3GPP TSG-RAN WG2 Meeting #125 DRAFT\_R2-2401546

Athens, Greece, Feb. 26th – Mar. 1st, 2024

Source: Session chair (Huawei)

Title: Report from session on MBS and QoE

# AT-meeting offline discussions:

Started together with the meeting start:

* [AT125][600] Organizational – Session on MBS and QoE

Scope:

* + - Share plans and list of ongoing email discussions for the session on MBS and QoE
    - Share meeting notes and agreements for review and endorsement

Started after the online discussion on Tuesday:

* [AT125][601][eMBS] Stage-2 rapporteur CR (CMCC)

Scope: Review the Stage-2 corrections submitted for this meeting and update 38.300 rapporteur CR as needed.

Intended outcome: Revised rapporteur CR in R2-2401651

Deadline: CR available for agreement via e-mail: Friday 2024-03-01 0800

* [AT125][602][eMBS] MAC rapporteur CR (Apple)

Scope: Review the MAC corrections submitted for this meeting and update 38.321 rapporteur CR as needed.

Intended outcome: Revised rapporteur CR in R2-2401652

Deadline: CR available for agreement via e-mail: Friday 2024-03-01 0800

* [AT125][603][eMBS] MBS UE capabilities CRs (vivo)

Scope: Prepare and review draft 38.306 and 38.331 CRs for MBS capabilities.

Intended outcome: Draft CRs for MBS capabilities in R2-2401653 (38.306) and R2-2401654 (38.331)

Deadline: Draft CRs available for agreement via e-mail: Friday 2024-03-01 0800

* [AT125][604][eMBS] MRBs handling during state transitions (Sharp)

Scope: Discuss MRB related proposals from [R2-2401057](file:///D:\3GPP\Extracts\R2-2401057%20Multicast%20MRBs%20Release%20when%20switching%20to%20RRC_CONNECTED%20(RIL%20J003).docx) and [R2-2401260](file:///D:\3GPP\Extracts\R2-2401260%20Remaining%20UP%20issues%20for%20multicast%20reception%20in%20RRC_INACTIVE.docx) to understand whether UE behaviour needs to be modified or whether this can solved by network implementation.

Intended outcome: Report in [R2-2401655](file:///D:\3GPP\Extracts\R2-2401655%20Summary%20of%20%5bAT125%5d%5b604%5d%5beMBS%5d%20MRBs%20handling%20during%20state%20transitions.docx)

Deadline: Report available for CB session on Thursday

* [AT125][605][eMBS] Initial PDCP variable (Huawei)

Scope: Discuss whether there is any specifications impact from the agreement that the gNB needs to know whether to configure the initial PDCP variable when an RRC\_INACTIVE UE resumes.

Intended outcome: Report in [R2-2401656](file:///D:\3GPP\Extracts\R2-2401656%20Summary%20of%20%5bAT125%5d%5b605%5d%5beMBS%5d%20Initial%20PDCP%20variable%20(Huawei).docx)

Deadline: Report available for CB session on Thursday

Started after the online discussion on Wednesday:

* [AT125][606][ QoE] Reply LS to SA5 on area scope (Ericsson)

Scope: Reply LS to SA5 on area scope

Intended outcome: Agreed LS

Deadline: Friday 2024-03-01 0800 for e-mail approval

* [AT125][607][QoE] Draft 38.306 CR for QoE (CMCC)

Scope: Draft 38.306 CR for QoE as per the agreement from the meeting

Intended outcome: Endorsed draftCR

Deadline: Friday 2024-03-01 0800 for e-mail approval

Started after the online discussion on Thursday:

* [AT125][608][eMBS] LS to RAN1 (vivo)

Scope: LS to RAN1 on intra-slot TDM

Intended outcome: Approved LS in R2-2401661

Deadline: Friday 2024-03-01 0800

* [AT125][609][eMBS] LS to SA2 (Nokia)

Scope: LS to SA2 on MBS FSAI

Intended outcome: Approved LS in R2-2401662

Deadline: Friday 2024-03-01 0800 for e-mail approval

## 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 red 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#103

- A list of open issues is expected to be created per CR per WI and shared by Jan. 19th 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 are covered in CR 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

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 red to RILs which has been assigned during ASN.1 review, unless otherwise stated in agenda. NOTE: This will depend on outcome of offline ASN.1 review

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

Tdoc request/submission for RAN2#125 deadlines:

* Tdoc Request deadline: Feb. 16th 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.
* (NEW) Tdoc Submission deadline: Feb. 19th 1500 UTC

## 2.5 Others

[R2-2400003](file:///D:\3GPP\TSGR2\TSGR2_125\docs\R2-2400003.zip) RAN2 Handbook MCC discussion

# 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: 3 tdocs

### 7.11.1 Organizational and stage-2 corrections

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

**LS in**

[R2-2400028](file:///D:\3GPP\Extracts\R2-2400028_R1-2312641.docx) Reply LS on UE Capability of Multicast Reception in RRC\_INACTIVE (R1-2312641; contact: vivo) RAN1 LS in Rel-18 NR\_MBS\_enh-Core To:RAN2

* RAN2 should discuss “whether a new FG for the support of intra-slot TDMed unicast/broadcast/ multicast PDSCHs in RRC\_INACTIVE state is introduced is up to RAN2.”
* Noted

**Rapporteur CRs**

[R2-2401150](file:///D:\3GPP\Extracts\R2-2401150%20Corrections%20to%20TS%2038.300%20for%20MBS.docx) Corrections to TS 38.300 for MBS CMCC CR Rel-18 38.300 18.0.0 0798 - F NR\_MBS\_enh-Core

* Some corrections needed:
  + - 3GPP styles are not used
    - Date is wrong (year 2023)
    - Other specs is ticked, but no CRs mentioned
* Reviewed via e-mail discussion; needs to be revised at least to correct the above issues

DISCUSSION:

* LGE thinks we need to improve the wording in one place
* Ericsson is not sure about the first correction

To be started after online session on Tuesday, handled primarily via e-mail/server:

* [AT125][601][eMBS] Stage-2 rapporteur CR (CMCC)

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Intended outcome: Revised rapporteur CR in R2-2401651

Deadline: CR available for agreement via e-mail: Friday 2024-03-01 0800

R2-2401651 Corrections to TS 38.300 for MBS CMCC CR Rel-18 38.300 18.0.0 0798 1 F NR\_MBS\_enh-Core

**[CB]**

[R2-2401263](file:///D:\3GPP\TSGR2\TSGR2_125\docs\R2-2401263.zip) RIL list for MBS Huawei, HiSilicon report Rel-18 NR\_MBS\_enh-Core

* PropAgree/PropReject conclusions are endorsed

[R2-2401262](file:///D:\3GPP\Extracts\R2-2401262%20MBS%20Rapporteur%20CR%20for%20RRC.docx) MBS Rapporteur CR for RRC Huawei, HiSilicon CR Rel-18 38.331 18.0.0 4593 - F NR\_MBS\_enh-Core

* Endorsed as a baseline for further changes in this meeting

DISCUSSION

* QCM indicates other specs affected needs to be ticked (Y or N)

[R2-2401298](file:///D:\3GPP\Extracts\R2-2401298_38321_CR1772r0_Miscellaneous%20corrections%20to%20eMBS%20in%20MAC_v1.docx) Miscellaneous corrections to eMBS in MAC Apple, Samsung, Qualcomm Incorporated, CATT CR Rel-18 38.321 18.0.0 1772 - F NR\_MBS\_enh-Core

* Some corrections needed:
  + - There should be no revision marks on the cover page.
    - Clauses affected should mention a clause, not a table number
* Endorsed as a baseline for further changes in this meeting (e.g. consider comments below and correct the above issues)
* Huawei asks if we need to change legacy MCCH description to clarify it is for broadcast. Apple agrees.
* Ericsson would like to clarify multicast MCCH is only for Inactive. QCM agrees.

