3GPP TSG-RAN WG2 Meeting #125bis DRAFT\_R2-2403736

Changsha, China, April 15th – 19th, 2024

Source: Session chair (Huawei)

Title: Report from session on R18 MBS, R18 QoE and R19 XR

## 2.4 Instructions

Rel-17 maintenance CRs

* Only essential/critical corrections are expected
* Editorial and clarification corrections should be sent to be reviewed and approved by spec rapporteurs prior to submission.
* Editorials corrections should be collected and submitted by spec rapporteurs.

Rel-18 CR Handling

- CR editors / Rapporteurs continue to support maintenance related to their respective CR / WI and are required to follow drafting rules

- Single correction CR per spec coordinated by CR editor/rapporteurs will be agreed per feature for RAN#104

- A list of open issues is expected to be created per CR per WI and shared from CR editors/rapporteurs

- CR editors / Rapporteurs are to gather miscellaneous and non-controversial issues, if any, for their respective specification prior to submission deadline. Other companies are expected to give inputs to these CRs and not have contributions on such issues.

- Companies are should give inputs on editorials and clarifications to the CR editors/rapporteurs and not have individual CRs/contributions on such issues. Emails to CR editors/rapporteurs should follow the following naming convention when sending emails to rapporteurs:

 [Pre\_RAN2#125][CR xx.yyy] Clarification CRs

- The organizational AIs for each WIs are reserved for rapporteurs only. CR rapporteurs are expected to submit only 1 CR per spec.

- For RRC corrections, only selected RIL can be submitted in the agenda (i.e. only if RRC editor suggests to discuss the RIL under this agenda)

- Companies are expected to submit Tdocs with TP (not CRs). More specifically, the Tdoc should contain description of open issues/proposal and the proposed corrections/TP in the contribution itself.. Small issues can be included in the tdoc with just short justification same level of detail as in cover sheet.

- RRC ASN.1 changes can be drafted in a NBC way until ASN.1 is frozen, to avoid unnecessary RRC overhead. The focus should be on drafting the changes in the best possible way.

- Inter-op analysis on Rel-18 CR coverpages in NOT needed

Remaining/updated Rel-18 RRC parameters and MAC CEs

- RRC parameters updates/corrections, including those requested by other groups, e.g. RAN1, are covered by WI-specific RRC CRs.

- MAC CE parameters updates/corrections, including those requested by other groups, e.g. RAN1, are covered by WI-specific MAC CRs

Rel-18 UE capabilities

- EUTRA UE capabilities corrections are covered by separate CRs

- NR UE capabilities (new) and corrections are covered in Rel-18 common MegaCRs (38306 and 38331) covering all rel-18 WIs (end outcome).

- UE capabilities in LPP 37355 and SLPP 38355 are covered in the main CRs for the Positioning WI.

During the work on NR UE caps:

- In a Common Rel-18 Agenda Item (AI): RAN1 and RAN4 feature corrections are handled jointly under a common AI, with some explicit exceptions. Running UE cap MegaCRs are maintained for the parts handled in the common AI.

- In WI-specific Rel-18 Agenda Items: RAN2 features/corrections are handled per WI and only a draft CR per WI is expected and will be merged with the running mega CR

**ASN.1 Review**

- Please follow the instructions provided in ASN.1 review rapporteur and read section “Review execution” on what to expect for paper submission.

 <https://www.3gpp.org/ftp/Email_Discussions/RAN2/%5BMisc%5D/ASN1%20review/Rel-18%202024-03>

* Contributions on WI specific RILs should be submitted under the corresponding WI specific AI and NOT in the general ASN.1 review AI (7.0.3). That AI is reserved for common/cross-WI specific identified RILs
* Title of contribution should start with [RIL number] Title, or "[RIL number1][RIL number N] Title” if there are more than one RIL in a Tdoc.
* Proposals related to RIL resolution should include RIL number in the proposal

Tdoc limitations

Tdoc limitations doesn’t apply to Rapporteur Input, i.e.

- Assigned summary rapporteur input of the summary.

- Email / offline discussions outcomes by discussion rapporteur,

- WI rapporteurs input for WI planning etc,

- TS rapporteur input for TS maintenance.

- Contact Company of a LSin that triggers RAN2 action may submit one tdoc to facilitate the LS reply. This only applies to one of the contact companies in case there are several (default the first).

- Spec rapporteur list of open issues for Rel-18 items

Tdoc limitations doesn’t apply to Input created at the meeting, revisions, assigned documents etc.

Tdoc limitations doesn’t apply to shadow / mirror CRs (Cat A), or In-Principle Agreed CRs.

Tdoc limitations doesn’t apply to Tdocs related to RILs which has been assigned during ASN.1 review. **Single Tdoc containing 1 or more RIL resolutions per WI is expected**.

Tdoc limitations applies to all other submitted tdocs (e.g. discussion tdoc and CR tdoc are counted as two).

