellInfoListMN) to provide the candidate cells recommended by MN to T-SN. (10/18)*

*- Alt 2: Reuse the list of proposed PSCell candidates within CG-ConfigInfo introduced for SN initiated inter-SN CPC to provide the candidate cells recommended by MN to T-SN. (12/18)*

- CATT explains we ruled out 3rd option (new message). Both of these options work and this is mainly a preference.

Alt1

- NEC wonders how T-SN can differentiate MN and SN-initiated procedures? Nokia thinks this may be an issue but there should be no major issue. Thinks both options are fine. Ericsson prefers this option.

Alt2

- Ericsson thinks this does not allow target to make best decision. SN knows the cells, not MN.

* 8 MN provides separate list of proposed PSCells to T-SN, and uses legacy candidate cell information (candidateCellInfoListMN) to provide the candidate cells recommended by MN to T-SN.

*2) Can T-SN pick different PSCells than those in the list?*

- Ericsson this is different than previous case. Huawei clarifies that if there is no measurement result for the cell, then there are no measurements configured. This could mean T-SN forces MN to configure additional MO which may not even be always possible due to UE capabilities. This can cause the procedure to fail.

* 9: For MN initiated CPAC, only the cells within the list recommended by MN can be chosen by T-SN.
* Offline 227 (CATT): LS to RAN3 on the CPAC agreements (by Email).

Email discussions ([227])

* [AT116bis-e][227][DCCA] LS to RAN3 on CPAC (CATT)

 Scope: Indicate RAN2 agreements on CPAC to RAN3.

 Intended outcome: Approved LS in [R2-2201712](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201712.zip).

 Deadline: Deadline 4

By Email (1)

[R2-2201712](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201712.zip) LS on RAN2 agreements for CPAC RAN2 LS out Rel-17 LTE\_NR\_DC\_enh2-Core To:RAN3

#### 8.2.3.2 CPAC procedures from UE perspective

Including discussion on UE behaviour upon CPAC execution, e.g. does UE inform network of the triggering and how?

Web Conf (1st week Thursday) (2)

Does UE need to inform network of the CPAC execution?

[R2-2201001](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201001.zip) UE procedures and signalling for CPAC Ericsson discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1 The UE notifies the MN that conditions have been fulfilled for CPAC using UE’s current configuration (i.e. not the MCG configuration to be applied). FFS which solution to specify:*

*i. UE notifies the network of CPAC execution before transmitting RRCReconfigurationComplete with newly applied MCG configuration.*

*ii. UE transmits RRCReconfigurationComplete upon CPA/CPC execution with current configuration (including an embedded RRCReconfigurationComplete with newly applied configuration).*

*Proposal 2 Implement that an RRCReconfiguration applied upon CHO execution may contain an SCG RRCReconfiguration as part of the rel-17 MR-DC WI.*

*Proposal 3 Upon intra-SN CPC and CHO execution, the UE does not include the condReconfigId/CondReconfigurationId in the RRCReconfigurationComplete/ RRCConnectionReconfigurationComplete transmitted to the MN.*

*Proposal 5 UE is not required to perform measurements on measId(s) that were not indicated in the condExecutionCond/triggerCondition (if the execution conditions for the candidate cells recommended by the source SN and the SCG measConfig for CPC may be included in the SN Change Required).*

*Proposal 6 It is possible to configure the UE with target candidates associated to the S-SN and to other target candidate SN(s) simultaneously. FFS whether these are configured in RRC as in Rel-16, as in Rel-17 or independently.*

*Proposal 7 Discuss if we need to specify that an execution condition condExecutionCond within an MCG configuration refers to a MeasID(s) in an MCG MeasConfig, and an execution condition condExecutionCond within an SCG configuration refers to a MeasID(s) in an SCG MeasConfig.*

*Proposal 8 Only SRB1 can be used in CPA and Inter-SN CPC scenarios in Rel-17. The complete message upon CPAC execution for CPA and Inter-SN CPC in Rel-17 should be provided to the MN via SRB1.*

*Proposal 4 RAN2 agrees that MN-initiated CPC is removed; or RAN2 agrees that for MN-initiated CPC the UE can be configured with A3/A5 events based on PSCell quality (optional with capability signalling).*

[R2-2201094](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201094.zip) UE behaviour upon CPAC execution Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: Discuss whether it can be assumed that the MN will make sure that it can decode an RRCConnectionReconfigurationComplete message at CPC execution with the new MCG configuration of any conditional configurations.*

*Proposal 2: If this cannot be assumed, specify option 1 i.e. “UE notifies the network of CPAC execution before transmitting RRCReconfigurationComplete with newly applied MCG configuration” and use the TP in Annex (ULInformationTransferMRDC is used to indicate the conditional reconfiguration ID).*

[R2-2201251](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201251.zip) Remaining issues on CPAC from UE perspective CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: NW ensures that the MCG configuration associated with the CPAC configuration does not include configuration which is unnecessary for PSCell change/addition. MCG configuration intended only for MN configuration is only updated separately from CPAC for UE.*

[R2-2201112](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201112.zip) Text proposal to CPAC RRC running CR Apple discussion LTE\_NR\_DC\_enh2-Core

*Proposal 1: Explicitly indicates the physical cell ID associated with each set of condExecutionCond/ condExecutionCondSN and condRRCReconfig in NR RRC running CR.*

*Proposal 2: Explicitly indicates the physical cell ID associated with each set of triggerCondition/ triggerConditionSN and condReconfigurationToApply in LTE RRC running CR.*

#### 8.2.3.3 Other CPAC aspects

This agenda item may use a summary document.

Including discussion on whether it's possible to specify CPAC failure handling in Rel-17 (with CR to illustrate the needed Stage-3 details)

Including discussion on whether it's possible to specify CPAC co-existence with CHO in Rel-17 (with CR to illustrate the needed Stage-3 details)

This agenda item may be deprioritized in this meeting .

Web Conf (2nd week Monday) (1)

Does RAN2 support CPAC with CHO in Rel-17?

[R2-2200897](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200897.zip) Combination of CPAC and CHO CMCC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Proposal 1: The coexistence of CHO and CPAC is supported.*

*Proposal 2: In the procedure of CHO without SN change, the target MN is informed of CPAC related configurations from the SN.*

*Proposal 3: In the procedure of CHO without SN change, the Xn interface between the target MN and the candidate SN is established after receiving CPAC related configurations from the SN.*

[R2-2200614](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200614.zip) Further discussion on Co-existence of CHO and CPAC NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200925](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200925.zip) Discussion on coexistence of CHO and CPAC ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201252](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201252.zip) Discussion on CPAC Failure Handling and CPAC Co-existence with CHO CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201643](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201643.zip) Coexistence of CHO and CPC InterDigital, Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

Other aspects:

[R2-2200341](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200341.zip) CPC-based SCG RLF handling ITRI discussion LTE\_NR\_DC\_enh2-Core R2-2110282

[R2-2200590](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200590.zip) Discussion on other aspects for CPAC vivo discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200615](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200615.zip) CPA with SN-terminated MCG bearer configuration NEC discussion Rel-17 LTE\_NR\_DC\_enh2-Core R2-2110662

[R2-2200774](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200774.zip) Miscellaneous issues on CPAC Lenovo, Motorola Mobility discussion Rel-17

[R2-2201074](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201074.zip) Other CPAC aspects Qualcomm Incorporated discussion Rel-17

[R2-2201210](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201210.zip) Other issues on CPAC LG Electronics discussion LTE\_NR\_DC\_enh2-Core

[R2-2201477](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201477.zip) Discussion on CPAC failure handling NTT DOCOMO INC. discussion

[R2-2201642](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201642.zip) SCG failure recovery with CPAC InterDigital discussion Rel-17 LTE\_NR\_DC\_enh2-Core Late

### 8.2.4 Temporary RS for SCell activation

Including concrete proposals (i.e. TPs) on MAC and RRC details for TRS-based SCell activation

Including discussion on what is configured in RRC and what is indicated in the MAC CE, how to handle Scell activation when some SCells are configured with TRS and others are not

Web Conf (1st week Thursday) (1)

LS on TRS-based SCell activation signalling:

[R2-2200096](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200096.zip) LS on triggering signalling of temporary RS for SCell activation (R1-2112983; contact: Huawei) RAN1 LS in Rel-17 LTE\_NR\_DC\_enh2 To:RAN2 Cc:RAN4

*(moved from 8.2.1)*

*For Alt1 (include per SCell TRS configuration index in MAC CE):*

*Q1: What is the maximum number of TRS configurations supported per SCell? Is there a difference for FR1 and for FR2?*

*Answer: RAN1 answer is provided by example set of RRC parameters row #2 of sheet Alt1, i.e., maximum number of TRS configurations supported per SCell (among which one TRS configuration can be indicated by a bit block in a MAC-CE) is 15 (i.e. row #2) assuming that a value zero indicated by a bit block in the MAC-CE means no RS resource transmitted. There is no difference for FR1 and FR2.*

*For Alt2 (include per cell group TRS trigger state id in MAC CE)*

*Q2: What is the maximum number of TRS trigger states (where a "trigger state" indicates a set of TRS used for activation of a set of SCell(s)) supported per cell group? Is there a difference for FR1 and for FR2?*

*Answer: RAN1 answer is provided by example set of RRC parameters row #2 ~ 3 in sheet Alt2, i.e., maximum number of TRS trigger states supported per cell group that can be indicated by a MAC-CE is 128 (i.e. row #3) where each trigger state is associated with one or multiple CSI-AssociatedReportConfigInfo to indicate TRS for up to 15 to-be-activated SCells. There is no difference for FR1 and FR2.*

* Noted (discussed together with contributions)

Web Conf (1st week Thursday) (1+7+2)

[R2-2201095](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201095.zip) MAC CE and RRC signalling for efficient SCell activation Huawei, HiSilicon, Samsung, vivo, LG Electronics discussion Rel-17 LTE\_NR\_DC\_enh2-Core

*Observation 1: if flexibility is important, Alt1 should be used, possibly with > 16 TRS per SCell.*

*Observation 2: If low flexibility of Alt1-2 or Alt2 is acceptable, Alt1-2 or Alt2 could be used.*

*Observation 3: From TS 38.331 perspective, Alt1-2 is simpler than Alt2.*

*Proposal: Discuss if flexibility is the most important and, if so, use Alt1a.*

- Nokia thinks Alt2 is a bit messy. Some parameters are not used and some new parameters are needed. So it seems easier to define new IEs no matter what. From MAC CE viewpoint both alternatives can work. Alt1-2 seems slightly simpler for MAC but doesn't see issue with Alt1 since PHR is already similar.

- Futurewei supports Alt1. With Alt2, there are some limitations that will impact RRC signalling and make it more complex.

- vivo prefers alt1a due to flexibility. Alt2 could introduce some delay.

- QC is fine with both Alt1 and Alt2. Apple agrees

- OPPO thinks Alt1 is OK. We can discuss details after. ZTE also prefers alt1.

- Ericsson prefers alt2 but can accept alt1. Doesn't think this is only about flexibility. Can accept one octet for TRS ID. FR2 cells can use beams than 16, that's why it's needed.

* Use alt1 with one octet used for TRS ID (including gap length if not configured by RRC). Can indicate to RAN1 that RAN2 decided on this and ask if there is any limitation for configuration in Rel-17.

[R2-2200389](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200389.zip) Discussion on TRS activation for fast SCell activation OPPO discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200543](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200543.zip) Discussion on TRS for fast SCell activation Alt1 vs Alt2 Futurewei discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2200582](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200582.zip) Leftover issues for TRS based SCell activation Samsung Electronics Polska discussion LTE\_NR\_DC\_enh2-Core

[R2-2200883](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200883.zip) Temporary RS activation Nokia, Nokia Shanghai Bell discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201041](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201041.zip) temporary RS for SCell activation Ericsson discussion

[R2-2201395](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201395.zip) Discussion on Temporary RS activation for fast SCell activation vivo discussion LTE\_NR\_DC\_enh2-Core

Draft CRs:

[R2-2200390](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200390.zip) Introduction of TRS based SCell activation-38321 OPPO CR Rel-17 38.321 16.7.0 1181 - B LTE\_NR\_DC\_enh2-Core

[R2-2200391](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200391.zip) Introduction of TRS based SCell activation-38331 OPPO draftCR Rel-17 38.331 16.7.0 B LTE\_NR\_DC\_enh2-Core

Email discussions ([225])

* [AT116bis-e][225][DCCA] TRS-based SCell activation CRs and LS to RAN1 (OPPO)

 Scope: Update CRs for TRS-based SCell activation based on online discussion and using [R2-2201095](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201095.zip) as baseline. Provide LS to RAN1 informing them of the decision.

 Intended outcome: Endorsable CRs in [R2-2201713](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201713.zip) and [R2-2201714](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201714.zip). Approved LS to RAN1 in [R2-2201715](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201715.zip).