To be started after online session on Tuesday, handled primarily via e-mail/server:

* [AT125][602][eMBS] MAC rapporteur CR (Apple)

Scope: Review the MAC corrections submitted for this meeting and update 38.321 rapporteur CR as needed.

Intended outcome: Revised rapporteur CR in R2-2401652

Deadline: CR available for agreement via e-mail: Friday 2024-03-01 0800

R2-2401652 Miscellaneous corrections to eMBS in MAC Apple, Samsung, Qualcomm Incorporated, CATT CR Rel-18 38.321 18.0.0 1772 1 F NR\_MBS\_enh-Core

**[CB]**

**Stage-2 corrections**

[R2-2400266](file:///D:\3GPP\Extracts\R2-2400266%20Corrections%20to%2038.300%20for%20eMBS.docx) Corrections to 38.300 for eMBS CATT, CBN, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401259](file:///D:\3GPP\Extracts\R2-2401259%20MBS%20corrections%20to%20Stage%202.docx) MBS corrections to Stage 2 Huawei, HiSilicon CR Rel-18 38.300 18.0.0 0802 - F NR\_MBS\_enh-Core

=> Revised in [R2-2401512](file:///D:\3GPP\Extracts\R2-2401512%20MBS%20corrections%20to%20Stage%202.docx)

[R2-2401512](file:///D:\3GPP\Extracts\R2-2401512%20MBS%20corrections%20to%20Stage%202.docx) MBS corrections to Stage 2 Huawei, HiSilicon CR Rel-18 38.300 18.0.0 0802 1 F NR\_MBS\_enh-Core

**Withdrawn**

[R2-2400315](file:///D:\3GPP\Extracts\R2-2400315%20-%20Correction%20on%20TS%2038.300%20for%20NR%20MBS%20enhancements.docx) Correction on TS 38.300 for NR MBS enhancements THALES CR Rel-18 38.300 18.0.0 0778 - D NR\_MBS\_enh-Core Withdrawn

R2-2400940 Miscellaneous corrections to eMBS in MAC Apple CR Rel-18 38.321 18.0.0 1755 - F NR\_MBS\_enh-Core Withdrawn

### 7.11.2 Multicast reception in RRC\_INACTIVE

Papers should not be submitted to 7.11.2, please use 7.11.2.1 or 7.11.2.2 instead.

#### 7.11.2.1 Control plane corrections

Including addressing RRC/ASN.1 review comments and corrections to TS 38.304.

**ToDo RILs**

[R2-2401264](file:///D:\3GPP\Extracts\R2-2401264%20%5bH073%5d%20Discussion%20on%20how%20to%20notify%20UE%20of%20session%20activation%20during%20SDT.docx) [H073] Discussion on how to notify UE of session activation during SDT Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

Proposal: RAN2 to confirm that the SDT procedure shouldn’t be interrupted by the session activation notification with RRCRelease and update the spec correspondingly.

DISCUSSION:

* Ericsson agrees with the intention but this can be left to network implementation. It depends on prioritization between unicast and MC. ZTE agrees, i.e. network needs to choose either unicast or MC.
* LGE thinks network can wait until SDT is finished.
* Samsung agrees with the proposal, i.e. the UE should behave as if it received paging.
* Ericsson thinks the network may interrupt if it needs to.
* Nokia agrees this can be handled by the network.
* Intel wonders whether MC configuration can be included when resumeIndication for SDT is included.
* RAN2 thinks it can be left to network implementation whether to continue SDT or send session activation right-away. No specs impact.

[R2-2400263](file:///D:\3GPP\Extracts\R2-2400263%20%5bC132%5d%20RRC%20Resume%20when%20below%20the%20Threshold.docx) [C132] RRC Resume when below the Threshold CATT, CBN, Huawei, HiSilicon, Xiaomi, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: UE only initiate RRC connection resume if UE is not indicated to stop monitoring the G-RNTI for the session joined when the measured RSRP or RSRQ is below the indicated threshold.TP in Annex 1 is adopted.

DISCUSSION:

* Ericsson is not sure about this, because the UE may roam into even worse conditions. It may cause all UEs resume at the same time when session is activated.
* Huawei thinks UE performs cell reselection when the conditions in the cell deteriorate.
* QCM agrees with the proposal. There is no reason to go back to Connected if the UE does not have service to receive.
* LGE prefers current UE behaviour to avoid session activation delay.
* ZTE supports the proposal. If we don’t have it, the network will need to release the UE anyway.
* AT&T thinks there should be a possibility to make the UE connect to the network even if the service is deactivated.
* Samsung supports the proposal. The resume is useless if the session is deactivated.
* Xiaomi also supports the proposal. Does not believe there is additional delay, i.e. it is the same as for legacy activation case.
* Ericsson thinks we need to care about the quality in the first place. QCM thinks this is an oversight and indicates the NW does not know why UE reconnected.
* UE only initiate RRC connection resume if UE is not indicated to stop monitoring the G-RNTI for the session joined when the measured RSRP or RSRQ is below the indicated threshold. TP in Annex 1 is adopted.

[R2-2401057](file:///D:\3GPP\Extracts\R2-2401057%20Multicast%20MRBs%20Release%20when%20switching%20to%20RRC_CONNECTED%20(RIL%20J003).docx) Multicast MRBs Release when switching to RRC\_CONNECTED (RIL J003) Sharp discussion R2-2313416

Proposal 1 The MRBs used in RRC\_INACTIVE are released when UE transits from RRC\_INACTIVE to RRC\_CONNECTED.

DISCUSSION:

* Nokia thinks MRBs established in INACTIVE should be released but not these continued from Connected. LGE, Ericsson agrees.
* vivo agrees with the intention, but thinks network can realize this via full configuration.
* ZTE thinks even if the UE releases all MRBs, there will be misalignment with the network. ZTE agrees with Nokia.
* QCM wonders if there is any impact on specifications, as mentioned the network can handle this already.
* Huawei thinks there are two types of MRBs: established in INACTIVE, continued from Connected. Different behaviour is needed for these types.
* Intel indicates the UE will resume only MRBs which were suspended. Some clarification is needed.
* Offline to understand whether this can be handled by the network or some clarification/correction in the specifications is needed, considering different “types” of MRBs. [Sharp]
* [AT125][604][eMBS] MRBs handling during state transitions (Sharp)

Scope: Discuss MRB related proposals from [R2-2401057](file:///D:\3GPP\Extracts\R2-2401057%20Multicast%20MRBs%20Release%20when%20switching%20to%20RRC_CONNECTED%20(RIL%20J003).docx) and [R2-2401260](file:///D:\3GPP\Extracts\R2-2401260%20Remaining%20UP%20issues%20for%20multicast%20reception%20in%20RRC_INACTIVE.docx) to understand whether UE behaviour needs to be modified or whether this can solved by network implementation.