Tdoc request/submission for RAN2#125bis deadlines:

* Tdoc Submission deadline: April 5th, 2024 1000 UTC NOTE: NO changes to titles, sourcing companies, or new additional requests are allowed past this date. This should be treated as final deadline similar to all meetings where Tdoc requests/submission deadlines are aligned.

# 7 Rel-18

## 7.11 Enhancements of NR Multicast and Broadcast Services

(NR\_MBS\_enh-Core; leading WG: RAN2; REL-18; WID: RP-231829)

Time budget: 0 TU

Tdoc Limitation: 1 tdoc

### 7.11.1 Organizational

LS in, rapporteur input (e.g. rapporteur CR, open issues list)

R2-2402766 RIL list for MBS Huawei, HiSilicon report Rel-18 NR\_MBS\_enh-Core Late

PropAgree: C151, S735, C152, L011, L010, S736

PropReject: S734, S737

* ?? PropAgree and PropReject RIL resolutions are agreed
* ?? Companies should not resubmit rejected RILs

[R2-2402767](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402767%20MBS%20Rapporteur%20CR%20for%20RRC.docx) MBS Rapporteur CR for RRC Huawei, HiSilicon CR Rel-18 38.331 18.1.0 4688 - F NR\_MBS\_enh-Core Late

* ?? Endorsed as a baseline for further changes
* ?? One week review after the meeting

### 7.11.2 RRC corrections

Corrections related to RILs from ASN.1 review.

**ToDo RILs (high priority)**

[R2-2402282](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402282%20%5BC148%5D%5BC149%5D%5BC150%5D%20RRC%20Corrections%20for%20eMBS.docx) [C148][C149][C150] RRC Corrections for eMBS CATT, CBN, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: To address RIL [C148], it is clarified that UE can only know the serving cell where the multicast service was received in RRC\_CONNECTED for active session. TP in Annex 1 is adopted.

Proposal 3: To address RIL [C150], UE triggers RRC resume if multicast MCCH is not present upon receiving group paging that indicates the multicast session activation. TP in Annex 3 is adopted.

[R2-2403508](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403508%20%5BS731%5D%5BS732%5D%5BS733%5D%20Issues%20for%20Multicast%20Reception.docx) [S731][S732][S733] Issues for Multicast Reception Samsung discussion Rel-18

Proposal 1: Upon unsuccessful completion of the SDT procedure:

(a) UE which is configured for multicast reception in RRC\_INACTIVE, transits to RRC\_IDLE (same as legacy spec).

(b) UE forwards TMGI(s) to upper layers for multicast session(s) that UE is configured for multicast reception and receiving in RRC\_INACTIVE. Adopt the text proposal TP1.

[R2-2403597](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403597%20%5BN101%5D%20%5BN102%5D%20%5BN103%5D%20%5BN104%5D%20%5BN105%5D%20%5BN106%5D%20%5BN107%5D%20%5BN108%5D%5BN109%5D%20Control%20plane%20aspects%20of%20multicast%20reception%20in%20RRC_INACTIVE%20state.docx) [N101] [N102] [N103] [N104] [N105] [N106] [N107] [N108][N109] Control plane aspects of multicast reception in RRC\_INACTIVE state Nokia discussion Rel-18 NR\_MBS\_enh-Core

Proposal 3 [N102]: RAN2 discusses the following options:

Proposal 5 [N104]: If the following conditions are satisfied, UE assumes that the network operates MCCH-less for multicast reception in RRC\_INACTIVE state:

Proposal 6: Upon UE detecting that the network operates MCCH-less for multicast reception in RRC\_INACTIVE state in a cell, UE does not reconnect to the same cell although it cannot find SIB24 scheduled in the cell that sent UE to RRC\_INACTIVE.

**ToDo RILs (low priority)**

[R2-2402246](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402246%20%5BV523%5D%5BV531%5D%20Remaining%20Issues%20on%20Multicast%20Reception%20in%20INACTIVE.docx) [V523][V531] Remaining Issues on Multicast Reception in INACTIVE vivo discussion Rel-18 NR\_MBS\_enh-Core Late

Proposal 1: For clause 5.3.13.1d, change “a multicast session that the UE has joined” to “at least one of the multicast session(s) that the UE has joined”.

Observation: In Rel-15 NR, decoding prioritization is up to UE implementation when more than two PDSCHs are received (e.g. the UE can choose to receive either PDSCH for SI or PDSCh for paging when the PDSCHs are scheduled simultaneously in the same slot).

Proposal 2: RAN2 to clarify that decoding prioritization is up to INACTIVE UE implementation when PDSCH for multicast MTCH and other PDSCH(s) for SI/paging/Msg2/MsgB are simultaneously received.

Proposal 3: RAN2 to adopt the text proposal in the Annex.