 Deadline: Deadline 4

By Email or Web Conf (2nd Week Tuesday) (3)

[R2-2201713](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201713.zip) Introduction of TRS based SCell activation-38321 OPPO draftCR Rel-17 38.321 16.7.0 B LTE\_NR\_DC\_enh2-Core

[R2-2201714](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201714.zip) Introduction of TRS based SCell activation-38331 OPPO draftCR Rel-17 38.331 16.7.0 B LTE\_NR\_DC\_enh2-Core

[R2-2201715](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201715.zip) LS on RAN2 agreements for TRS-based Scell activation RAN2 LS out Rel-17 LTE\_NR\_DC\_enh2-Core To:RAN1

### 8.2.5 UE capabilities

Including discussion on RAN2 aspects of UE capabilities for SCG deactivation, CPAC and temporary RS.

If changes are proposed against the baseline endorsed in previous meeting, the proposals should illustrate the differences to the baseline illustrated in [R2-2109676](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116-e/Docs/R2-2109676.zip).

Including discussion on condPSCellChange-r16 as the Prerequisite for R17 MN-initiated CPC, reuse of R15 RLF/BFD UE capabilities for RLF/BFD monitoring on deactivated SCG, support of RLM/BFD monitoring on deactivated SCG as the Prerequisite for Rachless SCG activation, separate capabilities for Activation/Deactivation of SCG in Resume and Reconfiguration cases, etc.

Web Conf (1st week Thursday) (1)

[R2-2200275](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200275.zip) Discussion on remaining issues on DCCA UE capabilities Intel Corporation discussion Rel-17 LTE\_NR\_DC\_enh2-Core

CPAC capabilities:

*Proposal 1: condPSCellChange-r16 should be the Prerequisite for R17 MN initiated CPC.*

*-* Nokia thinks this is not necessary. R16 is limited so should keep it separate as R17 is quite different and thinks R16 and R17 implementations can be very different. MTK agrees and thinks it's not clear there is dependency. Would be easier for testing purposes. Huawei agrees and thinks that not all networks may implement R16 CPC but only R17 CPAC, so testing may not be possible.

- LGE agree with P1 because there are many same approaches from the UE perspectives.

- Ericsson wonders if this should be SN-initiated? Intel clarifies this should cover both MN- and SN-initiated cases. Wonders if there is a case where UE supports R17 but not R16?

* 1: condPSCellChange-r16 is not the Prerequisite for R17 MN initiated CPC.

*Proposal 5: RAN2 to confirm that per UE CPAC capabilities means CPAC is supported in the bands/band combinations for which the UE supports DC.*

- QC wonders why to have per-UE for R17 if the R16 CPC capabilities were all per-band? Apple agrees.

- Nokia is fine with P5 but now is not sure given QC comment. MTK indicates that even in R16 UE sets the same value for all bands in FR1 and FR2. Would like to follow the same approach in R17.

* 5: RAN2 confirms that per UE CPAC capabilities follow the same approach as for Rel-16 CPC capabilities (granularity etc.)

Deactivated SCG capabilities:

*Proposal 2: reuse R15 RLF/BFD UE capabilities for RLF/BFD monitoring on deactivated SCG, i.e., no extra UE capabilities for RLF/BFD monitoring on deactivated SCG is needed.*

*Proposal 3: consider support of RLM/BFD monitoring as the Prerequisite for Rachless SCG activation.*

*Proposal 4: introduce separate capabilities for Activation/Deactivation of SCG in Resume and Reconfiguration cases.*

[R2-2201096](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201096.zip) UE capabilities Huawei, HiSilicon discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2201297](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201297.zip) Discussion on CPAC Capabilities MediaTek Inc. discussion

## 8.3 Multi SIM

(LTE\_NR\_MUSIM-Core; leading WG: RAN2; REL-17; WID: RP-212610)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 4 threads

Contributions should illustrate the Stage-3 details of the proposals (e.g. in an Annex containing TP against the running CRs).

### 8.3.1 Organizational, Requirements and Scope

Including LSs, any rapporteur inputs and results of running CR email discussions [233]-[236]

Including rapporteur input on remaining open issues needed to close the WI.

Web Conf (1st week Friday) (1)

[R2-2200132](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200132.zip) Reply LS on gap handling for MUSIM (R4-2120342; contact: vivo) RAN4 LS in Rel-17 LTE\_NR\_MUSIM-Core To:RAN2 Cc:RAN

* RAN#94e discussed the RAN4 LS and approved conclusions of [RP-213622](https://www.3gpp.org/ftp/TSG_RAN/TSG_RAN/TSGR_94e/Docs/RP-213622.zip), with new WI approved in [RP-213679](http://3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_94e/Docs/RP-213679.zip) (with RAN4 TUs)
* Noted (to be discussed together with contributions under 8.3.3)

By Email [200] (1)

[R2-2200144](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200144.zip) LS on Paging Cause Indication for Voice Service Supported in RRC Inactive assistance information (S2-2109303; contact: Sony) SA2 LS in Rel-17 MUSIM To:RAN3 Cc:RAN2

* [200] Noted (RAN2 in CC, no actions)

By Email [200] (4)

Results of running CR email discussions [233]-[236]:

[R2-2200652](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200652.zip) Running LTE RRC CR for MUSIM Samsung Electronics Co., Ltd draftCR Rel-17 36.331 16.7.0 B LTE\_NR\_MUSIM-Core

* [200] Endorsed (as running CR)

[R2-2200800](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200800.zip) Running NR RRC CR for MUSIM vivo draftCR Rel-17 38.331 16.7.0 LTE\_NR\_MUSIM-Core

* [200] Endorsed (as running CR)

Outcome of email discussion [236]:

[R2-2201485](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201485.zip) Running CR to 38300 for Multi-USIM devices support Ericsson draftCR Rel-17 38.300 16.8.0 B LTE\_NR\_MUSIM-Core

* [200] Endorsed (as running CR)

[R2-2201486](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201486.zip) Running CR to 36300 for Multi-USIM devices support Ericsson draftCR Rel-17 36.300 16.7.0 B LTE\_NR\_MUSIM-Core

* [200] Endorsed (as running CR)

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

Rapporteur input on remaining open issues needed to close the WI:

[R2-2200801](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200801.zip) Remianing issue list vivo other Rel-17 LTE\_NR\_MUSIM-Core

*Switching procedure without leaving RRC\_CONNECTED*

*Issue 1-1: Supported gap pattern for MUSIM*

*Issue 1-2: FFS if signalling supports more periodic and aperiodic gaps for MUSIM*

*Issue 1-3: How NW Configures UE to provide assistance info for switching notification via otherConfig of RRCReconfiguration message*

*Issue 1-4: FFS how the gap offset is configured for periodic and aperiodic gap*

*Issue 1-5: FFS how UE indicates release of gap pattern*

*Issue 1-6: FFS if UE is allowed to update UAI message after the UE performs cell reselection in NW B or after the UE performs handover in NW A*

*Issue 1-7: The definition of musim-GapConfig included in the RRCReconfiguration message*

***Non-critical issues:***

*Issue 1-8: What’s the UE behaviour in case the timer for RLM/ BFD in NW-A is running and UE switches to NW-B without leaving RRC\_CONNECTED state*

*Issue 1-9: How to handle the overlapping of one scheduling gap with measurement gap or other scheduling gap*

*Switching procedure with leaving RRC\_CONNECTED*

*Issue 2-1: FFS whether the configuration of “configured time” is mandatory when network configures UE to report the preference of leaving RRC\_CONNECTED state*

*Issue 2-2: What’s the range of the “configured time”*

*Paging collision avoidance*

*Issue 3-1: RAN2 to discuss whether to specify the AS-NAS interaction for UE assistant information in EPS.*

*Issue 3-2: RAN2 to capture the alternative IMSI calculation description in TS 36.304.*

*Paging with service indication*

***Non-critical issues:***

*Issue 4-1: FFS if Introduction of paging cause impacts stage 2 specs (38.300 and 36.300)*

*UE capabilities and other aspects*

*Issue 5-1: Detailed MUSIM capabilities: FFS whether we need separate bits for periodic and aperiodic gaps. FFS if we need capability bit for leaving RRC\_CONNECTED*

- Samsung wonders if there will be opportunity to raise up other open issues? Chair clarifies this will be done after this meeting. Main session will indicate the exact details.

* Noted (to be taken into account in this and next meeting)

[R2-2201490](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201490.zip) Discussion on the remaining FFS in TS 36.300 and 38.300 Ericsson, Samsung discussion

*Proposal 1 No new independent section specific to MUSIM needs to be created in TS 36.300. The description of the MUSIM enhancement is added in the existing section Other (clause 23).*

*Proposal 3 A new section for MUSIM is created in TS 38.300.*

- Huawei thinks paging collision avoidance solution can be in Stage-3 and we don't even need to capture that in Stage-2. Should focus on network switching solutions. UE assistance information can capture the information in 38.300.

- Intel thinks it would be useful to have a section to make it clear this is a section. Apple and Samsung agrees.

* 1 No new independent section specific to MUSIM needs to be created in TS 36.300.
* 3 A new section for MUSIM can be created in TS 38.300 (should be checked with specification rapporteur).
* 2 The paging cause does not need to be described in TS 36.300.
* 4 The paging cause does not need to be described in TS 38.300.
* 5 The remaining FFS and Editor’s note can be removed from TS 38.300

### 8.3.2 Paging collision avoidance

This agenda item may be deprioritized in this meeting.

Including discussion on RAN2 aspects of paging collision avoidance

By Email [230] (4)

How to handle the LTE IMSI offset in RAN2?

[R2-2200470](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200470.zip) Remaining issues on 36.304 running CR China Telecommunications, Samsung discussion Rel-17

[R2-2200571](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200571.zip) Alternative IMSI calculation for paging collision avoidance NEC discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200802](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200802.zip) Remaining issue for EPS Paging Collision avoidance vivo discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200414](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200414.zip) SI Change Lenovo, Motorola Mobility discussion LTE\_NR\_MUSIM-Core

Email discussions ([230])

* [AT116bis-e][230][MUSIM] Paging collision handling (China Telecom)

 Scope: Discuss 1) LTE paging offset calculation: How is the LTE paging collision avoidance specified in 36.304? 2) Is there a need to specify the AS-NAS interaction for UE assistant information in EPS 3) Is there are issue with SI change aspects for paging collision?

 Intended outcome: Discussion summary in [R2-2201705](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201705.zip).

 Deadline: Deadline 3

Web Conf (2nd week Tuesday) (1)

[R2-2201705](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201705.zip) Summary of [AT116bis-e][230][MUSIM] Paging collision handling (China Telecom) China Telecom discussion Rel-17 LTE\_NR\_MUSIM-Core Late

*Proposal 1 (14/20): Re-defining a formula as alternative IMSI = (IMSI + Accepted IMSI Offset) in 36.304. The proposed text is as below:*

*If an Accepted IMSI Offset is forwarded by upper layers, UE shall use the IMSI Offset value and IMSI to calculate an alternative IMSI value as IMSI + Accepted IMSI Offset.*

*Proposal 2: RAN2 send LS to SA2 notifying them of RAN2 decision on re-defining the formula for alternative IMSI calculation.*

*Proposal 3 (16/20): RAN2 update 36.304 running CR to add the text as below:*

*Upon receiving the indication to erase any IMSI Offset value from upper layers, the UE shall set the IMSI Offset value to 0.*

*Proposal 4: (17/20) RAN2 do not define AS-NAS interaction on when and how UE indicate paging collision.*

*Proposal 5: (18/20) RAN2 do not introduce extra mechanisms for PO collision on SI change indication reception or ETWS/CMAS receptions.*

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

Including discussion on MUSIM gaps that are not discussed as part of the common measurement gap agenda, e.g. remaining details for periodic/aperiodic gaps, how the gaps are released (via explicit signalling as implicit release is not supported), whether UE is allowed to update UAI after cell reselection in NW B or handover in NW A,

Including Stage-3 details of "configured time" (e.g. how to configure UE to always wait for network response)

Including discussion on AS and NAS solution interactions and paging filtering

By Web Conf (1st week Friday) (2)

[R2-2200489](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200489.zip) Configuration of MUSIM Gaps Qualcomm Incorporated discussion

* Only P2 is discussed (together with [231] outcome)

Amount of (periodic) gap patterns

*Proposal 2: More than two periodic gap patterns should be supported, at least for the case when only legacy gap durations are used. More than two periodic gaps can be an optional UE capability.*

[R2-2200950](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200950.zip) Discussion on RAN4 Reply LS on MUSIM gaps Samsung R&D Institute India discussion

* Only P3 is discussed (together with [231] outcome)

*Proposal 3: RAN2 to discuss the support of more than three gaps for MUSIM purpose in R17.*

*Proposal 5: Leave to the UE implementation if a certain MUSIM gap overlaps with other MUSIM gap(s) or existing measurement gap(s).*