Intended outcome: Report in [R2-2401655](file:///D:\3GPP\Extracts\R2-2401655%20Summary%20of%20%5bAT125%5d%5b604%5d%5beMBS%5d%20MRBs%20handling%20during%20state%20transitions.docx)

Deadline: Report available for CB session on Thursday

[R2-2401655](file:///D:\3GPP\Extracts\R2-2401655%20Summary%20of%20%5bAT125%5d%5b604%5d%5beMBS%5d%20MRBs%20handling%20during%20state%20transitions.docx) Summary of [AT125][604][eMBS] MRBs handling during state transitions (Sharp) Sharp discussion Rel-18 NR\_MBS\_enh-Core

Proposal： Upon receiving the RRCResume message, UE releases Type A MRBs and restore Type B MRBs with the configuration in UE AS context to allow NW to perform delta configuration based on the configuration of Type B MRBs stored in the UE AS context,

Type A MRBs: MRBs configured in RRCRelease or multicast MCCH (i.e., MRBs are established according to the configuration carried in RRCRelease or multicast MCCH).

Type B MRBs: MRBs configured in RRC\_CONNECTED and continued in RRC\_INACTIVE.

* Upon receiving the RRCResume message, UE releases Type A MRBs and restore Type B MRBs with the configuration in UE AS context to allow NW to perform delta configuration based on the configuration of Type B MRBs stored in the UE AS context,
  + - Type A MRBs: MRBs configured in RRCRelease or multicast MCCH (i.e., MRBs are established according to the configuration carried in RRCRelease or multicast MCCH).
    - Type B MRBs: MRBs configured in RRC\_CONNECTED and continued in RRC\_INACTIVE.

[R2-2401265](file:///D:\3GPP\Extracts\R2-2401265%20%5bH074%5d%20Discussion%20on%20UE%20behaviour%20after%20receiving%20RRCReject%20during%20RRC%20resume%20for%20multicast%20reception.docx) [H074] Discussion on UE behaviour after receiving RRCReject during RRC resume for multicast reception Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: UE considers the access attempt as barred during T302 running, if the Access Category is '0' for RRC resumption triggered by multicast reception.

Proposal 2: Clarify in clause 5.3.14.2 that the condition of “else if the Access Category is Access Category '0'” is for RRC resumption triggered by multicast reception.

DISCUSSION:

* NEC understands the intention, but does not think this needs to be handled like this. Selection of AC could be up to UE implementation. Spreadtrum supports this proposal.
* Ericsson thinks the correction is needed, otherwise the NW has no means of properly rejecting the UE.
* CATT agrees with Ericsson.
* Xiaomi prefers to keep the existing behaviour.
* Nokia supports the proposals.
* UE considers the access attempt as barred during T302 running, if the Access Category is '0' for RRC resumption triggered by multicast reception.
* Clarify in clause 5.3.14.2 that the condition of “else if the Access Category is Access Category '0'” is for RRC resumption triggered by multicast reception.

[R2-2400264](file:///D:\3GPP\Extracts\R2-2400264%20%5bC135%5d%20Conflict%20between%20the%20legacy%20MII%20and%20Rel-18%20MII.docx) [C135] Conflict between the legacy MII and Rel-18 MII CATT, CBN, Huawei, HiSilicon, Samsung, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: RAN2 to discuss whether it is a valid case that one cell can broadcast nonServingCellMII in SIB1 but doesn’t broadcast SIB21.

Proposal 2: If P1 is agreed, to address the conflict between the legacy R17 MII reporting and Rel-18 MII reporting for shared processing, Down select between the options for the spec change

Option 1: separate the handling of legacy R17 MII reporting and Rel-18 MII reporting for shared processing, TP in annex 1 is adopted.

Option 2: enhance the wording in the current procedure text, the TP in annex 2 is adopted.

DISCUSSION:

* Huawei agrees it is a valid case and would like to fix this via Option 2. Option 1 executes the procedure twice, which is a problem.
* Nokia thinks this deployment scenario is not practical, it is a corner case. vivo agrees, we should assume Rel-18 MBS is deployed over a Rel-17 MBS network, so SIB21 should be broadcast.
* ZTE believes the scenario is valid as we have non-serving cell reception. ZTE prefers Option 2 to sovle the issue.
* CATT also thinks this is valid case to support shared processing.
* Ericsson thinks the serving cell may just provide the indication and not provide MBS broadcast. NEC alsop believes scenario is valid, prefer option 2.
* Address the scenario described in the paper by adopting TP in annex 2.

[R2-2400616](file:///D:\3GPP\Extracts\R2-2400616%20Discussion%20about%20RIL%20Z657%20(on%20SDAP%20operation%20for%20multicast%20reception%20in%20RRC_INACTIVE).doc) Discussion about RIL Z657 (on SDAP operation for multicast reception in RRC\_INACTIVE) ZTE, Sanechips discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 For Rel-18 multicast reception in RRC\_INACTIVE, SDAP entity should be released and established, in case of PTM configuration update via MCCH in the same cell or during mobility.

Proposal 2 RAN2 to discuss whether to notify upper layer about the user plane resources release/establishment when PTM configuration is updated via MCCH or during mobility to new cell.

DISCUSSION:

* Ericsson asks what problem are we trying to solve.
* ZTE would like to have clearer specifications.
* CATT thinks there is a note that how to modification of MRBs is handled is up to UE implementation.
* ZTE clarifies their change is for establishment/release, not modification.
* Huawei thinks current specs is clear. For P2, prefer to keep the current behaviour as this was requested by CT1. Ericsson agrees.
* LGE indicates that SDAP can only be released in RRC CONNECTED.
* Z657 is rejected. Can be revisited next meeting if issues are found.

[R2-2401359](file:///D:\3GPP\Extracts\R2-2401359%20RIL%20E097%20MBS%20quality%20threshold.docx) RIL E097 MBS quality threshold Ericsson discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 ThresholdMBS-r18 can be configured with RSRP or RSRQ or both.

DISCUSSION:

* Huawei clarifies this was sequence at the beginning but then was changed to choice based on the received comments. But Huawei have no strong view.
* ZTE, CATT supports the change.
* vivo asks what the UE behaviour is when both parameters are configured.
* ThresholdMBS-r18 can be configured with RSRP or RSRQ or both.
* If both are configured UE resumes if any threshold is met.

[R2-2400373](file:///D:\3GPP\Extracts\R2-2400373%20%5bS745%5d%20%5bS746%5d%20Optionality%20of%20Multicast%20MCCH%20Configuration%20in%20SIB24.docx) [S745] [S746] Optionality of Multicast MCCH Configuration in SIB24 Samsung discussion Rel-18

Proposal 1A: RAN2 to agree to [S745]: Keep multicastMCCHConfig in SIB24 as ‘optional’.

Proposal 1B: RAN2 to agree to [S746]: Use ‘and/or’ for MCCH and MTCH CFR configuration in description of cfr-ConfigMCCH-MTCH.

Proposal 1C: Adopt the provided text proposal TP1.

Proposal 2: RAN2 further clarifies [B101] and [C136]: UE applies the multicast MCCH information acquisition procedure upon selection or reselection to a new cell providing SIB24 that includes multicastMCCH-Config. Adopt the provided text proposal TP2.