[R2-2402282](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402282%20%5BC148%5D%5BC149%5D%5BC150%5D%20RRC%20Corrections%20for%20eMBS.docx) [C148][C149][C150] RRC Corrections for eMBS CATT, CBN, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

 Proposal 2: To address RIL [C149], the description of MII reporting triggered upon handover or RRC re-establishment scenarios is modified. TP in Annex 2 is adopted.

[R2-2402634](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402634%20%5BZ695%2C%20Z696%5D%20Misc%20issues%20for%20multicast%20reception%20in%20RRC_INACTIVE%20with%20draft%20CR.doc) [Z695, Z696] Misc issues for multicast reception in RRC\_INACTIVE with draft CR ZTE, Sanechips discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 RAN2 to agree the draft CR in section 5 for UE handling in multicast reception in RRC\_INACTIVE state.

Proposal 2 The presence of thresholdIndex IE is used as the indication whether the RRC resumption due to reception quality is enabled for one session.

[R2-2403508](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403508%20%5BS731%5D%5BS732%5D%5BS733%5D%20Issues%20for%20Multicast%20Reception.docx) [S731][S732][S733] Issues for Multicast Reception Samsung discussion Rel-18

Proposal 2: RAN2 to agree and capture that PDCP synchronization does not imply the multicast session availability within all the cells in RNA. Adopt the text proposal TP2.

Proposal 3: It is left up to UE implementation as to how it tracks multicast session inactivity in a MCCH-less cell. Capture in a Note.

[R2-2403597](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403597%20%5BN101%5D%20%5BN102%5D%20%5BN103%5D%20%5BN104%5D%20%5BN105%5D%20%5BN106%5D%20%5BN107%5D%20%5BN108%5D%5BN109%5D%20Control%20plane%20aspects%20of%20multicast%20reception%20in%20RRC_INACTIVE%20state.docx) [N101] [N102] [N103] [N104] [N105] [N106] [N107] [N108][N109] Control plane aspects of multicast reception in RRC\_INACTIVE state Nokia discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 [N101]: UE will consider to be allowed to receive a multicast service in RRC\_INACTIVE state in the RRC release message with suspendConfig if the TMGI is present within MulticastConfigInactive-r18 IE is the configuration.

Proposal 2: To reflect above proposals in the specification, the changes in the Annex are adopted.

Proposal 4: Operating RRC\_INACTIVE multicast with/without MCCH is a per PLMN configuration.

Proposal 7: MCCH-less operation is either made feasible without additional signalling in the air interface, as proposed within this paper, or removed from the specifications.

Proposal 8: [N103}[N105]When the UE receives stop monitoring G-RNTI indication in RRC release, it stops monitoring for data in the current cell and stop monitoring G-RNTI even after cell reselection to a cell that does not contain SIB24/MCCH (or PTM configuration).

Proposal 9: [N103}[N105] When the UE does not receive stop monitoring G-RNTI in RRC release, but only in MCCH, it stops monitoring data only in the cell where such indication is provided; and goes back to RRC\_CONNECTED even after cell reselection to a cell that does not contain SIB24/MCCH (or PTM configuration).

Proposal 10: To reflect above proposals in the specification, the changes in the Annex are adopted.

Proposal 11 [N106]: PTM configuration in RRC release with suspendConfig belongs to the serving PCell of the UE in RRC\_CONNECTED state.

Proposal 12: To reflect above proposals in the specification, the changes in the Annex are adopted.

Proposal 13: An LS is sent to RAN3 to define the signalling for information exchange on multicast delivery to UEs in RRC\_INACTIVE state between neighbor gNBs.

Proposal 14: Remove the UE behaviour from Stage-3 regarding mbs-NeighbourCellList. as the UE behaviour is already captured in Stage-2.

Proposal 15 [N108]: If MBS multicast session continues in INACTIVE but with a different MRB (different LCID), the connected mode MRB is suspended (not released).

Proposal 16 [N107]: When PTM configuration is updated via MCCH, the UE shall perform multicast MRB modification if the LCID associated with the MRB is the same as in the previous PTM configuration; otherwise, the UE shall perform multicast MRB release/establishment.

Proposal 17 [N109]: A connected mode MRB continued in inactive mode is suspended (not released) when the MRB cannot be continued in cell reselection (pdcpSync not configured) and a new MRB is established in the reselected cell.

[R2-2403604](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403604.doc) RIL\_J009/J010/J011 MBS CP Sharp discussion

Proposal 1: update the current text related to receive the RRCRelease message to align with the agreement.

Proposal 2: The acquired multicast MCCH information overwrites any stored multicast MCCH information and the PTM configuration configured in dedicated RRC message.

Proposal 3: To have a clarification on what is PTM configuration.

**Non-RIL related**

[R2-2402849](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402849%20Discussion%20on%20frequency%20information%20reported%20for%20shared%20processing.docx) Discussion on frequency information reported for shared processing Xiaomi, Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

Proposal: RAN2 is kindly requested to clarify that the frequency band information reported is based on the UE capability supporting MBS.