[R2-2201633](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201633.zip) Measurement Gaps pen issues Rakuten Mobile, Inc discussion Rel-17

By Email ([231], [232]) (35)

[R2-2200803](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200803.zip) Remaining open issues on MUSIM Switching vivo other Rel-17 LTE\_NR\_MUSIM-Core

*Switching procedure without leaving RRC\_CONNECTED*

*Observation 1: The si-WindowLength for receiving other SIBs at Network B may exceed the longest MGL of the existing gap pattern (i.e.20ms)*

*Observation 2: For aperiodic (one-shot) switching with both transmission and reception at network B but will not enter RRC-connected state in Network B, the duration is likely no more than the longest MGL of existing gap pattern(i.e.20ms).*

*Observation 3: Signalling in current running CR can be extended easily to support more periodic and aperiodic gaps for MUSIM.*

Gap patterns

*Proposal 1: Introduce new measurement gap patterns with MGRP equal to IDLE/INACTIVE paging DRX cycles for MUSIM.*

*Proposal 2: Periodic gap (legacy gap pattern) is applied for MIB/SIB receiving in MUSIM.*

*Proposal 3: UE uses existing gap patterns to receive other SIBs on network B with best effort.*

*Proposal 4: The existing aperiodic gap pattern can be configured for aperiodic (one-shot) switching. gap length is 20ms.*

*Proposal 5: No extra work is needed to allow signalling supports more periodic and aperiodic gaps for MUSIM.*

Gap signalling

*Proposal 6: In the gap assistance information, UE provides gap repetition and offset for periodic gaps，and provides start SFN and subframe for aperiodic gaps.*

*Proposal 7: Adopt the list with ToAddModList/ToReleaseList for the scheduling gap configuration*

*Proposal 8: Each MUSIM gap configured by network A is associated with an index, to support modification or release of gaps*

Gap assistance information

*Proposal 9: If the UEAssistanceInformation does not include a field for aperiodic or periodic gap preference, it indicates no preference for the corresponding field for aperiodic or periodic gap.*

*Proposal 10: To release a configured gap for MUSIM, the UE can send a UEAssistanceInformation without the preference information related to the configured gap to be released.*

*Proposal 11: UE is allowed to update MUSIM UAI message. But UE is not allowed to resend the previous MUSIM UAI message in the same serving cell even the previous one is not responded by the network.*

*Proposal 12: UE is allowed to resend the previous MUSIM UAI message in the target cell after handover, which message was sent before handover within 1 second.*

*Proposal 13: No prohibit timer is used for switching notification message sending.*

*Switching procedure with leaving RRC\_CONNECTED*

Configured time

*Proposal 14: Switching notification for leaving RRC\_CONNECTED state and without leaving RRC\_CONNECTED state can be enabled separately.*

*Proposal 15: the configuration of “configured time” is optional. If the “configured time” is configured, UE is allowed to report the preference of leaving RRC\_CONNECTED state.*

*Proposal 16: Do not configure UE to always wait for the network response (e.g. “infinite” is not defined for configured time)*

*Proposal 17: The range of the “configured time” is {20,40,60,80,100 } ms*

*Proposal 18: There is no need to define the interaction between RRC-level connection release procedure and NAS-level connection release procedure. It is up to the UE implementation to determine NAS-level Connection Release or RRC-level connection release when both are supported.*

NW switching without leaving RRC\_CONNECTED (e.g. gap details):

[R2-2200230](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200230.zip) Remaining Details for Periodic and Aperiodic Gaps OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200572](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200572.zip) Remaining issues on scheduling gap for network switching NEC discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200490](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200490.zip) Further details of network switching for Multi-SIM Qualcomm Incorporated discussion

[R2-2200631](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200631.zip) UE indication on switching Spreadtrum Communications discussion Rel-17

[R2-2200359](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200359.zip) Remaining open issues on network switching for MUSIM Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200671](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200671.zip) On remaining issues for MUSIM Gap configuration Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2200211](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200211.zip) Remaining issues on network switching for MUSIM Samsung Electronics Co., Ltd discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200754](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200754.zip) Remaining issues for switching notification and busy indication Lenovo, Motorola Mobility discussion Rel-17

[R2-2200920](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200920.zip) Remaining issues for NW switching without leaving RRC\_CONNECTED Huawei, HiSilicon discussion Rel-17

[R2-2201201](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201201.zip) MUSIM Signaling aspects for Scheduling gap handling Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2201215](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201215.zip) Release of MUSIM Gap Sharp discussion

[R2-2201233](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201233.zip) Further Consideration on the Scheduling Gap ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2201369](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201369.zip) Remaining issues for MUSIM gap configuration LG Electronics France discussion Rel-17

[R2-2201481](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201481.zip) Remaining Issues for MUSIM Network Switching Charter Communications, Inc discussion

[R2-2201482](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201482.zip) Discussion on switchover procedure without leaving RRC\_CONNECTED state Ericsson discussion

NW switching with leaving RRC\_CONNECTED (e.g. configured time details):

[R2-2201316](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201316.zip) Further details on network switching notification MediaTek Inc. discussion R2-2111222

[R2-2200672](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200672.zip) On remaining issues for switching notification for leaving RRC connection Nokia, Nokia Shanghai Bells discussion Rel-17

[R2-2200231](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200231.zip) Remaining Details on MUSIM Assistance Information for Leaving Case OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200737](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200737.zip) Configured time for network switching ASUSTeK discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200904](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200904.zip) Remaining issues for NW switching with leaving RRC\_CONNECTED Huawei, HiSilicon discussion Rel-17

[R2-2201216](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201216.zip) RRC Connection release request procedure for MUSIM and power saving Sharp discussion

[R2-2201228](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201228.zip) Remain issues for network switching with leaving RRC\_CONNECTED SHARP Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2201234](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201234.zip) Consideration on the Switching with Leaving Connected State ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2201483](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201483.zip) Discussion on switchover procedure for leaving RRC\_CONNECTED state Ericsson discussion

[R2-2200522](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200522.zip) Remaining issues of Network switching for MUSIM China Telecom discussion Rel-17 LTE\_NR\_MUSIM-Core

*(moved from 8.3.2)*

AS and NAS solution interactions (e.g. paging filtering, need for a new resume cause, maintaining RRC\_CONNECTED state, etc.)

[R2-2201576](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201576.zip) Paging filtering when AS-based leaving LG Electronics discussion Rel-17 LTE\_NR\_MUSIM-Core R2-2111022

[R2-2200736](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200736.zip) Interaction between NAS and AS for network switching ASUSTeK discussion Rel-17 LTE\_NR\_MUSIM-Core R2-2111001

[R2-2201577](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201577.zip) Considerations on Busy Indication LG Electronics discussion Rel-17 LTE\_NR\_MUSIM-Core

*Proposal 1. The network ensures that SIM leaving procedure must be initiated without additional DL data after the reception of a NAS level busy indication.*

*Proposal 2. NAS level busy indication procedure can be performed by AS scheduling gap.*

[R2-2201315](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201315.zip) Signalling design on busy indication procedure DENSO CORPORATION discussion LTE\_NR\_MUSIM-Core R2-2111186

*Proposal 1: Add a new cause value for resumeCause of RRCResumeRequest to indicate the purpose of the connection is sending busy indication.*

[R2-2200632](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200632.zip) Busy indication transmission Spreadtrum Communications discussion Rel-17

*Proposal 1: At least RRC\_INACTIVE UE shall indicate busy via SDT procedure.*

Email discussions ([231], [232])

* [AT116bis-e][231][MUSIM] MUSIM gap details (vivo)

 Scope: Discuss the details of MUSIM gaps for the NW switching when UE does NOT leave RRC connection: 1) is there a need to define new MGL or MGRP for MUSIM purposes, or are the existing MGL/MGRP sufficient? 2) how to define the details of gap signalling (UE assistance + NW configuration) 3) are there any urgent RAN2 actions needed based on the RAN4 LS [R2-2200132](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200132.zip) (e.g. reply LS)

 Intended outcome: Discussion summary in [R2-2201706](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201706.zip).

 Deadline: Deadline 2

* [AT116bis-e][232][MUSIM] MUSIM configured time for leaving RRC connection (MediaTek)

 Scope: Discuss the details of NW switching when UE leaves RRC connection: configured time configuration (configured values, what is UE behaviour if the timer is not configured, etc.

 Intended outcome: Discussion summary in [R2-2201707](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201707.zip).

 Deadline: Deadline 3

By Web Conf (1st week Friday) (1)

[R2-2201706](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201706.zip) Summary of [AT116bis-e][231][MUSIM] MUSIM gap details (vivo) vivo discussion Rel-17 LTE\_NR\_MUSIM-Core Late

* 1: From RAN2 perspective, at least the following MGL/MGRP values are applicable for MUSIM periodic gap:
* MGL: 1.5ms, 3ms, 3.5ms, 4ms, 5.5ms, 6ms, 10ms, 20ms
* MGRP: 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms.
* Can add additional MGL/MGRP if RAN4 indicates other values are needed

P1

- Nokia wonders if we need to revisit this if RAN4 tells us so? Qualcomm has the same question.

* 2: From RAN2 perspective, at least the following MGL values are applicable for MUSIM aperiodic gap.
* MGL: 1.5ms, 3ms, 3.5ms, 4ms, 5.5ms, 6ms, 10ms, 20ms
* Can add additional MGL/MGRP if RAN4 indicates other values are needed

P2:

- ZTE thinks RAN4 agreed to support 20ms, other values are FFS. They only discussed 6 and 20ms. Wonders if we need to discuss <6ms values.

- Huawei wonders what if RAN4 doesn't indicate anything else? Chair thinks we are contribution-driven and it's up to companies who want something else.

Proposal 3: keep three gaps agreement (i.e., 2 periodic gaps and 1 aperiodic gap) for MUSIM, can discuss if more RAN4 inputs are valid.

P3:

- QC explains that with P1/P2, we can't address all the scenarios we agreed. PO reception requires 2 gaps since SSB and PO may be further apart than 20ms. Another gap is needed for inter-frequency measurements. Can make it optional for UEs to support >2 periodic gaps. Apple agrees but thinks we can ask RAN4 if 3 gaps helps. Samsung also thinks there is inefficiency but can accept retaining current agreement.

- Huawei thinks this can be left up to UE implementation. LGE agrees. OPPO thinks periodic gaps can work with low efficiency.

- Huawei thinks there is no necessity to have >3 gaps based on RAN4 LS so we shouldn't change the agreement.

- Nokia thinks gaps are needed for each scenario independently. They didn't say 2 gaps are sufficient. Agrees with QC that this creates inefficiency for both UE and NW scheduling.

- MTK thinks we can keep the original agreement. Thinks having too many gaps can create problems for NW A if we have constant gaps. LGE, ZTE and Ericsson agrees.

- vivo thinks RAN4 LS indicates low efficiency. Can send LS to RAN4 to indicate we can do more if RAN4 thinks that would help. Huawei thinks companies can contribute to RAN4.

- QC thinks we can ask RAN4 but we shouldn't create arbitrary restraints.

* 3: keep three gaps agreement (i.e., 2 periodic gaps and 1 aperiodic gap) for now. Ask to RAN4 to clarify if one additional periodic gap can be possible without sacrificing NW A performance (exact LS wording for the question can be discussed offline).
* 4: In the gap assistance information, UE provides gap repetition period and offset for periodic gaps, and (optionally) provides start SFN and subframe for the aperiodic gap.
* 10: NW configures start SFN and subframe for the aperiodic gap.
* 7: UE is allowed to initiate a UAI message with MUSIM preference in the target cell after handover, if the UE has sent UAI during the last 1 second.

- For P4: Nokia thinks start SFN/subframe can be optional. Intel has a similar view. Ericsson can agree with this. Samsung wonders if this impacts periodic gaps? Nokia clarifies this is only for aperiodic gaps.

- For P8/P9: Intel wonders if this impacts the other thread. Ericsson thinks P9 is also similar. MTK agrees.

* Stage-3 details for gap configuration (e.g AddModReleaseList, gap id, gap modification) are postponed for now (pending the general MG discussion). Can consider P8/P9 as starting point from MUSIM perspective.

*Proposal 8: [17/20] Adopt the list with ToAddModList/ToReleaseList in RRCReconfiguration for the scheduling gap configuration*

*Proposal 9: [15/19] Introduce gap ID in RRCReconfiguration message for MUSIM to identify each configured gap, and support modification or release of gaps via gap ID.*

* 11: Send LS to RAN4 on gap related agreements (Offline 233, vivo).

*Proposal 5: Further discuss and down-select between the following alternatives:*

*- Alt 1: If the UEAssistanceInformation does not include a field for aperiodic or periodic gap preference, it indicates no preference for the corresponding field for aperiodic or periodic gap.*

*- Alt 2: Each MUSIM gap configured by network A is associated with an index, UE can indicate which MUSIM gap should be released by including the corresponding MUSIM gap index into UEAssistanceInformation Message.*

- OPPO thinks this was already covered by P8/P9 and we can focus on P6. MTK thinks this is something we haven't discussed in general discussion. Prefers alt1.