DISCUSSION:

* CATT does not support the change, thinks MCCH in SIB24 should be mandatory. Nokia shares this view.
* Samsung indicates that in case P1 is not agreed, then we cannot support MCCH-less cell as there is no way to provide CFR to the UE. QCM agrees with the proposal and the reasoning from Samsung.
* Ericsson agrees with the proposal.
* Huawei is OK with the proposal. Another option is to provide empty MCCH configuration.
* MCCH configuration in dedicated signalling should be optional. To be decided in CR review whether we make this optional in SIB24 or have a condition or have an empty MCCH etc.

**Other RIL related**

[R2-2400227](file:///D:\3GPP\Extracts\R2-2400227%20B103%20TP%20on%20stop%20monitoring%20MCCH%20when%20entering%20RRC_CONNECTED%20state.doc) [B103] TP on stop monitoring MCCH when entering RRC\_CONNECTED state Lenovo discussion Rel-18

[R2-2400479](file:///D:\3GPP\Extracts\R2-2400479%20%5bW010%5d%20Discussion%20on%20corrections%20for%20RRC%20resume%20after%20RRCReject.docx) [W010] Discussion on corrections for RRC resume after RRCReject NEC discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401088](file:///D:\3GPP\Extracts\R2-2401088%20RIL%20issues%20on%20multicast.docx) RIL issues on multicast LG Electronics Inc. discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401173](file:///D:\3GPP\Extracts\R2-2401173%20%5bJ001%5d%20%5bC131%5d%20%5bJ006%5d%20%5bC140%5d%20%20Control%20plane%20details%20for%20multicast%20reception%20in%20RRC_INACTIVE%20state.docx) [J001] [C131] [J006] [C140] Control plane details for multicast reception in RRC\_INACTIVE state Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401175](file:///D:\3GPP\Extracts\R2-2401175%20%5bJ003%5d%5bS749%5d%20MRB%20handling%20in%20Inactive.docx) [J008][J003][S749] Multicast MRB handling for Inactive state Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_MBS\_enh-Core

**Non-RIL related**

[R2-2400109](file:///D:\3GPP\Extracts\R2-2400109%20Open%20issues%20on%20control%20plane%20for%20multicast%20reception%20in%20RRC_INACTIVE%20state.docx) Open issues on control plane for multicast reception in RRC\_INACTIVE state TD Tech, Chengdu TD Tech discussion Rel-18

[R2-2400770](file:///D:\3GPP\Extracts\R2-2400770%20CP%20Corrections%20for%20Multicast%20Reception.docx) CP Corrections for Multicast Reception Samsung discussion Rel-18

[R2-2400941](file:///D:\3GPP\Extracts\R2-2400941_Clarification%20on%20UE%20operations%20related%20to%20MRB%20configuration_v0.doc) Clarification on UE operations red to MRB configuration Apple discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401397](file:///D:\3GPP\Extracts\R2-2401397%20Remaining%20Issues%20on%20UE%20triggered%20RRC%20Resumption%20RRC%20Resumption.docx) Remaining Issues on RSRP/RSRQ-based RRC Resumption vivo discussion Rel-18 NR\_MBS\_enh-Core

#### 7.11.2.2 User plane corrections

Including corrections to TS 38.321 and TS 38.323.

**State transition issues**

[R2-2401260](file:///D:\3GPP\Extracts\R2-2401260%20Remaining%20UP%20issues%20for%20multicast%20reception%20in%20RRC_INACTIVE.docx) Remaining UP issues for multicast reception in RRC\_INACTIVE Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: To support delta configuration during RRC resume, the UE should store the original MRB configuration received before being released to RRC\_INACTIVE, similar as legacy.

Proposal 2: RAN2 to confirm that the gNB needs to know whether to configure the initial PDCP variable when an RRC\_INACTIVE UE resumes.

* P1 to be discussed in Sharp’s offline

DISCUSSION on P2:

* Nokia agrees with the intention of this proposal.
* vivo thinks the network can always configure the variable.
* ZTE will know based on whether there is a sync in an RNA.
* LGE agrees with Huawei proposal as this is a bout operation in mixed R17 and R18 network.
* Samsung has sympathy for P2, but wonders whether there is an impact on specifications.
* Huawei thinks the NW does not know why the UE was released to INACTIVE by the source gNB.
* RAN2 confirms that the gNB needs to know whether to configure the initial PDCP variable when an RRC\_INACTIVE UE resumes. FFS whether this has specs impact.

Offline [Huawei]

* [AT125][605][eMBS] Initial PDCP variable (Huawei)

Scope: Discuss whether there is any specifications impact from the agreement that the gNB needs to know whether to configure the initial PDCP variable when an RRC\_INACTIVE UE resumes.

Intended outcome: Report in [R2-2401656](file:///D:\3GPP\Extracts\R2-2401656%20Summary%20of%20%5bAT125%5d%5b605%5d%5beMBS%5d%20Initial%20PDCP%20variable%20(Huawei).docx)

Deadline: Report available for CB session on Thursday

[R2-2401656](file:///D:\3GPP\Extracts\R2-2401656%20Summary%20of%20%5bAT125%5d%5b605%5d%5beMBS%5d%20Initial%20PDCP%20variable%20(Huawei).docx) Summary of [AT125][605][eMBS] Initial PDCP variable (Huawei) Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

* Revised in R2-2401660 to include the comment from Nokia provided via reflector

Proposal: NW always configures the PDCP variable when UE resumes if the UE has joined the multicast session. The exact wording of spec change can be discussed during CR review.

DISCUSSION:

* Nokia thinks we optimized a lot transition from Connected to Inactive but for the other way around we give up many things.
* Nokia asks if we now need to update Rel-17 behaviour.
* Vivo suggests to add: “UE which is configured with Inactive multicast reception”
* NW always configures the initial PDCP variable for all multicast MRBs when the UE which is configured with Inactive multicast reception resumes RRC connection.
* The exact wording of spec change can be discussed during CR review.

R2-2401660 Summary of [AT125][605][eMBS] Initial PDCP variable (Huawei) Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401058](file:///D:\3GPP\Extracts\R2-2401058%20MAC%20Reset%20when%20switching%20to%20RRC_CONNECTED.docx) MAC Reset when switching to RRC\_CONNECTED Sharp discussion

Proposal 1 Upon receiving RRCResume or RRCSetup message, for UE configured with multicast reception in RRC\_INACTIVE, it should stop DRX timer for the multicast reception in RRC\_INACTIVE, flush HARQ buffer and initialize NDI.

Proposal 2 For UE configured with multicast reception in RRC\_INACTIVE, UE should not perform MAC reset when receiving an RRCReject message.

[R2-2401363](file:///D:\3GPP\Extracts\R2-2401363%20MBS%20MAC%20Reset.docx) MAC Reset in State Transition from RRC\_INACTIVE to RRC\_CONNECTED Samsung discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: During state transition from RRC\_INACTIVE to RRC\_CONNECTED (i.e. RRC Resumption), MAC is reset.

DISCUSSION on P1 from [R2-2401058](file:///D:\3GPP\Extracts\R2-2401058%20MAC%20Reset%20when%20switching%20to%20RRC_CONNECTED.docx) and P1 from [R2-2401363](file:///D:\3GPP\Extracts\R2-2401363%20MBS%20MAC%20Reset.docx):

* Nokia asks whether this means we do MAC reset?
* Sharp indicates this is partial MAC reset, we should not stop TAT.
* Samsung thinks we can align the behaviour with cell reselection case and we can do full MAC reset.
* vivo think there is no need for any proposal, but having full MAC reset is acceptable.
* Apple agrees performing MAC reset is cleanest and safest. LGE agrees.
* For UEs configured with multicast reception in INACTIVE: during state transition from RRC\_INACTIVE to RRC\_CONNECTED (i.e. RRC Resumption), MAC is reset.