**Discussion on RILs from other companies**

[R2-2403547](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403547%20MBS%20RILs.docx) MBS RILs Ericsson discussion Rel-18 NR\_MBS\_enh-Core Late

**Withdrawn**

R2-2402768 [H099] PTM configuration indication in the neighbour cell list for multicast Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core Late

### 7.11.3 Other corrections

*Corrections related to other specs, e.g. 38.300, 38.321, 38.323, UE capabilities.*

R2-2402868 Clarification on MAC reset for multicast reception in RRC\_INACTIVE Apple, Samsung, CATT, Nokia, Huawei, HiSilicon, LG Electronics Inc. CR Rel-18 38.321 18.1.0 1800 - F NR\_MBS\_enh-Core

[R2-2403203](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403203%20Error%20data%20handling%20for%20MBS.docx) Error data handling for MBS Langbo discussion Rel-18 38.321 NR\_MBS\_enh-Core

Proposal 1: The MAC entity shall discard the received subPDU containing an LCID or eLCID value associated with a suspended multicast MRB.

Proposal 2: Move the handling of MAC PDU received for MAC entity's G-RNTI or G-CS-RNTI, or by the configured downlink assignment for MBS multicast containing an LCID or eLCID which is not configured from clause 5.3.3 to clause 5.13.

Proposal 3: Adopt the TP in the Annex.

[R2-2403546](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403546%20Clarification%20for%20%28e%29RedCap%20UE%20supporting%20MBS%20in%20RRC_INACTIVE.docx) Clarification for (e)RedCap UE supporting MBS in RRC\_INACTIVE Ericsson discussion Rel-18 NR\_MBS\_enh-Core

Observation 1 When a RedCap UE indicates to support 16 DRBs and MBS multicast reception in RRC\_INACTIVE it is unclear whether the RedCap UE supports 8 or 16 DRBs in RRC\_INACTIVE.

Proposal 1 Clarify that supportOf16DRB-RedCap-r17 is applicable in RRC\_CONNECTED and when the UE supports MBS multicast in RRC\_INACTIVE it also is applicable in RRC\_INACTIVE.

Proposal 2 Clarify that supportOf16DRB-RedCap-r17 is also applicable in RRC\_INACTIVE when the UE supports SDT.

## 7.14 Enhancement on NR QoE management and optimizations for diverse services

(NR\_QoE\_enh-Core; leading WG: RAN3; REL-18; WID: RP-223488)

Time budget: 0 TU

Tdoc Limitation: 1 tdoc

### 7.14.1 Organizational

LSs and rapporteur inputs (e.g. rapporteur CR, open issues list)

R2-2402103 LS on area scope handling for QoE measurement collection (C1-241717; contact: Ericsson) CT1 LS in Rel-18 NR\_QoE\_enh-Core To:RAN2 Cc:SA4, SA5, RAN3

* ?? Noted

[R2-2403247](file:///D%3A%5C3GPP%5CTSGR2%5CTSGR2_125bis%5Cdocs%5CR2-2403247.zip) RIL issue list for QoE Ericsson discussion Rel-18 NR\_QoE\_enh-Core Late

PropAgree: E215, G121

PropReject: G118, G119, G120, G122, G123, H082

* ?? PropAgree and PropReject RIL resolutions are agreed

[R2-2403246](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403246%20-%20Correction%20CR%20for%20QoE%20measurements.docx) Correction of Enhancement on NR QoE management and optimizations for diverse services Ericsson CR Rel-18 38.331 18.1.0 4711 - F NR\_QoE\_enh-Core Late

* ?? Endorsed as a baseline for further changes
* ?? One week review after the meeting

### 7.14.2 QoE measurements in RRC\_IDLE INACTIVE

*Corrections related to RILs from ASN.1 review.*

R2-2403159 Discussion on serving cell for MBS QoE collection H079H082 Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: For QoE area scope checking, the UE should recheck the area scope only when the cell from which the UE receives the service changes.

Proposal 2: QoE area scope checking should be performed for each QoE configuration separately.

[R2-2403249](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403249%20-%20RIL%20issues%20related%20to%20QoE%20measurements.docx) RIL issues related to QoE measurements Ericsson discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1 Only include measConfigReportAppLayerAvailable in the first RRCReconfigurationComplete message at handover if the UE has stored QoE configuration with appLayerIdleInactiveConfig not successfully transmitted since the UE entered RRC\_CONNECTED.

Proposal 2 Add a note to clarify that once a value of a parameter included in an RVQoE configuration has been forwarded to the UE application layer, the value of the parameter will be maintained in the UE application layer unless explicitly released.

Proposal 3 The UE sends the session status indication to the node that configured the QoE configuration.

### 7.14.3 Other corrections

Corrections related to other specs, e.g. 38.300, 37.340, UE capabilities.

R2-2403075 Consideration on QoE remaining issues ZTE Corporation, Sanechips discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: RAN2 agrees to revise the field description of the flag idleInactiveReportAllowed based on the TP in the annex 1.