- QC thinks gap id can be more efficient. vivo thinks MG enhancement agreed to use gap id. MTK confirms "gap id" was agreed for concurrent gaps but it's not clear how this works. But this is about UL assistance information, not DL configuration. Thinks alt1 is about how absence of preference is indicated. Ericsson agrees and this is how we use it elsewhere.

Alt2

- OPPO thinks gap ID can be used in DL, so why not use it in UL as well? Apple agrees and thinks signalling is more efficient. Nokia agrees and thinks overriding is less efficient. vivo thinks alt2 is more flexible.

Concerns on P5/Alt1: China Telecom, LGE, Nokia, OPPO, Apple, DENSO

Concerns on P5/Alt2: Huawei, Ericsson, Intel, MediaTek, ZTE, NEC, Lenovo, Samsung

* FFS on UAI details (alt1 or alt2). Companies are requested to provide corresponding Stage-3 CRs to next meeting.

*Proposal 6: Further discuss and down-select between the following alternatives regarding UAI update for MUSIM gap preference:*

*- Alt 1: UE is allowed to send a UAI message with different MUSIM preference from the one sent previously whenever necessary.*

*- Alt 1bis: Do not introduce a prohibit timer with a reasonable value for MUSIM UAI.*

*- Alt 2: Introduce a prohibit timer with a reasonable value for MUSIM UAI.*

- OPPO thinks alt1 can just say we do not introduce prohibit timer. Intel thinks prohibit timer can make working with MUSIM difficult and NW B events may be unsynchronous. NW can always disallow UAI for UE. QC, Apple, Nokia, Charter and Lenovo agree.

- LGE thinks we should follow legacy and use alt2. Samsung and Huawei agree. Huawei thinks UAI update can be allowed at e.g. NW B reselection. Ericsson thinks NW A needs to have some control. Can be up to NW control which value to use.

* NW is allowed to configure prohibit timer for MUSIM UAI, but it has to be allowed to be set to zero (i.e. no prohibit timer). FFS what is the maximum value (should be reasonable)

Email discussions ([233])

* [AT116bis-e][233][DCCA] LS to RAN4 on RAN2 agreements for MUSIM gaps (vivo)

 Scope: Indicate RAN2 agreements on MUSIM gaps to RAN4 (according to online decisions).

 Intended outcome: Approved LS in [R2-2201717](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201717.zip).

 Deadline: EOM

By Email [233] (1)

[R2-2201717](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201717.zip) LS on RAN2 agreements for MUSIM gaps RAN2 LS out Rel-17 LTE\_NR\_MUSIM-Core To:RAN4

By Web Conf (2nd Week Tuesday) (1)

[R2-2201707](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201707.zip) Summary of [AT116bis-e][232][MUSIM] MUSIM configured time for leaving RRC connection (MediaTek) MediaTek discussion Rel-17 LTE\_NR\_MUSIM-Core Late

### 8.3.4 Paging with service indication

This agenda item may be deprioritized in this meeting.

Including remaining details of the paging cause value support and if additional feedback to SA2/CT1 is needed (if any)

### 8.3.5 UE capabilities and other aspects

This agenda item may use a summary document (decision to be made based on submitted tdocs).

Including discussion on UE capabilities related to RAN2-defined features for MUSIM, e.g. capabilities for periodic/aperiodic gaps and capability bit for UE leaving RRC\_CONNECTED state.

Including discussion on any other essential aspects of MUSIM that need to be resolved during Rel-17.

If changes are proposed against the baseline endorsed in previous meeting, the proposals should illustrate the differences to the baseline illustrated in R2-2109625.

By Web Conf (1st Week Friday) (2)

[R2-2200360](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200360.zip) Remaining issues on UE and network capabilities for MUSIM Intel Corporation discussion Rel-17 LTE\_NR\_MUSIM-Core

*Proposal#1: Two capability bits are introduced, one for support gaps and another for “leaving connected”. There is no need for different capability bits for periodic and aperiodic gaps.*

*Proposal#2: Confirm that the MUSIM related capability is per UE (without FRx and xDD differentiation).*

- Huawei and Samsung suppports both P1 and P2. LGE supports P1. ZTE thinks we only need one capability (for with and without leaving gaps). Samsung thinks the procedures are different so we need to allow UE to choose which to implement. Ericsson agrees.

- QC thinks FRx differentiation is allowed. Intel clarifies that then UE would not send UAI for the gaps. Samsung explains that MUSIM MG is per UE, so FRx differentiation is not needed.

* 1: Two capability bits are introduced, one for support gaps and another for “leaving connected”. There is no need for different capability bits for periodic and aperiodic gaps.
* 2: Confirm that the MUSIM related capability is per UE (without FRx and xDD differentiation).

By Web Conf (2nd Week Tuesday) (1)

[R2-2201203](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201203.zip) Additional issues related to MUSIM - Aspects of MUSIM RRC Band Conflict, Processing Delay and Caller ID retrieval requirements Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

*Observation 1: Based on UL and DL bands in which the MUSIM UE operates in RRC IDLE/INACTIVE/CONNECTED modes, there are scenarios in which both Dual-Rx/Single-Tx and Dual-Rx/Dual-Rx mode of operation are impaired due to RF band conflict across the MUSIM instances.*

*Observation 2: Autonomous MUSIM UE based solution to mitigate band conflict would result in sub-optimal and non-standard behaviour.*

*Observation 3: Current LTE and NR RRC Processing Delay Requirements are meant for single SIM cases, wherein only one RRC procedure is expected to run at any given instance of time.*

*Observation 4: MUSIM UEs can have an ongoing RRC procedure pre-empted due to a concurrent MUSIM use case, and this might result in very tight RRC processing deadline.*

*Observation 5: In Dual Rx/Single Tx MUSIM UE, initial Connected state configuration on the second SIM instance to retrieve the caller ID can impact the ongoing Connected state configuration on the first SIM instance.*

*Observation 6: In Dual Rx/Single Tx MUSIM UE, it is important to signal to the first MUSIM instance about graceful RRC Connection Release while the user accepts the incoming MT call on the second MUSIM instance, to avoid radio resource wastage.*

*Proposal 1: RAN2 to consider such Band conflict scenarios for MUSIM to arrive at a graceful specification-based solution intended to mitigate such conflicts.*

*Proposal 2: Clarify in LTE and RRC specifications for Release-17 that the existing RRC Processing Delay requirements is applicable only for UE operating in Single-SIM mode and is NOT applicable for RRC procedures for UE’s operating in MUSIM mode of operation.*

*Proposal 3: RAN2 to further study the RRC Processing Delay Requirements for MUSIM UEs based on the solutions agreed for the other MUSIM WI objective (Paging Collision, Network Switching, Busy Indication etc.)*

*Proposal 4: RAN2 to consider the problem statements for MUSIM UEs related to caller ID identification and optimal signalling to ensure faster RRC Connection Release with the intent to avoid radio resource wastage.*

[R2-2201484](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201484.zip) UE capabilities for Multi-USIM Ericsson discussion

[R2-2200210](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200210.zip) UE capabilities and other essential aspects for MUSIM Samsung Electronics Co., Ltd discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200232](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200232.zip) UE Capabilities for MUSIM OPPO discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200695](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200695.zip) UE capability for MUSIM gaps Qualcomm Incorporated discussion

[R2-2200804](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200804.zip) Multi-USIM related UE capabilities vivo discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2200838](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200838.zip) Further discussion on UE capabilities for MUSIM operation Nokia Italy discussion Rel-17

[R2-2200921](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200921.zip) Discussion on UE capability for MUSIM Huawei, HiSilicon discussion Rel-17 LTE\_NR\_MUSIM-Core R2-2110543

[R2-2201202](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201202.zip) MUSIM UE capability aspects Apple discussion Rel-17 LTE\_NR\_MUSIM-Core

[R2-2201235](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201235.zip) Consideration on the UE Capability for the MUSIM ZTE Corporation, Sanechips discussion Rel-17 LTE\_NR\_MUSIM-Core

## 8.8 RAN slicing

(NR\_Slice -Core; leading WG: RAN2; REL-17; WID: RP-212534)

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 2 threads

Contributions should illustrate the Stage-3 details of the proposals (e.g. in an Annex containing TP against the running CRs).

### 8.8.1 Organizational

Including LSs, any rapporteur inputs and results of running CR email discussions [243]-[245]

Including rapporteur input on remaining open issues needed to close the WI.

Web Conf (2nd week Monday) (1)

Rapporteur input on remaining open issues needed to close the WI:

[R2-2200055](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200055.zip) List of open issues for RAN slicing WI CMCC discussion Rel-17 NR\_slice-Core

*1.1 List of RRC open issues (as captured in the RRC running CR [1])*

*Issue Relevant section in TS 38.331 Rapporteur’s suggestions on how to address*

*FFS if RA-prioritization will be different for 2-step and 4-step RACH 6.3.1 Discuss based on company contributions.*

*Whether to introduce a T320-like timer for slice-based cell reselection priorities in dedicated signalling, and if needed, there are two options:*

*Option 1: introduce a new T320-like timer which is independent from the current T320 timer.*

*Option 2: re-use the current T320 timer. 5.3.8.3 Discuss based on proposals from [Post116-e][243][Slicing] email discussion (R2-2111443). And company contributions with additional details are also invited.*

*FFS in which SIB to broadcast slice info for the purpose of inter-frequency reselection, SIB4 or new SIB. 6.3.1 Discuss based on company contributions.*

*Whether to support dedicated RACH resources and RACH prioritization parameters in dedicated signalling. 6.2.2 Discuss based on company contributions.*

*1.2 List of MAC open issues (as captured in the MAC running CR [2])*

*Issue Relevant section in TS 38.321 Rapporteur’s suggestions on how to address*

*FFS on the impact of RA fallback from 2-step Slicing RA to 4-step Slicing RA or 4-step common RA. 5.1.3a, 5.1.4a, 5.1.5 To be updated to align with common RACH decision.Discuss based on company contributions.*

*The names, ra-PrioritizationForSlicing, ra-PrioritizationForSlicingTwoStep, enableRA-PrioritizationForSlicing, ra-Prioritization, RACH-ConfigCommon and RACH-ConfigCommonTwoStepRA for Slicing should be aligned with RRC spec 5.1.1a To be updated by CR rapporteur to align with RRC CR.*

*1.3 List of 38.304 open issues (as captured in the 38.304 running CR [3])*

*Issue Source or Relevant section in TS 38.304 Rapporteur’s suggestions on how to address*

*The granularities of the slice groups for cell reselection are per TA. FFS on the details (e.g., how to resolve TA boundaries). Chairman notes Discuss based on company contributions.*

*UE behaviour for sliced-based priority re-selection:*

*A. Solution 4, all NAS-prioritised slices with frequency priorities as well as legacy frequency priorities are considered, without iteration*

*B. Solution 4, original (UE first uses the frequency priorities of the highest priority slice, and if no cell is found, it will use the priorities of other slices in priority order, and at last it will use legacy priorities)*

*C. Solution 4, only highest prio slice considered, then legacy priorities considered Email discussion [Post116-e][242][Slicing] Discuss based on proposals from [Post116-e][242][Slicing] email discussion (*[*R2-2200043*](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200043.zip)*). However company contributions with additional details are invited.*

*In case prioritised slice is not supported in the highest ranked cell on the target frequency, the UE uses legacy frequency priority for that frequency, until another cell on the target frequency becomes highest ranked cell on the target frequency. Email discussion [Post116-e][242][Slicing] Discuss based on proposals from [Post116-e][242][Slicing] email discussion (*[*R2-2200043*](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200043.zip)*). However company contributions with additional details are invited.*

*Whether additional exit condition needed for fallback to legacy cell reselection. Email discussion [Post116-e][242][Slicing] Proposed in comments of email discussion and can be discussed based on company contributions.*

*After the UE fallbacks to legacy cell reselection, the next trigger of slice-based cell reselection. Email discussion [Post116-e][242][Slicing] Proposed in comments of email discussion and can be discussed based on company contributions.*

*If the UE is configured with slice based dedicated priority, but the UE cannot find a suitable cell, whether and how to fallback to legacy cell reselection. Email discussion [Post116-e][242][Slicing] Proposed in comments of email discussion and can be discussed based on company contributions.*

*Whether the inter-RAT frequency should be considered in slice-based cell reselection. Email discussion [Post116-e][242][Slicing] Proposed in comments of email discussion and can be discussed based on company contributions.*

*Whether to recalculate frequency priority if the highest priority slice is not supported in highest ranked cell. Email discussion [Post116-e][242][Slicing] Proposed in comments of email discussion and can be discussed based on company contributions.*