DISCUSSION on P2 from [R2-2401058](file:///D:\3GPP\Extracts\R2-2401058%20MAC%20Reset%20when%20switching%20to%20RRC_CONNECTED.docx):

* LGE agrees with P2 but this should be only for RRCReject related to resume due to multicast.
* Nokia thinks it makes sense, perhaps not critical.
* For UE configured with multicast reception in RRC\_INACTIVE, UE should not perform MAC reset when receiving an RRCReject message after sending RRCResume for multicast reception.

**MAC clarifications**

[R2-2400265](file:///D:\3GPP\Extracts\R2-2400265%20Corrections%20to%2038.321%20for%20eMBS.docx) Corrections to 38.321 for eMBS CATT, CBN, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

[R2-2400617](file:///D:\3GPP\Extracts\R2-2400617%20Misc%20CR%20to%2038.321%20for%20NR%20MBS%20enh.docx) Misc CR to 38.321 for NR MBS enh ZTE, Sanechips CR Rel-18 38.321 18.0.0 1744 - F NR\_MBS\_enh-Core

[R2-2401126](file:///D:\3GPP\Extracts\R2-2401126%20Discussion%20on%20PTM%20retransmission%20reception%20with%20HARQ%20feedback%20disabled.docx) Discussion on PTM retransmission reception with HARQ feedback disabled ASUSTeK discussion Rel-18 38.321 NR\_MBS\_enh-Core

**PDCP clarifications**

[R2-2400556](file:///D:\3GPP\Extracts\R2-2400556%20Initialization%20of%20PDCP%20State%20Variable%20for%20MBS%20reception%20in%20RRC%20INACTIVE.docx) Initialization of PDCP State Variable for MBS Multicast reception in RRC INACTIVE Nokia Corporation discussion NR\_MBS\_enh-Core

DISCUSSION:

- Xiaomi thinks it is already clear from RRC specifications and this is not needed.

- CATT, LGE agrees with Xiaomi.

- vivo thinks no need to change PDCP, we can think whether to clarify in RRC, if needed.

* Not pursued (no changes in PDCP due to this)

### 7.11.3 Shared processing corrections

Including addressing RRC/ASN.1 review comments.

[R2-2400375](file:///D:\3GPP\Extracts\R2-2400375%20Correction%20for%20Shared%20Processing.docx) Correction for Shared Processing Samsung discussion Rel-18

Proposal 1A: When non-servingCellMII is provided in SIB1 by the PCell, UE initiates transmission of MII during ReconfigurationWithSync and Reestablishment scenarios (i.e. for the cases when MII was initiated during 1 second preceding reception of the RRCReconfiguration message or RRCReesablihment message, or after receiving RRCReconfiguration applied due to conditional reconfiguration execution).

Proposal 1B: Adopt text proposal TP1 and TP2 as provided.

DISCUSSION:

* LGE agrees with the proposals.
* When non-servingCellMII is provided in SIB1 by the PCell, UE initiates transmission of MII during ReconfigurationWithSync and Reestablishment scenarios (i.e. for the cases when MII was initiated during 1 second preceding reception of the RRCReconfiguration message or RRCReesablihment message, or after receiving RRCReconfiguration applied due to conditional reconfiguration execution).
* Adopt text proposal TP1 and TP2 as provided.

[R2-2401261](file:///D:\3GPP\Extracts\R2-2401261%20Discussion%20on%20shared%20processing%20for%20MBS%20broadcast%20and%20unicast%20reception.docx) Discussion on shared processing for MBS broadcast and unicast reception Huawei, HiSilicon discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: RAN2 confirms that SCS and CFR information should be reported together when both are available.

Proposal 2: The gNB should indicate the UE in case some bands in the band filter are only requested for MBS reception from non-serving cell in UE capability enquiry procedure.

* RAN2 confirms that SCS and CFR information should be reported together when both are available. No spec change.

DISCUSSION on P2:

* Ericsson thinks this is an optimization to reduce capabilities size. Nokia, QCM, Samsung agrees.
* P2 is not pursued.

### 7.11.4 UE capabilities

Including corrections red to UE capabilities for 38.306 or 38.331 and remaining issues for UE capabilities, e.g. whether the functionality of RRC connection resumption triggering due to the reception quality below the configured threshold is mandatory/optional capability.

**Remaining issues for capabilities (resumption due to bad quality, intra-slot TDM)**

[R2-2400126](file:///D:\3GPP\Extracts\R2-2400126%20Remaining%20Issues%20on%20UE%20Capabilities%20for%20eMBS.docx) Remaining Issues on UE Capabilities for eMBS vivo discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: Define the functionality of RRC connection resumption triggering due to the reception quality below the configured threshold (i.e. RSRP-RSRQ-MulticastResume-r18) as optional with capability signaling, per UE.

Proposal 2: If Proposal 1 is agreeable, the UE indicating support of RSRP-RSRQ-MulticastResume-r18 shall also indicate support of multicastInactive-r18 for at least one DL feature set.

Proposal 3: Intra-slot TDMed unicast/broadcast/multicast PDSCHs in RRC\_INACTIVE state are not supported in Rel-18 (i.e. Intra-slot TDMed multicast MTCH PDSCH and unicast DTCH/broadcast MTCH/multicast MTCH PDSCH in RRC\_INACTIVE state is not supported).

[R2-2401355](file:///D:\3GPP\Extracts\R2-2401355%20UE%20capability%20of%20MBS%20quality%20threshold.docx) UE capability of MBS quality threshold Ericsson, Qualcomm Incorporated, AT&T, FirstNet discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 For a UE supporting multicastInactive-r18 it is optional to support ThresholdMBS-r18, except it is mandatory for a Mission Critical UE supporting multicastInactive-r18.

Proposal 2 Introduce UE capability signalling for ThresholdMBS-r18 per FS.

DISCUSSION on capability for quality-based resume:

* vivo suggests to follow Ericsson proposal as a compromise.
* Huawei would like to make sure it is clear in specs what we mean by “UE supporting mission critical services”
* For a UE supporting multicastInactive-r18 it is optional to support ThresholdMBS-r18, except it is mandatory for a Mission Critical UE supporting multicastInactive-r18.
* Introduce UE capability signalling for ThresholdMBS-r18 per FS.
* We use TP in [R2-2401355](file:///D:\3GPP\Extracts\R2-2401355%20UE%20capability%20of%20MBS%20quality%20threshold.docx) as a baseline, but we can further clarify what “mission critical services” means, if needed.

DISCUSSION on intra-slot TDM:

* Huawei thinks we can keep it optional, no need to exclude it.
* Ericsson has no strong view.
* QCM prefers not to support, if to be supported, it should be a new capability.

Offline on if we agree: Intra-slot TDMed unicast/broadcast/multicast PDSCHs in RRC\_INACTIVE state are not supported in Rel-18 (i.e. Intra-slot TDMed multicast MTCH PDSCH and unicast DTCH/broadcast MTCH/multicast MTCH PDSCH in RRC\_INACTIVE state is not supported).