Proposal 2: UE includes RPLMN identity in QoE reports stored in AS layer when storing QoE reports in non-connected stat.

[R2-2403248](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403248%20-%20Open%20issues%20for%20QoE%20measurements.docx) Open issues for QoE measurements Ericsson discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1 Send an LS to SA4 to discuss the problem of “pollution” of the QoE reports and the lack of measurement results. (A draft LS is included in the Annex.1.)

[R2-2403486](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403486%20Correction%20for%20NR%20QoE%20configurations%20release%20in%20inter-RAT%20HO.docx) Correction for NR QoE configurations release in inter-RAT HO Nokia, Nokia Shanghai Bell CR Rel-18 38.331 18.1.0 4749 - F NR\_QoE\_enh-Core

## 7.24 TEI18

Specific items may be allocated to a breakout session for treatment.

Time budget: 1 TU

### 7.24.2 TEI proposals by RAN2

Items initiated in RAN2 for NR and LTE.

No contributions should be submitted under 7.24.2. They should be submitted under 7.24.x

Tdoc limitation: 1 tdoc, limitation applicable to new proposals. No new Cat. B proposals expected for this meeting

#### 7.24.2.2 Other RAN2 TEI-18

Contributions should focus only critical issues/corrections for already agreed TEI-18 topics. New TEI proposals should address critical issues that should be resolved by RAN2#125. Co-sourcing of such proposals is encouraged. Contributions on items that were explicitly downprioritized from Rel-18 WIs should not be brought as TEI18. No new Cat. B proposals expected for this meeting

Including outcome of [POST125][022][RedCap emergency calls] Review CRs (Apple) and [POST125][612][TEI18] CR for MBS operation with eDRX/MICO (Nokia)

**MBS with eDRX/MICO**

[R2-2403598](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403598%20CR%20on%20MBS%20operation%20with%20eDRX%20MICO%20%5BTEI18%20NR_MBS_enh%5D.docx) MBS operation with eDRX MICO [TEI18 NR\_MBS\_enh] Nokia, Ericsson CR Rel-18 38.304 18.1.0 0399 - F TEI18

**MBS and (e)RedCap**

LSin

[R2-2402112](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402112_R1-2401732.docx) LS on separate CFR introduced in Rel-18 TEI of MBS for RedCap UE applied for eRedCap UE (R1-2401732; contact: ZTE) RAN1 LS in Rel-18 NR\_redcap\_enh-Core To:RAN2

Search space clarifications

[R2-2402324](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402324%20Remaining%20Issue%20on%20Broadcast%20CFR%20for%20Redcap.docx) Remaining Issue on Broadcast CFR for Redcap vivo discussion Rel-18 NR\_MBS-Core, NR\_redcap-Core, TEI18 R2-2400955 Late

[R2-2402631](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402631%20MCCH%20Search%20space%20for%20%28e%29RedCap%20UE%20MBS%20broadcast%20reception.doc) MCCH Search space for (e)RedCap UE MBS broadcast reception ZTE, Sanechips discussion Rel-18 TEI18

[R2-2402769](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402769%20Clarification%20on%20MBS%20search%20spaces%20configuration%20for%20%28e%29Redcap%20%5BRedCapMBS_Bcast%5D.docx) Clarification on MBS search spaces configuration for (e)Redcap [RedCapMBS\_Bcast] Huawei, CATT, Xiaomi, HiSilicon discussion Rel-18 TEI18, NR\_MBS\_enh-Core, NR\_redcap\_enh-Core

[R2-2402770](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402770%20Correction%20on%20MBS%20search%20spaces%20configuration%20for%20%28e%29Redcap%20%5BRedCapMBS_Bcast%5D.docx) Correction on MBS search spaces configuration for (e)Redcap [RedCapMBS\_Bcast] Huawei, CATT, Xiaomi, HiSilicon CR Rel-18 38.331 18.1.0 4689 - F TEI18, NR\_MBS\_enh-Core, NR\_redcap\_enh-Core

Stage-2 clarifications

[R2-2402283](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402283%20Correction%20to%2038.300%20for%20redcap%20CFR%20of%20MBS.docx) Correction to 38.300 for redcap CFR of MBS CATT, CBN, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

[R2-2403548](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403548%20MBS%20RedCap%20CFR%20in%20Stage%202.docx) MBS RedCap CFR in Stage 2 Ericsson discussion Rel-18 TEI18

Proposal 1 Add a short description about MBS RedCap CFR to 38.300.

Proposal 2 Clarify in 38.306 that a RedCap UE supporting MBS broadcast also supports RedCap CFR.

Proposal 3 Capture in 38.300 that a UE only monitors one CFR at a time. A RedCap UE monitors the RedCap CFR, if configured, otherwise the default CFR if the bandwidth of the default CFR is within the UE capability.