*The definition of slice group is FFS. 3.1 CR rapporteur to update based on RAN2 agreements or SA2 further agreements.*

*Slice specific cell reselection parameters. 5.2.4.7.0 CR rapporteurs to update aligned with RRC spec.*

*FFS whether the UE should select another slice group and perform cell reselection with the priorities of that slice group if no suitable cell supporting the selected slice group is found (i.e., keep or remove step 7 in solution 4). 5.2.4.X Discuss based on company contributions.*

*1.4 List of 38.300 open issues (as captured in the stage-2 running CR [4])*

*Issue Relevant section in TS 38.300 Rapporteur’s suggestions on how to address*

*Details of slice grouping and how it is provided to the UE are FFS, depends on SA2 16.3.3, 16.3.X CR rapporteur to update based on RAN2 agreements or SA2 further agreements.*

* Noted

By Email [200] (4)

Results of running CR email discussions [243]-[245]

Email discussion [243]:

[R2-2200972](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200972.zip) Report of [Post116-e][243][Slicing] Running NR RRC CR for RAN slicing (Huawei) Huawei discussion Rel-17 NR\_slice-Core

* [200] Noted

[R2-2200973](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200973.zip) Running NR RRC CR for RAN slicing Huawei, HiSilicon draftCR Rel-17 38.331 16.7.0 B NR\_slice-Core

* [200] Endorsed (as running CR)

Email discussion [244]:

* [200] The running Stage-2 CR (for 38.300) was endorsed in RAN2#116e in [R2-2111400](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116-e/Docs/R2-2111400.zip)

Email discussion [245]:

[R2-2201536](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201536.zip) 38.321 running CR for RAN Slicing OPPO draftCR Rel-17 38.321 16.7.0 B NR\_slice-Core

* [200] Endorsed (as running CR)

Withdrawn:

[R2-2200844](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200844.zip) Open issues list for RAN Slicing CMCC discussion Rel-17 FS\_NR\_slice Withdrawn

### 8.8.2 Cell reselection

Including discussion on finalization of the "slice group" for cell reselection, in which SIB the slicing information for reselection is broadcast and how the serving cell priority is handled in reselection process

Including discussion on whether additional mechanisms beyond solution 4 are needed

Including discussion on how to resolve slice groups at TA boundaries e.g. if the TAs support different slice groups, what are the RAN2 impacts?

Including outcome of [Post116-e][242][Slicing] Slice-based cell re-selection algorithm (Ericsson)

Web Conf (2nd week Monday) (1+3)

Outcome of [Post116-e][242][Slicing] Slice-based cell re-selection algorithm (Ericsson)

[R2-2200043](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200043.zip) [Post116-e][242][Slicing] Slice-based cell re-selection algorithm Ericsson discussion

*Proposal 2 Both Existing TP (TP in Annex A) and alternative TP (TP in Annex B) have issues and can be enhanced, based on company contributions. Should resolve the issues and comments raised by companies in this email discussion (in 2.2.2 and 2.2.3).*

* Resolve identified issues in the selected approach raised by companies in this email discussion (in 2.2.2 and 2.2.3).

*Proposal 1 RAN2 to further discuss and agree on UE behaviour for sliced-based priority re-selection*

*A. Solution 4, all NAS-prioritised slices with frequency priorities as well as legacy frequency priorities are consisdered, without iteration*

- Huawei thinks the formula mentions "slice priority", which should be explicit value. But we don't have agreement on this so this is not clear. So this requires a value to be defined for slice priority. Lenovo thinks the solution was not complete even if some simplifications have been done. Error case handling is still not clear, e.g. what happens if UE selects cell but doesn't find slice there? And once UE cannot camp on one frequency, it will not come back. This means that if the highest-priority slice is not availalbe, UE will not come back even if next-highest priority slice would be available. Samsung agrees with Lenovo and Huawei but thinks the formula is the biggest obstacle. If that can be solved, this could be acceptable. OPPO and QC agree. OPPO thinks slice availability check may not be needed. Xiaomi thinks Solution A can be considered without formula, and the priorities decided without iteration is only used for measurement.

- Ericsson explains that all frequencies can be considered in the same way with this approach. This aligns with legacy. There is a corner-case when considered cell doesn't support he slice, but this is there for all cases. Intel and Nokia agrees.

*B. Solution 4, original (UE first uses the frequency priorities of the highest priority slice, and if no cell is found, it will use the priorities of other slices in priority order, and at last it will use legacy priorities)*

- Ericsson thinks the iteration-based approach is a problem. When UE is required to fallback to legacy reselection, it cannot consider slice-baswed reselection anymore and it's not clear when that happens. Intel thinks the modelling completely replaces existing cell reselection and we would need to integrate it to legacy procedures. Should not re-implement everything and it needs to be clear when UE uses legacy or slice-specific procedure. Nokia agrees.

- Samsung thinks this solution can increase the delay, so UE may not meet RAN4 requirements. UE cannot identifty whether a cell is suitable based on single measurement but needs multiple ones. OPPO also has concern on latency and power caused by iteration.

- QC has concern on latency and power caused by iteration. And RAN2 should finalize stage 2 issue in this meeting. ZTE has concerns with iteration and thinks it doesn't really help.

- Apple thinks there is a way to remove iteration by having a "pool" of frequencies that it measures first.

- Lenovo has some proposals hoew to resolve the issues and thinks they can be accomplished. Thinks that iterations need not lead to poor performance as long as UE measures carriers properly. If serving cell indicates which cell provides which slices, UE can trust that.

*C. Solution 4, only highest prio slice considered, then legacy priorities considered*

- Lenovo thinks this solution does not justify the WI efforts and doesn't provide good performance. It doesn't really allow slice-specific reselection. BT, Xiaomi and LGE agree. BT thinks that if operator puts all slices with priority 1, the delay is big. Intel thinks that this may not be complicated to specify but it's not clear it works well.

- NEC thinks C is a compromise between A and B. This is not necessarily highest priority but highest one NW indicates.

- Nokia thinks that if no suitable cell is found, UE falls back to legacy. This means UE does any cell selection so thinks the fallback doesn't work.

Who would object to

A (with formula): 9 (QC, Apple, OPPO, Xiaomi, CATT, Lenovo, Huawei, Samsung, Spreadtrum)

**A (without formula, i.e. specific slice priority value used in evaluation): -**

B (resolving issues with existing procedures): 5 (Nokia, NEC, Ericsson, MediaTek, Samsung)

C (compromise between A and B): 9 (BT, LGE, Lenovo, KDDI, Xiaomi, Intel, Ericsson, Apple, CMCC)

- Ericsson is not sure A without formula may not give the same benefits and is not clear what it means. Samsung thinks it is possible and had a proposal: Some parts can be left to UE implementation and we just specify the rules: First slice priority, then frequency priority. Ercisson thinks the formula helped to get understanding on what UE does.

* Working assumption: We go with proposal A without formula, e.g. as proposed by Samsung or Apple. Exact details to be worked out for the next meeting.

*The following proposal is assumed to apply at least if the slice-based mechanism is specified using the alternative TP (TP in Annex B):*

*Proposal 3 In case prioritised slice is not supported in the highest ranked cell on the target frequency, the UE uses legacy frequency priority for that frequency, until another cell on the target frequency becomes highest ranked cell on the target frequency*

Running CR for 38.304:

[R2-2200044](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200044.zip) Running 38.304 CR for RAN slicing Ericsson draftCR Rel-17 38.304 16.7.0 B NR\_slice-Core

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[R2-2200407](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200407.zip) RAN Slicing CR to 38.304 Lenovo, Motorola Mobility CR Rel-17 38.304 16.7.0 0225 - B NR\_slice-Core

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[R2-2200948](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200948.zip) Text Proposals for the draft 38.304 PCR Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_slice-Core

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* Final approach to be discussed online.

[R2-2201169](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201169.zip) On slice-based cell re-selection TP for 38.304 Ericsson discussion Rel-17 NR\_slice-Core

[R2-2201418](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201418.zip) TP for system information and slice based reselection priority handling ZTE corporation, Sanechips discussion Rel-17 NR\_slice-Core

[R2-2201422](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201422.zip) On selection of Solution 4 Option A, B and C Samsung R&D Institute UK discussion

[R2-2201110](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201110.zip) Text proposal for slice based cell reselection under NW control Apple discussion DUMMY

Not treated (time ran out)

[R2-2200179](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200179.zip) Remaining issues on slice specific cell reselection Qualcomm Incorporated discussion NR\_SL\_relay-Core

* Focus on P3,8-11 (independent of CR approach)
* Depending on the chosen CR approach, discuss P4/5 ("original" approach) or P6/7/13 ("alternative" approach) may also be discussed

Inter-RAT slice priorities

*Proposal 3: Clarify that slice specific frequency priority values are not assigned to inter-RAT frequencies*

PCI list in slicing assistance

*Proposal 8: As assistance information, an optional PCI list is introduced to indicate the cells supporting one slice group in a new SIB. And if NW don’t provide such info on the best ranked cell, the UE may skip the checking on slice support in best ranked cell.*

*Proposal 9: If Proposal 8 is agreed, further signaling optimization on slice support information is not pursued.*

Spec changes to criteria-S and criteria-R:

*Proposal 10: RAN2 confirm no spec change on criteria-S calculation is required in slice specific cell reselection*

*Proposal 11: To ensure UE doesn't lose coverage due to slice prioritization, no spec change is required on criteria-R calculation (i.e., supported slice info is not considered in intra-frequency cell reselection)*

Proposals related to the "original" CR approach ("iterative" text):

*Proposal 4: Clarify that condition “If the highest ranked cell is suitable (as defined in 38.304)” in Step 5 means that highest ranked cell needs to satisfy both the definition of “suitable” specified in clause 4.5 of TS 38.304 and inter-frequency cell reselection criteria specified in clause 5.2.4.5 of TS 38.304.*

*Proposal 5: After slice specific frequency priority is changed (e.g., the UE camps in a new cell, slice specific frequency priority in SIB is changed, or gNB sends a new slice specific frequency priority via RRC release), it performs slice specific cell reselection from highest priority slice when inter-frequency cell reselection is triggered*

Proposals related to the "alternative" CR approach (from Ericsson):

*Proposal 6: For the alternative TP on slice specific cell reselection, remove the formular and not explicitly couple slice specific frequency priority with SlicePriority.*

*Proposal 7: For the alternative TP on slice specific cell reselection, add one condition for the UE to apply sliceFrequencyPriority again: when sliceFrequencyPriority is changed (e.g., the UE camps in a new cell, or sliceFrequencyPriority is changed in SIB, or gNB send new sliceFrequencyPriority via RRC release).*

*Proposal 13: RAN2 adopt the alternative TP removing the formula as suggest below:*

*““For frequencies with a slice specific frequency priority for at least one slice in the slice list, the SliceBasedReselectionPriority is the slice priority frequency of the highest prioritized slice supported by the UE on the frequency ~~calculated by the formula:~~*

*~~SliceBasedReselectionPriority = SlicePriority \* MaxReselectionPriorityValue + SliceReselectionPriority,~~*

*~~where SlicePriority is the priority of the highest prioritized slice for which the UE have received SliceSpecificFrequencyPriority on the frequency. MaxReselectionPriorityValue is a constant which is higher than the maximum reselection priority, and SliceReselectionPriority is the SliceSpecificReselectionPriority of the highest prioritized slice on the frequency.”~~”*

[R2-2200845](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200845.zip) Discussion on open issues for slice based cell reselection CMCC discussion Rel-17 FS\_NR\_slice

* Focus on P7,10, 11 and 14

*Proposal 7: In the slice-based cell reselection, if the highest ranked cell is not suitable or does not support the selected slice, the UE shall not consider this cell and other cells on the same frequency as candidates for cell reselection until highest ranked cell on the target frequency changes, or until the next iteration is triggered.*

*Proposal 10: There is no impacts on specs that when the UE cannot find a suitable cell if the UE is configured with slice based dedicated priority.*

*Proposal 11: The inter-RAT frequency should not be considered in slice-based cell reselection.*

*Proposal 14: Option 5 can be supported, especially when slice group priority or frequency priority for each slice group is not provided or different slice groups share the same priority.*

By Email [240] (23)

Remaining details for slice-based cell reselection, including how to resolve slice groups at TA boundaries e.g. if the TAs support different slice groups?