Offline report:

* Vivo reports that it seems acceptable to all companies to have a separate capability for intra-slot TDM for MC reception in Inactive
* A new optional UE capability is introduced for Intra-slot TDMed unicast/broadcast/multicast PDSCHs in RRC\_INACTIVE state
* Send an LS to RAN1 to inform them about this (vivo)
* [AT125][608][eMBS] LS to RAN1 (vivo)

Scope: LS to RAN1 on intra-slot TDM

Intended outcome: Approved LS in R2-2401661

Deadline: Friday 2024-03-01 0800

R2-2401661

[CB]

**Clarifications**

[R2-2401356](file:///D:\3GPP\Extracts\R2-2401356%20MBS%20capabilities.docx) MBS capabilities Ericsson discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 RAN2 to discuss whether the multicast maximum modulation order, dynamic slot repetitions and rate matching capabilities also apply in RRC\_INACTIVE or new capabilities should be introduced.

Proposal 2 Clarify for multicast maximum modulation order, dynamic slot repetitions and rate matching capabilities that “For the UE indicating support of multicastInactive-r18, this capability is also applicable to multicast reception in RRC\_INACTIVE, as specified in TS 38.331 [9]”.

Proposal 3 Clarify for intraSlotTDM-UnicastGroupCommonPDSCH-r17 that “A UE supporting this feature shall support broadcast reception as specified in clause 5.10 and/or indicate support of dynamicMulticastPCell-r17 and/or indicate support of multicastInactive-r18”.

Proposal 4 Clarify for dynamicMulticastDCI-Format4-2-r17 that “Indicates whether the UE supports DCI format 4\_2 with CRC scrambled with G-RNTI for multicast in RRC\_CONNECTED.”.

Proposal 5 Clarify for NOTE 4 of #DRBs that “For a UE supporting multicastInactive-r18 the value defines the total number of multicast MRBs in RRC\_INACTIVE”.

Proposal 6 Clarify for supportOf16DRB-RedCap-r17 that “A UE supporting this feature and multicastInactive-r18 it indicates the total number of multicast MRBs in RRC\_INACTIVE”.

Proposal 7 Clarify in 38.300 that only single layer MIMO is supported with multicast reception in RRC\_INACTIVE.

* [AT125][603][eMBS] MBS UE capabilities CRs (vivo)

Scope: Prepare and review draft 38.306 and 38.331 CRs for MBS capabilities.

Intended outcome: Draft CRs for MBS capabilities in R2-2401653 (38.306) and R2-2401654 (38.331)

Deadline: Draft CRs available for agreement via e-mail: Friday 2024-03-01 0800

R2-2401921

R2-2401653

R2-2401654

**[CB]**

[R2-2400244](file:///D:\3GPP\Extracts\R2-2400244%20Discussion%20on%20UE%20capability%20remaining%20issues%20for%20eMBS.docx) Discussion on UE capability remaining issues for eMBS MediaTek discussion Rel-18 NR\_MBS\_enh-Core

[R2-2400267](file:///D:\3GPP\Extracts\R2-2400267%20Discussion%20on%20UE%20Capability%20for%20eMBS.docx) Discussion on UE Capability for eMBS CATT, CBN, China Broadnet discussion Rel-18 NR\_MBS\_enh-Core

[R2-2400300](file:///D:\3GPP\Extracts\R2-2400300.doc) Discussion on eMBS UE capabilities Spreadtrum Communications discussion Rel-18

[R2-2400316](file:///D:\3GPP\Extracts\R2-2400316%20Consideration%20on%20the%20open%20issue%20for%20eMBS%20capabilities.docx) Consideration on the open issue for eMBS capabilities Beijing Xiaomi Software Tech discussion Rel-18

[R2-2401087](file:///D:\3GPP\Extracts\R2-2401087%20UE%20capability%20for%20reception%20quality%20based%20RRC%20resume.docx) UE capability for reception quality based RRC resume LG Electronics Inc. discussion Rel-18 NR\_MBS\_enh-Core

## 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: 3 tdocs

### 7.14.1 Organizational

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

**LS in**

[R2-2400042](file:///D:\3GPP\Extracts\R2-2400042_R3-237997.doc) LS on QMC support in RRC\_IDLE and RRC\_INACTIVE (R3-237997; contact: ZTE) RAN3 LS in Rel-18 NR\_QoE\_enh-Core To:RAN2

* Noted

[R2-2400043](file:///D:\3GPP\Extracts\R2-2400043_R3-238003.docx) Support for MCE ID (R3-238003; contact: Ericsson) RAN3 LS in Rel-18 NR\_QoE\_enh-Core To:SA5, RAN2 Cc:SA3

* Noted

[R2-2400214](file:///D:\3GPP\Extracts\R2-2400214_S5-240021.docx) Reply LS on Support for MCE ID (S5-240021; contact: Ericsson) SA5 LS in Rel-18 NR\_QoE\_enh-Core To:RAN3 Cc:RAN2, SA3

* Noted

[R2-2400070](file:///D:\3GPP\Extracts\R2-2400070_S2-2313777.docx) Reply LS on QMC support in RRC\_IDLE and RRC\_INACTIVE (S2-2313777; contact: ZTE) SA2 LS in Rel-18 NR\_QoE\_enh-Core To:RAN3 Cc:RAN2, SA5, SA3

* Noted

[R2-2400087](file:///D:\3GPP\Extracts\R2-2400087_S4-231905.docx) LS Reply on area scope for QoE measurements (S4-231905; contact: Huawei) SA4 LS in Rel-18 eQoE, NR\_QoE\_enh-Core To:RAN2 Cc:RAN3, SA5

* Noted

[R2-2400090](file:///D:\3GPP\Extracts\R2-2400090_S5-238098.docx) Reply LS on area scope for QoE measurements (S5-238098; contact: Ericsson) SA5 LS in Rel-18 eQoE, NR\_QoE\_enh-Core To:RAN2 Cc:RAN3, SA4

* Noted

DISCUSSION:

* Nokia thinks we should reply to SA5 because SA5 thinks we will use LocationFilter.
* Huawei thinks this is on LocaitonFilter, but we do not use it for R18 in QOE.
* CATT would also like to reply and add RAN3 in cc.
* QCM would like to add SA4 in cc.

**Draft reply LS**

[R2-2400787](file:///D:\3GPP\Extracts\R2-2400787%20-%20Proposal%20for%20Reply%20LS%20on%20area%20scope%20for%20QoE%20measurements.docx) Proposal for Reply LS on area scope for QoE measurements Ericsson discussion Rel-18 NR\_QoE\_enh-Core

* [AT125][606][ QoE] Reply LS to SA5 on area scope (Ericsson)

Scope: Reply LS to SA5 on area scope

Intended outcome: Agreed LS

Deadline: Friday 2024-03-01 0800 for e-mail approval

R2-2401658

**Rapporteur CRs**

[R2-2400201](file:///D:\3GPP\Extracts\R2-2400201%20Stage-2%20CR%20for%20Rel-18%20NR%20QoE%20enhancement.docx) Stage-2 CR for Rel-18 NR QoE enhancement China Unicom, Huawei, HiSilicon, Nokia, Nokia Shanghai Bell CR Rel-18 38.300 18.0.0 0777 - F NR\_QoE\_enh-Core

* Change formatting for the title of the voided section to proper 3GPP style
* Revised in R2-2401659 with the change above.