Proposal 4 Clarify in 38.300 that the NR-RAN node ensures that the UE does not receive two DCIs for the same G-RNTI.

Other

[R2-2403549](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403549%20MBS%20and%20eRedCap%20UE.docx) MBS and eRedCap UE Ericsson discussion Rel-18 TEI18

Proposal 1 Introduce NR RedCap UE information for eRedCap with or without reduced baseband bandwidth.

Proposal 2 RAN2 assumes that when NR RedCap UE information is absent NG-RAN cannot assume anything about the type of UE the MBS broadcast session is intended for.

# 8 Rel-19

## 8.7 XR Enhancements Ph3

(NR\_XR\_Ph3-Core; leading WG: RAN2; REL-19; WID: RP-240791)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.7.1 Organizational

LS, Rapporteur input, including workplan, etc.

[R2-2402836](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402836%20XR%20Work%20Plan.docx) XR Workplan Nokia, Qualcomm (Rapporteurs) Work Plan Rel-19 NR\_XR\_Ph3-Core

[R2-2402837](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402837%20XR%20SA2%20Overview.docx) SA2 Overview Nokia, Qualcomm (Rapporteurs) discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402838](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402838%20XR%20Multi-Modal%20Overview.docx) Multi-Modal Communication Overview Nokia, Qualcomm (Rapporteurs) discussion Rel-19 NR\_XR\_Ph3-Core

### 8.7.2 Multi-modality support

Objective: Study and if justified, specify aspects related to multi-modality (intra-UE) (with coordination with SA2/SA4 as needed by LS request). Aim to facilitate efficient and effective support for XR application with Multiple QoS flows with multi-modal inter-dependencies, meeting multi-modal QoS requirements, e.g. synchronization and/or coordination. Efficiency enhancements are expected to be visible in terms of capacity or power consumption.

Including aspects such as: intended use cases, target requirements, relation with SA2/SA4 work, solution directions.

[R2-2402278](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402278_multi-modal.doc) Discussions on Multi-modality Awareness Fujitsu discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402353](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402353.doc) Discussion on XR Multi-modality Spreadtrum Communications discussion Rel-19

[R2-2402400](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402400_R19-XR_Awareness-MultiModal.docx) Justification and areas of interest for Multi-modal Services Intel Corporation discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402443](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402443%20R19%20XR%20Multi-Modality.docx) Multi-Modality Support in RAN Samsung discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402474](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402474%20Discussion%20on%20multi-modal%20XR_final.docx) Discussion on multi-modal XR Huawei, HiSilicon discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402510](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402510_Initial%20Considerations%20on%20multi-modality.docx) Initial Consideration on Multi-Modality CATT discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402549](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402549%20Discussion%20on%20multi-modality%20support%20for%20XR.docx) Discussion on multi-modality support for XR CMCC, CSPG discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402628](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402628_Discussion%20on%20Multi-modality.doc) Discussion on Multi-modality vivo discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402676](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402676%20Discussion%20on%20Multi-modality%20support%20for%20XR%20traffic.doc) Discussion on Multi-modality support for XR traffic Xiaomi Communications discussion

[R2-2402762](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402762_xrMultiModality.docx) RAN enhancements for Multi-Modality support ZTE Corporation, Sanechips discussion

[R2-2402841](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402841%20Discussion%20on%20Multi-modal%20support%20for%20XR.docx) Discussion on Multi-modal support for XR LG Electronics Inc. discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402879](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402879%20Views%20on%20Multi-Modality%20Services%20for%20XR.docx) Views on Support of Multi-Modality Services in Rel-19 XR Apple discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402953](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402953.docx) Support of Multi-Modal XR applications Lenovo discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402979](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402979%20Discussion%20on%20Multi-Modality%20XR.docx) Discussion on Multi-Modality XR Meta discussion

[R2-2403064](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403064_XR.docx) XR multi modal flows Sony discussion Rel-19 NR\_XR\_Ph3

[R2-2403091](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403091%20%20Discussion%20on%20Multi-modality%20support%20for%20XR.docx) Discussion on Multi-modality support for XR TCL discussion Rel-19

[R2-2403118](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403118%20Discussion%20on%20multi-modality%20enhancement%20for%20XR%20traffic.docx) Discussion on multi-modality enhancement for XR traffic China Telecom discussion

[R2-2403133](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403133%20-%20Discussion%20on%20the%20multi-modality%20support.docx) Discussion on the multi-modality support OPPO discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403223](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403223%20-%20Discussion%20on%20multi-modality.docx) Discussion on multi-modality Ericsson discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403294](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403294%20%28R19%20NR%20XR%20A872_Multi%20modality%20support%29.docx) Multi-modality support for XR InterDigital discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403407](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403407.docx) Discussion on multi-modality support NEC Corporation discussion