[R2-2200406](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200406.zip) Optimizations for signalling Slice Information Lenovo, Motorola Mobility discussion NR\_slice-Core

[R2-2200417](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200417.zip) Analysis on issues of slice groups at TA boundaries CATT discussion Rel-17 NR\_slice-Core

[R2-2200949](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200949.zip) Cell reselection delay for option B and option C Samsung R&D Institute India discussion

[R2-2200408](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200408.zip) Triggers for initiating RAN slicing based cell reselections Lenovo, Motorola Mobility discussion NR\_slice-Core

[R2-2200409](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200409.zip) Principles of Slice based reselection Lenovo, Motorola Mobility discussion NR\_slice-Core

[R2-2200416](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200416.zip) Discussion on Slice based Cell Reselection CATT discussion Rel-17 NR\_slice-Core

[R2-2200510](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200510.zip) Further considerations of slice based cell reselection Intel Corporation discussion Rel-17 NR\_slice-Core

[R2-2200636](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200636.zip) Consideration on slice based cell reselection Spreadtrum Communications discussion Rel-17

[R2-2200929](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200929.zip) Consideration on slice-specific cell reselection OPPO discussion Rel-17 NR\_slice-Core

[R2-2200974](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200974.zip) Discussion on slice based cell reselection under network control Huawei, HiSilicon discussion Rel-17 NR\_slice-Core

[R2-2201005](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201005.zip) Leftover issues in slice based cell reselection ZTE corporation, Sanechips discussion Rel-17 NR\_slice-Core

[R2-2200947](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200947.zip) Considerations on slice groups Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_slice-Core

[R2-2201190](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201190.zip) Slice-Info provision NEC Telecom MODUS Ltd. discussion

[R2-2201192](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201192.zip) Slice-based cell re-selection TP for solution 4C NEC Telecom MODUS Ltd. discussion

[R2-2201200](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201200.zip) Slice information provided by RRCRelease Sharp discussion Rel-17 R2-2110912

[R2-2201208](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201208.zip) Discussion on signalling slice information LG Electronics UK discussion Rel-17

[R2-2201209](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201209.zip) Discussion on slice based cell reselection LG Electronics UK discussion Rel-17

[R2-2201389](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201389.zip) A couple of FFS for Cell Reselection Kyocera discussion R2-2110274

[R2-2201410](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201410.zip) Resolving the common issues in slice based cell reselection Beijing Xiaomi Software Tech discussion Rel-17

[R2-2201443](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201443.zip) Remaining Issues on Slice Information Samsung R&D Institute UK discussion

[R2-2201406](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201406.zip) Discussion on Slice Aware UL BSR RadiSys, Reliance JIO discussion Rel-17 NR\_slice-Core Late

*(moved from 8.8.1)*

Email discussions ([240])

* [AT116bis-e][240][Slicing] Remaining details for slice groups (CMCC)

 Scope: Discuss the slice group aspects: 1) discuss what should be the definition of slice group (based on latest RAN2 and SA2 agreements)? 2) how to resolve the TA boundary aspects? 3) does UE select different slice group if no cell supporting that slice group is available?

 Intended outcome: Discussion summary in [R2-2201708](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201708.zip).

 Deadline: Deadline 3

Web Conf (2nd week Monday) (1)

[R2-2201708](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201708.zip) Summary of [AT116bis-e][240][Slicing] Remaining details for Slice groups (CMCC) CMCC discussion Rel-17 NR\_slice-Core Late

Open issue 1: Definition of slice grouping

*(15/22) Proposal 1.1: The following definition for slice group is taken as baseline:*

*Slice group: A group which is associated with one or multiple slices. And a slice is associated to none or one slice group.*

*Proposal 1.2: The working assumption is that the maximum of slice group is 16. FFS whether it is to be updated.*

- Nokia thinks P1.1 is problematic because slice-specific RA and cell reselection may be different. Does not want to tie them together. Ericsson agrees. Intel thinks the second sentence is from UE perspective. Lenovo thinks we can clarify this. Nokia explains that if UE is camping on a cell, NW can still provide single slice group per slice. So it's not possible to provide different groups for RACH and reselection. Samsung explains we already agreed to this last time.

* No change to previous agreement that there can be different slice groups for RACH and reselection. Align with SA2 (if they tell us differently).

Open Issue 2: TA boundary

*Proposal 2.1: Among multiple TAs in the same RA, RAN2’s understanding is that, the configuration on slice grouping should be homogeneous.*

*Proposal 2.2: For purpose of UE checking supported slices on the highest ranked cell at TA/RA boundary, gNB can provide in SIB the slice group that supported by these neighbour cells.*

*FFS the slice group is mapped by the mapping relationship in current RA or not.*

*FFS PCI list and/or TAC per slice group are provided.*

*FFS what is the UE behaviour if gNB doesn’t provide supported slice group info on the best ranked cell.*

*Observation 1: Regarding to how to handle the case if the gNB doesn’t support the slice group mapping for the slice of the neighbouring cell, it is out of RAN2 scope and can be left to RAN3 and SA2.*

- Apple supports 2.1 but not 2.2. Nokia has fundamental problem with 2.1: RA is UE-specific, but slice groups are not UE-specific. Thinks this doesn't work. Intel clarifies 2.1 is what we agreed before: Everything is homogeneous within TA. This means NW can only configure RAs that have the same slices. Lenovo, Apple, Xiaomi and Huawei agrees. Nokia thinks RA needs to support all the slices for UE.

* 2.1: Among multiple TAs in the same RA, RAN2’s understanding is that the configuration on slice grouping should be homogeneous.

- Apple thinks that this means slice group granularity needs to be clarified: Is it per PLMN or RA? CMCC clarifies this assumes UE has knowledge of which slices are supported in neighbouring cells and RA. Serving cell needs to tell this to UE. Apple thinks this is about slice groups and not just slicing. Intyel clarifies NW needs to ensure two adjacent RAs do not have conflicting slice mapping. OPPO thinks UE only use slice mapping of current TA until TAU. A serving cell can provide slice support of neighbour cells.

- Apple and Nokia have concerns how adjacent RA work. Nokias thinks RAN doesn't know about RA. thinks this is about SA2 issue.

* 2.2: RAN2 assumes that for purpose of UE checking supported slices on the highest ranked cell at TA/RA boundary, gNB can provide in SIB the slice group that supported by these neighbour cells. If this conflicts with SA2, RAN2 will align with SA2.

FFS if the slice group is mapped by the mapping relationship in current RA or not.

FFS PCI list and/or TAC per slice group are provided.

FFS what is the UE behaviour if gNB doesn’t provide supported slice group info on the best ranked cell.

Open issue 3: Consider low priority slice or not

*Proposal 3: RAN2 to discuss whether the lower priority is considered:*

*– (13/22) Option A: Low priority slice should also be considered.*

*- (8/22) Option A1: Low priority slice is considered with iteration.*

*- (7/22) Option A2: Low priority slice is considered, but without iteration.*

*– (11/22) Option B: Only highest priority slice considered, then legacy priorities considered.*

### 8.8.3 RACH

Including discussion on RAN slicing-specific RACH prioritization impacts that are not discussed as part of the common RACH prioritization agenda (if any)

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.

This agenda item may be deprioritized in this meeting.

Not treated (time ran out) (1)

[R2-2200846](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200846.zip) Discussion on open issues for slice based RACH configuration CMCC discussion Rel-17 FS\_NR\_slice

*Proposal 1: RA-prioritization can be configured independently for 2-step and 4-step slice-based RACH.*

*Proposal 2: The dedicated slice-based RACH resources can be configured in dedicated RRC signalling.*

[R2-2201050](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201050.zip) Detailed RRC signalling for RACH prioritization configuration Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_slice-Core

[R2-2201170](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201170.zip) RACH for RAN slicing enhancement Ericsson discussion Rel-17 NR\_slice-Core

[R2-2200930](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200930.zip) Consideration on slice-specific RACH OPPO discussion Rel-17 NR\_slice-Core

[R2-2200180](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200180.zip) Remaining issues on slice specific RACH Qualcomm Incorporated discussion NR\_SL\_relay-Core

[R2-2200975](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200975.zip) Discussion on slice based RACH configuration Huawei, HiSilicon discussion Rel-17 NR\_slice-Core

[R2-2201111](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201111.zip) Slice based RACH configuration Apple discussion DUMMY

[R2-2201409](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201409.zip) Considerations on remaining issues for slice based RACH Beijing Xiaomi Software Tech discussion Rel-17

[R2-2201417](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201417.zip) Further consideration on slice specific RACH ZTE corporation, Sanechips discussion Rel-17 NR\_slice-Core

[R2-2201475](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201475.zip) Remaining issues on slice based RACH prioritization LG Electronics Inc. discussion Rel-17 NR\_slice-Core

### 8.8.4 UE capabilities

This agenda item may use a summary document.

Including discussion on UE capabilities related to RAN2-defined features for RAN slicing. If changes are proposed against the baseline endorsed in previous meeting, the proposals should illustrate the differences to the baseline illustrated in R2-2109627.

Not treated (time ran out) (1)

[R2-2200511](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200511.zip) UE capability for Slicing enhancement Intel Corporation discussion Rel-17 NR\_slice-Core

*Proposal#3: RAN2 confirm that there is no need for explicit capability to inform network since slice based RACH is only applicable for UE in RRC IDLE and RRC INACTIVE and should just be specified as “Optional without UE capability” as follow under Section 5.4 Other features: "Slice based random access: It is optional for UE to support slice based random access as specified in TS 38.321 [8]. UE that supporting slice based random access supports the following features: 1) slice based RACH resource partitioning 2) slice based RACH parameters prioritization"*

*Proposal#1: RAN2 confirms that UE indicates its support of slice based cell reselection in the UE capability signalling with the following TS38.306 description for the case slice information is provided in the RRC Release: " sliceInfoforCellReselection-r17: Indicates whether the UE supports sliceInformation on RRCRelease for slice based cell reselection in RRC \_IDLE and RRC INACTIVE as defined in TS 38.304 [21]"*

*Proposal#2: For the case slice information is provided in the SIB, it is optional for the UE to support and there is no need for UE capability signalling since it is for UE in RRC IDLE and RRC INACTIVE. It should just be specified as “Optional without UE capability” as follow under Section 5.4 Other features: " Slice based cell reselection using SIB: It is optional for UE to support slice based cell reselection using sliceInformation in the SIB as specified in TS 38.304 [21]."*

[R2-2200181](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200181.zip) Further discussion on UE capability related to RAN slicing enhancement Qualcomm Incorporated discussion NR\_SL\_relay-Core

[R2-2200418](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200418.zip) Analysis on UE capability for RAN slicing enhancement CATT discussion Rel-17 NR\_slice-Core

[R2-2200697](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200697.zip) Considerations on UE capability for RAN slicing Beijing Xiaomi Software Tech discussion Rel-17

[R2-2200847](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200847.zip) Discussion on UE capability for RAN slicing enhancement CMCC discussion Rel-17 FS\_NR\_slice

[R2-2200931](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200931.zip) Consideration on UE capability for Slicing OPPO discussion Rel-17 NR\_slice-Core

[R2-2200976](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200976.zip) Discussion on UE capabilities for RAN slicing Huawei, HiSilicon discussion Rel-17 NR\_slice-Core

[R2-2201171](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201171.zip) UE Capabilities for Slice- based Cell re-selection Ericsson 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-212637)

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

Including LSs, any rapporteur inputs and results of running CR email discussions [217] and [218]

Including input running Stage-2 CR from the specification rapporteur (which does not count against the Tdoc limits)

Including rapporteur input on remaining open issues needed to close the WI.

By Email [200] (1)

LS on MAC CE contents (for all Rel-17 WIs):

[R2-2200081](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200081.zip) LS on Rel-17 MAC-CE impacts (R1-2112842; contact: Nokia) RAN1 LS in Rel-17 NR\_feMIMO, NR\_ext\_to\_71GHz, NR\_IIOT\_URLLC\_enh, NR\_NTN\_solutions, NR\_pos\_enh, NR\_redcap, NR\_UE\_pow\_sav\_enh, NR\_cov\_enh, NR\_IAB\_enh, NR\_SL\_enh, NR\_MBS, NR\_DSS, LTE\_NR\_DC\_enh2, LTE\_NBIOT\_eMTC\_NTN, NB\_IOTenh4\_LTE\_eMTC6, LTE\_terr\_bcast\_bands\_part1 To:RAN2 Cc:RAN4

* [200] Noted (no MAC CE requested by RAN1 for this WI)

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

LS on initial access details:

[R2-2200076](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200076.zip) LS on initial access for 60 GHz (R1-2112805; contact: Intel) RAN1 LS in Rel-17 NR\_ext\_to\_71GHz To:RAN2

- Intel thinks we need to reply to RAN1.

* Noted (to be taken into account in running CRs, can send LS reply based on RAN2 decisions)
* [Post116bis-e][212][71 GHz] LS to RAN1 on RAN2 agreements on 71 GHz (Intel)

 Scope: Indicate (relevant) RAN2 agreements on 71 GHz to RAN1.