[R2-2401131](file:///D:\3GPP\Extracts\R2-2401131%20CR%20for%20RAN%20visible%20QoE%20measurements%20and%20reporting%20in%20NR-DC.docx) CR for RAN visible QoE measurements and reporting in NR-DC Nokia, Nokia Shanghai Bell, China Unicom CR Rel-18 37.340 18.0.0 0383 - F NR\_QoE\_enh-Core

* Agreed

DISCUSSION:

* QCM indicates that RVQoE is kept in 38.300 for NR-DC.
* China Unicom clarifies that they coordinated with R3 colleagues and we can do it RAN2 way.

R2-2401659 Stage-2 CR for Rel-18 NR QoE enhancement China Unicom, Huawei, HiSilicon, Nokia, Nokia Shanghai Bell CR Rel-18 38.300 18.0.0 0777 1 F NR\_QoE\_enh-Core

* Agreed unseen

[R2-2400783](file:///D:\3GPP\TSGR2\TSGR2_125\docs\R2-2400783.zip) RIL issues for QoE Ericsson discussion Rel-18 NR\_QoE\_enh-Core

* PropAgree/PropReject conclusions are endorsed, except C319, E046, E006, S682

DISCUSSION on Z454:

* Clarification from the RRC rapporteur and ZTE: The intention is to allow MN to resume SRB5 in case it was previously configured in the UE by SN.
* With this understanding China Unicom is OK with the proposed resolution.

[R2-2400782](file:///D:\3GPP\Extracts\R2-2400782%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 18.0.0 4555 - F NR\_QoE\_enh-Core

* Endorsed as a baseline for further agreements from this meeting (except resolutions for RILs C319, E046, E006, S682)
* Can also discuss the maximum number of app layer reports

- China Unicom asks why maxNrofAppLayerReports-r18 is set to 32

- Huawei asks if we can still comment on how the changes were done. Ericsson confirms.

### 7.14.2 QoE measurements in RRC IDLE INACTIVE

Corrections red to QoE measurements in RRC IDLE/INACTIVE, including addressing RRC/ASN.1 review comments red to QoE support in RRC IDLE/INACTIVE.

**Open issues and “ToDo” RILs**

[R2-2400539](file:///D:\3GPP\Extracts\R2-2400539%20Remaining%20issues%20on%20QoE%20for%20RRC%20IDLE%20and%20INACTIVE.docx) Remaining issues on QoE for RRC IDLE and INACTIVE ZTE Corporation, Sanechips discussion Rel-18 NR\_QoE\_enh-Core

Proposal 3: Introduce measConfigReportAppLayerAvailable indication in RRCReestablishmentComplete and RRCReconfigurationComplete messages, to indicate that there are available QoE reports/configuration applicable for idle/inactive state in UE.

Related to RIL E003

DISCUSSION:

* Ericsson, CATT, Huawei supports the proposal.
* Introduce measConfigReportAppLayerAvailable indication in RRCReestablishmentComplete and RRCReconfigurationComplete messages, to indicate that there are available QoE reports/configuration applicable for idle/inactive state in UE.

[R2-2401132](file:///D:\3GPP\Extracts\R2-2401132%20Discussion%20on%20RRC%20open%20issues%20RIL%20%5bN013%5d%20and%20%5bE098%5d.docx) Discussion on RRC open issues RIL [N013] and [E098] Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: The idleInactiveReportAllowed flag is only checked by the UE in the first RRCReconfiguration message when the UE has transited from RRC\_IDLE/RRC\_INACTIVE to RRC\_CONNECTED state.

Proposal 2: The 48 hours for when the UE may discard application layer measurement configuration and reports should be started upon UE entering RRC IDLE/INACTIVE.

DISCUSSION on P1:

* CATT is related to issues with C319, CATT agrees with the proposal from Nokia.
* Ericsson clarifies this was rejected because it is ambiguous what “first” message means and we save only 1 bit.
* Huawei agrees with Ericsson, is this first message with the flag or in general?
* ZTE also has doubts about it and asks what we do with reestablishment.
* Samsung thinks it is optional so there is no overhead difference.
* Nokia indicates we may need to update the field description if we require it to be always provided
* N013 is rejected
* Can check whether the field description of idleInactiveReportAllowed needs to be updated

DISCUSSION on P2:

* Ericsson thinks we should not count the time in INACTIVE, it should be applicable only to IDLE. Otherwise there is a misalignement between the UE and the NW.
* China Unicom thinks in INACTIVE configuration should be kept, but reports can be discarded.
* CATT think the timer should only be started when the UE receives the report and the timer is restarted after reception of each report.
* Ericsson would like to keep it simple.
* QCM agrees with Ericsson. We need also to decide where to stop the timer, e.g. when UE goes to RRC CONNECTED.
* CATT indicates that the timer should be stopped when the report can be retrieved.
* Huawei asks if we need to clarify in specs that the UE keep QoE configurations when the NW did not retrieve the reports. Ericsson thinks we can check offline, specs might already capture this.
* The 48 hours for when the UE may discard application layer measurement configuration and reports should be started by the UE upon UE entering RRC IDLE.
* The timer is stopped when the UE goes from RRC IDLE to RRC CONNECTED

[R2-2401423](file:///D:\3GPP\Extracts\R2-2401423%20QoE%20report%20discarding%20%5bH706%5d.docx) QoE report discarding [H706] Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: The UE behaviour for handling the buffered QoE reports once the UE’s buffer becomes full is clarified according to the TP in the Annex, i.e.:

1. The behaviour of the UE when the QoE priorities are not configured is captured within the procedural text I a way ensuring consistent and clear UE behaviour.

2. It is clarified that the UE only frees as much memory as required to store the newly arrived QoE report.

DISCUSSION:

* Ericsson agrees with the intention, but the TP may need to be modified as there are other changes for the same part.
* CATT agrees with the intention and would like to clarify.
* QCM thinks we do not have to specify how much memory UE needs to free.
* Huawei thinks we can discuss detailed TP offline.
* The UE behaviour for handling the buffered QoE reports once the UE’s buffer becomes full is clarified, i.e.:
  + - The behaviour of the UE when the QoE priorities are not configured is captured within the procedural text in a way ensuring consistent and clear UE behaviour.

[R2-2401105](file:///D:\3GPP\Extracts\R2-2401105%20%5bC322%5dDiscussion%20on%20how%20to%20handle%20the%20QoE%20report%20generated%20after%20UE%20entering%20RRC_CONNECTED%20state.docx) [C322]Discussion on how to handle the QoE report generated after UE entering RRC\_CONNECTED state CATT discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: When UE returns to RRC\_CONNECTED state but the stored QoE reports/configurations have not been retrieved, UE should continue to store the new generated QoE report for broadcast service.

* When UE returns to RRC\_CONNECTED state but the stored QoE reports/configurations have not been retrieved, UE should continue to store the new generated QoE report for broadcast service.

[R2-2401425](file:///D:\3GPP\Extracts\R2-2401425%20The%20need%20of%20configForRRC-IdleInactive%20%5bH716%5d.docx) The need of configForRRC-IdleInactive [H716] Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: The applicability of the QoE configuration to RRC IDLE/INACTIVE is explicitly indicated by the presence of appLayerIdleInactiveConfig-r18 in AppLayerMeasConfig.

Proposal 2: configForRRC-IdleInactive-r18 parameter is removed from the specifications.

DISCUSSION:

* CATT, Ericsson agree with the proposals.
* The applicability of the QoE configuration to RRC IDLE/INACTIVE is explicitly indicated by the presence of appLayerIdleInactiveConfig-r18 in AppLayerMeasConfig.
* configForRRC-IdleInactive-r18 parameter is removed from the specifications.