[R2-2403411](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403411%20Multi-modality%20work%20in%20Rel-19.docx) Multi-modality work in Rel-19 Nokia, Nokia Shanghai Bell discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403569](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403569%20Consideration%20on%20RAN%20enhancements%20for%20Multi-Modality.docx) Consideration on RAN enhancements for Multi-Modality China Unicom discussion NR\_XR\_Ph3-Core

[R2-2403659](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403659%20Multi-modality%20support%20for%20XR.docx) Multi-modality support for XR Google Inc. discussion

[R2-2403674](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403674.docx) Discussion on multi-modality MediaTek Inc. discussion Rel-19

### 8.7.3 RRM measurement gaps restrictions related enhancements

Objective: Specify enhancements to enable transmission/reception in gaps/restrictions that are caused by RRM measurements (from inter-frequency RRM measurement gaps, or intra-frequency measurements, or other scheduling restrictions etc).

**This agenda item will not be treated during RAN2#125bis and no contributions should be submitted for this AI for this meeting.**

### 8.7.4 Scheduling enhancements

Objective: For the UL, Study and if justified, Specify enhancements using delay/deadline information, for support of UL scheduling to enable high XR capacity while meeting delay requirements/avoiding too late PDUs.

Including aspects such as: identification of current scheme drawbacks/limitations, enhancement directions.

[R2-2402314](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402314%20%20Discussion%20on%20Scheduling%20enhancements%20in%20XR.docx) Discussion on Scheduling enhancements in XR TCL discussion Rel-19

[R2-2402325](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402325%20-%20Discussion%20on%20scheduling%20enhancements%20for%20XR.docx) Discussion on scheduling enhancements for XR OPPO discussion

[R2-2402339](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402339.doc) Discussion on XR scheduling enhancement Spreadtrum Communications discussion Rel-19

[R2-2402389](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402389%20Discussion%20on%20delay-aware%20scheduling.docx) Discussion on delay-aware scheduling Qualcomm Incorporated discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402401](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402401_R19-XR_UL-Scheduling.docx) Areas of interest for UL scheduling enhancements of XR traffic Intel Corporation discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402444](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402444%20R19%20XR%20Scheduling%20Enhancement.docx) Scheduling Enhancements for Delay-Critical Data Transmission Samsung discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402511](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402511_Consideration%20on%20XR%20specific%20scheduling%20enhancement.docx) Consideration on XR specific scheduling enhancement CATT discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402550](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402550%20Discussion%20on%20scheduling%20enhancement%20for%20XR.docx) Discussion on scheduling enhancement for XR CMCC discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402629](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402629_Discussion%20on%20scheduling%20enhancement%20for%20XR.docx) Discussion on scheduling enhancement for XR vivo discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402675](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402675%20Discussion%20on%20scheduling%20enhancements%20of%20XR%20traffic.doc) Discussion on scheduling enhancements of XR traffic Xiaomi Communications discussion

[R2-2402684](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402684%20Discussion%20on%20delay-based%20UL%20scheduling%20enhancements.docx) Discussion on delay-based UL scheduling enhancements HONOR discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402763](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402763_xrSchedulingEnh.docx) Scheduling enhancements for XR ZTE Corporation, Sanechips discussion

[R2-2402880](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402880%20Views%20on%20Delay-Aware%20Operations%20for%20XR.docx) Views on Delay-Aware Operations in Rel-19 XR Apple discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402952](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402952.docx) Enhanced Uplink Scheduling for XR Lenovo discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402980](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402980%20Discussion%20on%20Scheduling%20Enhancement%20for%20XR.docx) Discussion on Scheduling Enhancement for XR Meta discussion

[R2-2403045](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403045_Considerations%20on%20delay-sensitive%20scheduling%20for%20XR.docx) Considerations on delay-sensitive scheduling for XR NEC Corporation discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403052](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403052%20Scheduling%20Enhancements%20for%20XR.docx) Scheduling Enhancements for XR Nokia, Nokia Shanghai Bell discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403065](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403065_UL%20Scheduling%20enhancements%20for%20XR_v1a.docx) UL Scheduling enhancements for XR Sony discussion Rel-19 NR\_XR\_Ph3

[R2-2403119](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403119%20Discussion%20on%20scheduling%20enhancements%20for%20XR%20traffic.docx) Discussion on scheduling enhancements for XR traffic China Telecom discussion

[R2-2403143](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403143%20Delay-aware%20scheduling%20enhancements_v3.docx) Delay-aware scheduling enhancements Huawei, HiSilicon discussion Rel-19

[R2-2403225](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403225%20-%20UL%20scheduling%20enhancements.docx) UL scheduling enhancements Ericsson discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403295](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403295%20%28R19%20NR%20XR%20A874_Scheduling%20enhancements%29.docx) Scheduling enhancements for XR InterDigital discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403415](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403415%20Discussion%20for%20scheduling%20enhancements.docx) Discussion for scheduling enhancements III discussion NR\_XR\_Ph3-Core