 Intended outcome: Approved LS

 Deadline: Short

LS on RA/MSGB-RNTI details:

[R2-2200078](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200078.zip) LS on RA-RNTI and MSGB-RNTI for 480 and 960 kHz (R1-2112832; contact: Intel) RAN1 LS in Rel-17 NR\_ext\_to\_71GHz To:RAN2

* Noted (to be discussed online)

Web Conf (1st week Friday) (1)

Stage-2 CR draft:

[R2-2200720](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200720.zip) Running Stage-2 CR for Extending NR operation to 71GHz Qualcomm Incorporated draftCR Rel-17 38.300 16.8.0 B NR\_ext\_to\_71GHz-Core

- Huawei wonders how we address RAN1-led WIs for Stage-2? QC indicates that RAN1 doesn't often provide Stage-2 CRs so RAN2 can also progress and check with RAN1.

* RAN2 should remind RAN1 to provide Stage-2 input for RAN1-led WIs.
* To be updated in [R2-2201716](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201716.zip) (no changes in this version)

Web Conf (2nd week Tuesday) (1)

[R2-2201716](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201716.zip) Running Stage-2 CR for Extending NR operation to 71GHz Qualcomm Incorporated draftCR Rel-17 38.300 16.8.0 B NR\_ext\_to\_71GHz-Core [R2-2200720](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200720.zip)

By Email [200] (2+1)

Results of running CR email discussions [217] and [218]:

Email discussion [217]:

[R2-2200017](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200017.zip) Running CR to 38306 for NR operation for up to 71G Intel Corporation draftCR Rel-17 38.306 16.7.0 B NR\_ext\_to\_71GHz-Core

* [200] Endorsed (as running CR)

[R2-2200018](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200018.zip) Running CR to 38331 on UE capability for 71G Intel Corporation draftCR Rel-17 38.331 16.7.0 B NR\_ext\_to\_71GHz-Core

* [200] Endorsed (as running CR)

Email discussion [218]:

[R2-2200006](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200006.zip) Extending NR operation to 71 GHz Ericsson draftCR Rel-17 38.331 16.7.0 NR\_ext\_to\_71GHz

*(moved from 8.20.2)*

* [200] Endorsed (as running CR)

Web Conf (1st week Friday) (1)

List of open issues for FR2-2 (including RRC CR issues):

[R2-2200718](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200718.zip) List of issues for completion of FR2-2 Work (Rapporteur Input) Qualcomm Incorporated discussion

*Proposal 1: Introduce the Rel-17 parameters provided in RAN1 LS (*[*R2-2200095*](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200095.zip)*) for NR\_ext\_to\_71GHz-Core in the running RRC CR with the following guidelines:*

*• Use “FFS” (or a similar name suggested by 38.331 rapporteur) if the value ranges have FFS.*

*• If there is an FFS for the location of an IE, RAN2 to wait for further RAN1 agreement.*

*• If there are several options for the signaling of the IE and this is left to RAN2, discuss via email to agree on the signaling.*

*Proposal 2: Update the following IEs, and others if needed, to include the new SCS and larger bandwidth sizes required by FR2-2:*

*• Add new slot durations to maxPUSCH-Duration for LCP*

*• Add higher BW sizes to ReducedAggregatedBandwidth and SupportedBandwidth*

*Proposal 3: RAN2 to discuss the impact of directional LBT and LBT mode change on consistent LBT failure detection/recovery and CG HARQ retransmissions.*

*Proposal 4: RAN2 assumes no changes to MAC CEs due to FR2-2 PHY design, unless notified differently by RAN1 later.*

*Proposal 5: RAN2 to confirm and implement RAN1#107 agreement for RA-RNTI and MSGB-RNTI calculation.*

*Proposal 6: RAN2 to discuss whether the “spare” bit in MIB can be used to signal QCT assumptions for SSB and respond to RAN1 LS accordingly.*

*Proposal 7: RAN2 to discuss the interaction of FR2-2 with upper layer features introduced by other Rel-17 WIs.*

* 7: RAN2 to discuss (starting in the next meeting) the interaction of FR2-2 with upper layer features introduced by other Rel-17 WIs.

By Email [210] (1)

[R2-2200940](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200940.zip) Open issue list of RRC CR for 71 GHz Ericsson (rapporteur) discussion Rel-17 NR\_ext\_to\_71GHz-Core

### 8.20.2 General

Including discussion on UP aspects based on RAN1 progress (e.g. RLC RTT, RACH, L2 buffer sizes)

Including discussion on latest L1 parameters from RAN1 that were not yet accounted for in the running CR discussions

Including discussion on RRC and MAC impacts not yet covered in the running CR discussions

Including further discussion on UE capability aspects based on latest information from RAN1/4 and previous RAN2 meeting (e.g. FR2-1/2 differentiation, whether to use per-band signalling for FR2-2-specific capabilities, whether L2 buffer requires additional capabilities etc.)

Including discussion on whether any existing features require modifications due to FR2-2 (e.g. IDC, LBT)

Web Conf (1st week Friday) (1)

RA-/MSGB-RNTI calculation:

[R2-2200480](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200480.zip) Discussion about RAN2 impacts of Ext 52-71GHz Huawei, HiSilicon discussion Rel-17 NR\_ext\_to\_71GHz-Core

* Revised in [R2-2201682](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201682.zip)

[R2-2201682](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201682.zip) Discussion about RAN2 impacts of Ext 52-71GHz Huawei, HiSilicon discussion Rel-17 NR\_ext\_to\_71GHz-Core

* Only P1 discussed

*Proposal 1: The interpretation of t\_id in the formula for RA-RNTI/MsgB-RNTI calculation is to be updated as shown in Table 1 and Table 2.*

- LGE supports P1.

* 1: The interpretation of t\_id in the formula for RA-RNTI/MsgB-RNTI calculation is to be updated as shown in Table 1 and Table 2 of [R2-2201682](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201682.zip).

[R2-2201015](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201015.zip) On the issues of RA-RNTI and Initial Access OPPO discussion Rel-17

[R2-2200885](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200885.zip) RA-RNTI Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ext\_to\_71GHz-Core

RRC/MAC details for 71 GHz:

By Email [210] (1)

[R2-2200942](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200942.zip) Remaining RRC aspects Ericsson discussion Rel-17 NR\_ext\_to\_71GHz-Core

*Proposal 1 Define a new MIB including a new BCCH-BCH-Message for FR2-2.*

*Proposal 2 RAN2 to adopt the proposed LS response for the LS R1-2112805.*

*Proposal 3 No restriction for pdsch-TimeDomainAllocationListForMultiPDSCH needs to be captured in the RRC.*

*Proposal 4 The new PDSCH-TimeDomainResourceAllocation-r17 IE can be configured with either PDSCH repetition or multiple PDSCH.*

*Proposal 5 Introduce the field pdsch-TimeDomainAllocationListDCI-1-2-r17 and the field pdsch-TimeDomainAllocationList-r17 so that PDSCH repetitions can be used with the new k0 value range.*

*Proposal 6 Introduce the field pusch-TimeDomainAllocationListDCI-1-2-r17 and the field pusch-TimeDomainAllocationList-r17 so that PUSCH repetition can be used with the new k2 value range.*

*Proposal 7 Same as in R16, pusch-TimeDomainAllocationListForMultiPUSCH-r17 can be configured with up to 16 list elements.*

*Proposal 8 If multiple PUSCHs are configured per PDCCH, k2(n) corresponding to k2 of the n-th PUSCH, n>1, the value k2(n) is set to k2(n-1)+1.*

*Proposal 9 Use the new IE UL-AccessConfigListDCI-1-1-r17 which contains only list elements that would actually be used.*

*Proposal 10 Use the new IE UL-AccessConfigListDCI-0-1-r17 which contains only list elements that would actually be used.*

*Proposal 11 Define the value range for the field channelAccessMode2 as ENUMERATED {enabled, disabled}.*

[R2-2200733](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200733.zip) Discussion on UAI enhancement for operation in FR2-2 Samsung discussion Rel-17 NR\_ext\_to\_71GHz-Core

*Proposal 1: RAN2 to introduce new fields (i.e., MaxBW-Preference-r17 and MaxMIMO-LayerPreference-r17) in UAI for FR2x differentiation of the power saving parameters and consider the below TP as baseline.*

*Proposal 2: RAN2 to introduce new fields (i.e., MinSchedulingOffsetPreference-v17xy) in UAI to support the report of higher preferred K0/K2 values also for 480/960 kHz SCS as shown in the below TP.*

*Proposal 3: RAN2 to have discussion on the introduction of the new field (e.g. OverheatingAssistance-r17) in UAI to support the FR2x differentiation of the overheating parameters in UAI.*

[R2-2200884](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200884.zip) Initial access aspects Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2200461](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200461.zip) UP and CP impact on NR operation for upto 71GHz Intel Corporation discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2201033](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201033.zip) Consideration on RRC and MAC running CR ZTE corporation, Sanechips discussion

*(moved from 8.20)*

[R2-2200941](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200941.zip) Remaining protocol aspects Ericsson discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2201284](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201284.zip) Remaining issues for Ext 71GHz vivo Mobile Com. (Chongqing) discussion Rel-17 NR\_ext\_to\_71GHz-Core

By Email [211] (5)

LBT aspects for 71 GHz:

[R2-2201425](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201425.zip) Discussion on LBT impact based on RAN1 conclusions LG Electronics Inc. discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2201032](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201032.zip) Consideration on LBT impact ZTE corporation, Sanechips discussion

*(moved from 8.20)*

[R2-2200274](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200274.zip) Consideration on support of directional LBT Xiaomi discussion Rel-17

[R2-2201014](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201014.zip) Impacts of directional LBT on MAC procedure OPPO discussion Rel-17

[R2-2200706](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200706.zip) Discussion on potential LBT impacts Lenovo, Motorola Mobility discussion Rel-17 NR\_ext\_to\_71GHz-Core

Web Conf (1st week Friday) (1)

UE capability aspects for 71 GHz (per-band signalling, L2 buffer size):

[R2-2200460](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200460.zip) Remaining UE capability issues on NR operation for upto 71GHz Intel Corporation discussion Rel-17 NR\_ext\_to\_71GHz-Core

*Proposal#1: If RAN2 decides to go with per band signalling for per UE capabilities that requires either FRx diff or xDD diff in the main session, RAN2 should inform RAN1 & RAN4 of the decision.*

*Proposal#2: if RAN2 decides to keep the per UE capability signalling with FRx diff or xDD diff, for new Rel-17 UE capability that required further FR2-1 and FR2-2 differentiation, a new IE specifically for FR2-2 (xxParametersFR2-2) is included in the existing per UE IE (XXParameters) as shown in [1], where xx/XX can be mac-/MAC-, phy-/PHY-, measAndMob/MeasAndMob, ims-/IMS- and powSav-/PowSav- associated with per UE capabilities.*

* P1 and P2 are postponed for now (pending 8.0.2 discussion)
* 3: RAN2 confirm the baseline RLC RTT values for 480kHz and 960kHz to be 20ms. There is no need to further discuss this in RAN2.

[R2-2200481](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200481.zip) Discussion about UE capabilities of Ext 52-71GHz Huawei, HiSilicon discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2200732](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200732.zip) Discussion on L2 buffer size Samsung discussion Rel-17 NR\_ext\_to\_71GHz-Core

[R2-2201424](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201424.zip) Discussion on RAN1 LS and L2 buffer size LG Electronics Inc. discussion Rel-17 NR\_ext\_to\_71GHz-Core

Email discussions ([210], [211])

* [AT116bis-e][210][71 GHz] RRC aspects of CR for 71 GHz (Qualcomm)

 Scope: Update running RRC CR for 71 GHz based: 1) how to handle MIB with 71 GHz (e.g. use spare bit, define new MIB, modify existing fields)? 2) are new values needed for some fields (e.g. time offsets needed for various fields)? 3) is there some input from RAN1 that needs to be added to the RRC running CR?

 Intended outcome: Discussion summary in [R2-2201710](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201710.zip).

 Deadline: Deadline 3

* [AT116bis-e][211][71 GHz] LBT aspects for 71 GHz (Lenovo)

 Scope: Discuss the impact of directional LBT and LBT mode change on consistent LBT failure detection/recovery and CG HARQ retransmissions (e.g. does consistent LBT failure procedure involve directional LBT result?)

 Intended outcome: Discussion summary in [R2-2201709](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201709.zip).

 Deadline: Deadline 2

Web Conf (1st week Friday) (1)

[R2-2201709](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201709.zip) Summary of [AT116bis-e][211][71 GHz] LBT aspects for 71 GHz (Lenovo) Lenovo discussion Rel-17 NR\_ext\_to\_71GHz-Core Late

P1-3:

- CATT has concern on P2: Earlier RAN1 agreements need to be considered. If LBT failure occures in Msg1/A, some changes may be needed. Lenovo thinks this is not related to this discussion. We should keep this in mind and we can consider any RAN1 agreements anyway.

- Huawei would like to clarify that for P3, only directional LBT decision can impact this.

* 1: Following two general options can be considered for LBT failure counting and indication (from PHY to MAC) for the case of independent per-beam LBT sensing.
* o Option 1: LBT failures are counted and indicated to MAC independently per beam
* o Option 2: LBT failures are counted and indicated to MAC per UL transmission, i.e. no beam indication included
* 2: For Option 2, i.e. LBT failures are counted and indicated to MAC per UL transmission, current Rel-16 LBT procedures can be baseline (i.e. no changes to the LBT failure detection and recovery procedure unless needed)
* 3: For Option 1, i.e. LBT failures are counted and indicated to MAC independently per beam, further changes/enhancements to the Rel-16 LBT procedures are required, i.e. LBT failure detection and recovery procedure.

P6-8:

- Ericsson thinks that for P6, RAN2 needs to discuss if we need to differentiate licensed operation and "no-LBT".

- LGE thinks we can remove FFS from P8. Apple agrees.

* 6: “no-LBT mode” is already implicitly supported by Rel-16 specifications. FFS if additional differentiation from licensed operation in specification is required for some cases.
* 7: cg-RetransmissionTimer is optional for operation in the shared spectrum in FR2-2.
* 8: RAN2 assumes that no protocol changes are required in order to support LBT mode change.

P4-5:

*Proposal 4 (9/14): RAN2 sees only limited benefits if MAC layer is aware of directional LBT results, i.e. per-beam LBT failure indication from PHY to MAC. Therefore, from RAN2 point of view there is no need that PHY provides per-beam LBT failure indications to MAC in Rel-17.*

*Proposal 5 (7/14): Assuming Proposal 4 is agreed, there is no need to send LS to RAN1.*

- Lenovo thinks RAN2 should have clear benefits in MAC or we cannot do it with the given time. Nokia, Huawei, QC, OPPO, Ericsson and Samsung agrees.

- Apple thinks our earlier decisions already imply these unless RAN1 requests them. Lenovo thinks that RAN1 will send LS to RAN2 on this, asking for benefits so we should have an opinion.

- LGE thinks "limited benefits" may not be correct. It's more about the time available.

- OPPO thinks the first sentence can be just removed. Xiaomi and QC agree.

- LGE thinks the first part can be included in the LS.

* 4: From RAN2 point of view there is no need that PHY provides per-beam LBT failure indications to MAC in Rel-17. No need to send LS to RAN1 unless they request RAN2 view.

Web Conf (1st week Friday) (1)

Web Conf (2nd week Monday) (1)

[R2-2201710](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201710.zip) Summary of [AT116bis-e][210][71 GHz] RRC aspects of CR for 71 GHz (Qualcomm) Qualcomm discussion Rel-17 NR\_ext\_to\_71GHz-Core Late

* Only A1-A3 discussed in this session

*Proposal A1: RAN2 does not agree to using the spare bit in MIB for the signaling of FR2-2 QCL assumptions for SSB. Respond to RAN1 LS accordingly.*

*Proposal A2: As a baseline, the legacy MIB is also used for FR2-2.*

*Proposal A3: In RAN2 reply LS to RAN1, do not include any suggestions for changing the QCL assumptions for FR2-2.*

- **[Friday session]** Ericsson thinks we should wait.

- **[Monday session]** Ericsson is fine with A1. Is OK to use legacy A2 with different wording.

* A1: RAN2 does not agree to using the spare bit in MIB for the signaling of FR2-2 QCL assumptions for SSB. Respond to RAN1 LS accordingly.
* A2: The legacy MIB is used for FR2-2 (i.e. we do not define new MIB for FR2-2).
* A3: Up to RAN1 how to resolve QCL configuration (no suggestions from RAN2). This need not be included in LS to RAN1.

Web Conf (2nd week Tuesday) (1)

*Proposal A4: channelAccessMode2 is signaled as ENUMERATED {enabled}. This implies that the UE can not distinguish between licensed spectrum and shared spectrum without LBT.*

*Proposal B1: Add text with the new SCS values in the field description of the parameters listed in Table 1 in* [*R2-2201033*](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201033.zip)

*Proposal C1: The parameter enableTimeDomainHARQ-BundlingType1-r17 is introduced in ServingCellConfig with the value “ENUMERATED {enabled}”. FFS if the name can be shortened.*

*Proposal C2: maxNrofMultiplePDSCHs-r17 is defined in pdsch-TimeDomainAllocationListForMultiPDSCH-r17 with the value 8.*

*Proposal C3: No restrictions are captured in RRC for pdsch-TimeDomainAllocationListForMultiPDSCH.*

*Proposal C4: The following are agreed for signaling of PDSCH TDRA:*

*• The new PDSCH-TimeDomainResourceAllocation-r17 IE can be configured with either PDSCH repetition or multiple PDSCH.*

*• Introduce the field pdsch-TimeDomainAllocationListDCI-1-2-r17 and the field pdsch-TimeDomainAllocationList-r17 so that PDSCH repetitions can be used with the new k0 value range.*

*Proposal C5: Introduce the field pusch-TimeDomainAllocationListDCI-1-2-r17 and the field pusch-TimeDomainAllocationList-r17 so that PUSCH repetition can be used with the new k2 value range.*

*Proposal C6: The IE pusch-TimeDomainAllocationListForMultiPUSCH-r17 is configured with up to 16 list elements.*

*Proposal C7: Discuss whether k2(n) should always be signaled vs the alternative proposal “If k2(n) is absent, k2(n) corresponding to k2 of the n-th PUSCH, n>1, the value k2(n) should be set to k2(n-1)+1”.*

*Proposal C8: New Rel-17 IEs for UL-AccessConfigListDCI-0-1 and UL-AccessConfigListDCI-1-1 are introduced. This does not follow the RAN1 agreement to re-use Rel-16 versions and thus may need to be confirmed by RAN1.*

*Proposal D1: A new parameter ra-ResponseWindow-r17 with the value ENUMERATED {sl240, sl320, sl640, sl960, sl1280, sl1920, sl2560} is introduced for 4-step RACH for operation in FR2-2 shared spectrum.*

*Proposal D2: A new parameter msgB-ResponseWindow-r17 with the value ENUMERATED {sl640, sl960, sl1280, sl1920, sl2560} is introduced for 2-step RACH for operation in FR2-2.*

*Proposal E1: New values, e.g. 0.0313ms, 0.0156ms, 0.01ms, are added to maxPUSCH-Duration for FR2-2.*

*Proposal E2: New values are added to IEs in UAI power saving and overheating parameters to reflect the new SCS, K0/K2, and bandwidth sizes for FR2-2.*

*Proposal E3: cg-RetransmissionTimer is optionally configured for operation in FR2-2 shared spectrum.*

*Proposal E4: New periodicity and offset values corresponding to the existing absolute periodicity and offset are introduced for Configured Grant in FR2-2.*

*Proposal E5: New periodicity and offset values corresponding to the existing absolute periodicity and offset are introduced for Scheduling Request in FR2-2.*

*Proposal E6: New periodicity values corresponding to the existing absolute periodicities are introduced for SPS in FR2-2.*

*Proposal E7: Secondary DRX group is supported for FR1/FR2-2 CA. FFS if any new texts in the specifications are necessary.*

*Proposal E8: Do not change the RAN2#116 agreement “to keep the current DRX timer values for now, but it can be revisited for performance optimization after high priority issues are resolved”.*

## 9.0 EUTRA Rel-17 General

Tdoc Limitation: 0 tdocs

No documents should be submitted to 9.0. Please submit to 9.0.x

### 9.0.1 L1 parameters and cross-WI RRC aspects

Including RRC details on L1 parameters for Rel-17 WIs that require discussion in the common session or are related to multiple Rel-17 WIs.

This Agenda item will not be treated and no input is expected.

### 9.0.2 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.

This Agenda item will not be treated and no input is expected.

[R2-2200090](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200090.zip) LS on updated Rel-17 RAN1 UE features list for LTE (R1-2112901; contact: NTT DOCOMO, AT&T) RAN1 LS in Rel-17 NB\_IOTenh4\_LTE\_eMTC6, LTE\_NBIOT\_eMTC\_NTN, LTE\_terr\_bcast\_bands\_part1, NR\_SL\_enh To:RAN2 Cc:RAN4

* [200] Rapporteur companies for LTE Rel-17 WIs are requested to provide RRC CRs corresponding to these changes to RAN2#117e
* Noted

## 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: 2 threads

This agenda item may be deprioritized in this meeting.

For TEI17, ONLY incoming LSes and tdocs related to replying to the LSs.

LTE UPIP (for EN-DC):

[R2-2200153](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200153.zip) LS on LTE User Plane Integrity Protection (S3-214462; contact: Vodafone) SA3 LS in Rel-17 UPIP\_SEC\_LTE To:RAN2, RAN3 Cc:SA, RAN

* [200] Discussion on this topic will be handled in RAN2#117e
* [200] Noted

[R2-2201621](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201621.zip) Proposal to respond to SA3 LS S3-214462 ([R2-2200153](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200153.zip)) on LTE User Plane Integrity Protection VODAFONE Group Plc discussion Rel-17

[R2-2201525](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201525.zip) Discussion on LTE User Plane Integrity Protection (SA3 LS) Huawei, HiSilicon discussion Rel-17 UPIP\_SEC\_LTE

* [200] Postponed (to be treated in RAN2#117e)
* [200] Companies are requested to check the UPIP inputs to this meeting when preparing contributions to the next meeting.

[R2-2201513](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201513.zip) Draft CR to TS 36.331 to support UP IP for EPC connected architectures using NR PDCP Huawei, HiSilicon, Vodafone draftCR Rel-17 36.331 16.7.0 UPIP\_SEC\_LTE

[R2-2201514](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201514.zip) Draft CR to TS 38.331 to support UP IP for EPC connected architectures using NR PDCP Huawei, HiSilicon, Vodafone draftCR Rel-17 38.331 16.7.0 UPIP\_SEC\_LTE

[R2-2201515](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201515.zip) Draft CR to TS 36.300 to support UP IP for EPC connected architectures using NR PDCP Huawei, HiSilicon, Vodafone draftCR Rel-17 36.300 16.7.0 UPIP\_SEC\_LTE

[R2-2201516](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201516.zip) Draft CR to TS 37.340 to support UP IP for EPC connected architectures using NR PDCP Huawei, HiSilicon, Vodafone draftCR Rel-17 37.340 16.8.0 UPIP\_SEC\_LTE

[R2-2201517](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2201517.zip) Draft CR to TS 38.323 to support UP IP for EPC connected architectures using NR PDCP Huawei, HiSilicon, Vodafone draftCR Rel-17 38.323 16.6.0 UPIP\_SEC\_LTE

* [200] Postponed (to be treated in RAN2#117e)

LTE-based 5G broadcast:

[R2-2200209](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200209.zip) Introduction of new bands and bandwidth allocation for LTE-based 5G terrestrial broadcast Qualcomm Incorporated CR Rel-17 36.331 16.7.0 4750 - B LTE\_terr\_bcast\_bands\_part1-Core

* [200] Postponed (to be treated in RAN2#117e)

Height information reporting for MDT (TEI17, discussed in RAN2#116e):

[R2-2200368](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200368.zip) On introducing height information reporting in MDT reports KDDI Corporation, Ericsson draftCR Rel-17 36.331 16.7.0 B TEI17

[R2-2200370](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200370.zip) On introducing height information reporting in MDT reports KDDI Corporation, Ericsson draftCR Rel-17 37.320 16.7.0 B TEI17

[R2-2200371](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200371.zip) On introducing height information reporting in MDT reports KDDI Corporation, Ericsson draftCR Rel-17 36.306 16.7.0 TEI17

* [200] Postponed (to be treated in RAN2#117e)

## 9.4 NR and EUTRA Inclusive language

Time budget: N/A

RAN coordinator for inclusive language is Gino Masini (Ericsson).

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.

Including any updates to the RAN2-endorsed inclusive language CRs ( e.g. for inter-group consistency, inter-group review etc)

This Agenda item will not be treated and no input is expected.

[R2-2200159](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116bis-e/Docs/R2-2200159.zip) Reply LS on Inclusive language for ANR (S5-216197; contact: Huawei) SA5 LS in Rel-17 TEI17 To:RAN2 Cc:RAN3, RAN, SA

* [200] Noted (SA5 aligns with RAN2 terminology, so no additional RAN2 actions are expected)
* [200] RAN2 specification rapporteurs are requested to provide inclusive language CRs for approval in RAN2#117e

# Summary

**Agreed CRs ()**

**Endorsed documents ()**

**Postponed documents ()**

**Approved LS out ()**

**Post-meeting email discussions (short) ()**

* [Post116bis-e][212][71 GHz] LS to RAN1 on RAN2 agreements on 71 GHz (Intel)

 Scope: Indicate (relevant) RAN2 agreements on 71 GHz to RAN1.

 Intended outcome: Approved LS

 Deadline: Short

**Post-meeting email discussions (short, running CRs) ()**

**Post-meeting email discussions (long, running CRs) ()**

**Post-meeting email discussions (long) ()**