[R2-2403591](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403591.docx) Discussion on UL scheduling enhancements MediaTek Inc. discussion Rel-19

[R2-2403626](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403626.docx) Discussion on resource allocation for XR Google Inc. discussion NR\_XR\_Ph3-Core

[R2-2403669](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403669%20Discussion%20on%20Scheduling%20enhancement%20for%20XR.docx) Discussion on scheduling enhancement for XR LG Electronics Inc. discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403690](file:///D%3A%5C3GPP%5CTSGR2%5CTSGR2_125bis%5Cdocs%5CR2-2403690.zip) UL related Scheduling Enhancements for XR Rakuten Mobile, Inc discussion Rel-19

### 8.7.5 RLC enhancements

Objective: RLC re-transmission related enhancements for operation of RLC Acknowledged Mode (AM) with small packet delay budget.

Including aspects such as: identification of current scheme drawbacks/limitations, enhancement directions.

[R2-2402212](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402212%20-%20Discussion%20on%20RLC%20re-transmission%20related%20enhancements.docx) Discussion on RLC re-transmission related enhancements OPPO discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402254](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402254%20RLC%20re-transmission%20enhancements%20for%20XR.docx) RLC re-transmission enhancements for XR ITRI discussion NR\_XR\_Ph3-Core

[R2-2402279](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402279%20Discussions%20on%20RLC%20enhancements.docx) Discussions on RLC enhancements Fujitsu discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402318](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402318.docx) RLC AM retransmission enhancements Xiaomi discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402354](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402354.doc) Discussion on RLC enhancements for XR Spreadtrum Communications discussion Rel-19

[R2-2402390](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402390%20Discussion%20on%20RLC%20enhancements.docx) Discussion on RLC enhancements Qualcomm Incorporated discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402402](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402402_R19-XR_RLC-Enh.docx) RLC AM retransmission enhancements Intel Corporation discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402512](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402512_Consideration%20on%20RLC%20Retransmission%20Enhancement%20for%20XR.docx) Consideration on RLC Retransmission Enhancement for XR CATT discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402515](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402515%20Discussion%20on%20RLC%20AM%20enhancements.docx) Discussion on RLC AM enhancements Huawei, HiSilicon discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402573](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402573.docx) Discussion on RLC enhancements in XR CMCC discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402630](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402630_Discussion%20on%20RLC%20enhancement%20for%20XR.docx) Discussion on RLC enhancement for XR vivo discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402685](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402685%20Discussion%20on%20RLC%20enhancements%20for%20XR.docx) Discussion on RLC enhancements for XR HONOR discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402699](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402699_KDDI_XR_RLC_Enh.docx) Considerations on RLC re-transmission related enhancements for XR KDDI Corporation discussion

[R2-2402734](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402734%20AM%20RLC%20enhancement.docx) AM RLC enhancement Lenovo discussion Rel-19

[R2-2402764](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402764%20xrRlcEnh.docx) RLC enhancements for XR ZTE Corporation, Sanechips discussion

R2-2402817 RLC AM enhancement NEC discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402839](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402839%20RLC%20%20Enhancements.docx) RLC Enhancements for XR Nokia discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402881](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402881%20Views%20on%20RLC-AM%20Enhancements%20for%20XR.docx) Views on RLC-AM Enhancements for Rel-19 XR Apple discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2402981](file:///D%3A%5C3GPP%5CExtracts%5CR2-2402981%20Discussion%20on%20RLC%20Enhancements%20for%20XR.docx) Discussion on RLC Enhancements for XR Meta discussion

[R2-2403090](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403090-RLC%20AM%20retransmission%20enhancement%20for%20XR.docx) RLC AM retransmission enhancement for XR TCL discussion Rel-19

[R2-2403102](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403102.docx) Discussion on RLC enhancements on small packet delay budget scenario MediaTek Inc. discussion Rel-19

[R2-2403296](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403296%20%28R19%20NR%20XR%20A875_RLC_enhancements%29.docx) RLC enhancements for XR InterDigital discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403368](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403368%20-%20Discussion%20on%20RLC%20AM%20Enhancements.docx) Discussion on RLC AM Enhancements Ericsson discussion Rel-19

[R2-2403462](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403462%20Consideration%20on%20RLC%20enhancements%20for%20XR.docx) Consideration on RLC enhancements for XR LG Electronics Inc. discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403504](file:///D%3A%5C3GPP%5CExtracts%5CR2-2403504%20Discussion%20on%20RLC%20enhancements%20for%20XR_v3.docx) Discussion on RLC enhancements for XR Samsung discussion Rel-19 NR\_XR\_Ph3-Core

[R2-2403675](file:///D%3A%5C3GPP%5CTSGR2%5CTSGR2_125bis%5Cdocs%5CR2-2403675.zip) Discussion on RLC Retransmission Enhancements for XR Rakuten Mobile, Inc discussion Rel-19