[R2-2401106](file:///D:\3GPP\Extracts\R2-2401106%20%5bC325%5dDiscussion%20on%20how%20to%20configure%20UE%20to%20report%20QoE%20session%20status.docx) [C325]Discussion on how to configure UE to report QoE session status CATT discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: In order to guarantee UE can send the session status to network when UE returns to RRC\_CONNECTED state, for each QoE measurement configured with configForRRC-IdleInactive, the transmissionOfSessionStartStop should always be configured and set the value to true.

DISCUSSION:

* ZTE thinks this is up to NW implementation, no need for the restriction.
* Ericsson thinks RAN3 agreements are not correct (that UE shall always send it). It should be up to NW implementation.
* CATT thinks in Rel-18 session status may be always needed.
* Nokia is OK with RAN3 agreements, but we don’t need this change.
* QCM thinks we can rely on NW implementation/configuration.
* C325 is rejected

**Other RILs and non-RIL related**

[R2-2401079](file:///D:\3GPP\Extracts\R2-2401079.doc) Discussion on E006, S682, S683, and S684 Samsung discussion Rel-18 NR\_QoE\_enh-Core

DISCUSSION:

* Samsung clarifies that the way S682 was captured in the rapporteur CR does not cover all the cases.
* Ericsson admits some updates may be needed.
* The exact implementation of S682/E006 in the RRC can be further modified if needed to cover all the cases, as described in the document.

[R2-2400784](file:///D:\3GPP\Extracts\R2-2400784%20-%20Open%20issues%20for%20QoE%20measurements.docx) Open issues for QoE measurements Ericsson discussion Rel-18 NR\_QoE\_enh-Core

Proposal 2 MBS Communication Service Type should be sent to UE AS layer by RRC signaling.

Proposal 3 The UE AS layer is responsible for ensuring that the QoE measurements are performed for the configured MBS mode.

Proposal 4 Send an LS to CT1, asking CT1 to convey MBS mode information from the UE AS layer to the UE application layer by means of an AT command. (A draft LS is included in the Annex.1.)

DISCUSSION:

* ZTE thinks we have discussed this before and the NW can decide to include or not include config for IDLEINACTIVE based on the indication received in RAN.
* Ericsson thinks the NW is not aware of the MBS mode used by the UE.
* CATT thinks in RAN2 we do not have to specify this mode in the UE. If RAN3 wants UE to know the mode, then they should let us know.
* QCM thinks it could also be added in the QoE container. Currently not convinced whether we need it at all, and if needed, whether we need it in AS layer.
* QCM thinks app layer knows the applicable MBS mode, so no need to capture it RRC.
* China Unicom agrees with ZTE, no more indication is needed.
* Understanding in RAN2 is that no additional indication about MBS mode needs to be provided to the UE. Based on the indication on RAN interface, the gNB can decide whether to include IDLE/INACTIVE QoE configuration or not.

[R2-2400785](file:///D:\3GPP\Extracts\R2-2400785%20-%20Further%20RIL%20issues%20related%20to%20QoE%20measurements.docx) Further RIL issues red to QoE measurements Ericsson discussion Rel-18 NR\_QoE\_enh-Core

[R2-2401103](file:///D:\3GPP\Extracts\R2-2401103%20Discussion%20on%20remaining%20issues%20for%20QoE%20measurements%20in%20RRC%20IDLE%20and%20INACTIVE%20state.docx) Discussion on remaining issues for QoE measurements in RRC IDLE and INACTIVE state CATT discussion Rel-18 NR\_QoE\_enh-Core

[R2-2401159](file:///D:\3GPP\Extracts\R2-2401159-Open%20issues%20on%20IDLE%20and%20Inactive%20state%20QoE.docx) Remaining issues on QoE for IDLE and Inactive state Qualcomm Incorporated discussion NR\_QoE\_enh-Core

[R2-2401426](file:///D:\3GPP\Extracts\R2-2401426%20Discussion%20on%20open%20issues%20for%20QoE%20measurements%20in%20RRC_IDLE%20and%20INACTIVE.docx) Discussion on open issues for QoE measurements in RRC\_IDLE and INACTIVE Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

### 7.14.3 Support of QoE measurements for NRDC

Corrections red to QoE measurements for NR-DC, including addressing RRC/ASN.1 review comments and corrections to TS 37.340.

**RIL related**

[R2-2401424](file:///D:\3GPP\Extracts\R2-2401424%20Spare%20values%20for%20reportingSRB%20%5bH720%5d.docx) Spare values for reportingSRB [H720] Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: Remove spare values from reportingSRB-r18 and ran-VisibleReportingSRB-r18 parameters’ definitions.

DISCUSSION:

* Ericsson thinks it is always good to have some spare bits, but indeed the rule is not to add additional bits.
* CATT agrees with the proposal.
* Remove spare values from reportingSRB-r18 and ran-VisibleReportingSRB-r18 parameters’ definitions.

[R2-2401080](file:///D:\3GPP\Extracts\R2-2401080.doc) Discussion on S681 and a remaining issue in NR-DC QoE Samsung discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1. Adopt S681 to clarify QoE report retransmission considering 1) SCG change case, 2) reporting SRB, and 3) whether RRC segmentation is allowed.

Proposal 2. Add the following text in 5.3.5.4 (Secondary cell group release) in TS 38.331

- 2> discard any application layer measurement reports which were configured to be reported via SRB5 and not yet submitted to lower layers for transmission;

DISCUSSION on P1:

* Samsung thinks the RIL was accepted but the change related to reporting SRB was not captured in the rapporteur CR.
* Samsung would like to clarify that reporting leg can be modified during the handover which is not possible according to the current procedure.
* Ericsson clarifies they are OK with the intention, but perhaps some text update is still needed.
* S681 is agreed (as per rapporteur’s conclusions) and it can be verified whether it was captured properly in the rapporteur CR, and updated if needed.

DISCUSSION on P2:

* Samsung clarifies that we have agreements on this already, but it was not captured in the procedures in RRC.
* Capture the agreement in the procedural text in RRC that any application layer measurement reports which were configured to be reported via SRB5 and not yet submitted to lower layers for transmission should be discarded upon SCG release

**Stage-2**

[R2-2400540](file:///D:\3GPP\Extracts\R2-2400540%20Remaining%20issue%20on%20QoE%20measurement%20for%20NR-DC.docx) Remaining issues on QoE for NR-DC ZTE Corporation, Sanechips discussion Rel-18 NR\_QoE\_enh-Core

### 7.14.4 UE capabilities

Corrections for UE capabilities (38.306, 38.331) and remaining issues for UE capabilities for QoE, e.g. should we have any RedCap specific capabilities for QoE?

**Memory requirement for (e)RedCap**

[R2-2401152](file:///D:\3GPP\Extracts\R2-2401152.docx) Discussion on remaining open issue for QoE UE capabilities CMCC discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: Do not introduce RedCap or eRedCap specified QoE UE capabilities in Rel-18.

[R2-2401161](file:///D:\3GPP\Extracts\R2-2401161-RedCap%20UE%20QoE%20capabilities.docx) RedCap UE QoE capabilities Qualcomm Incorporated discussion NR\_QoE\_enh-Core

Proposal: RedCap and eRedCap UE have the total minimum memory size 64KB in RRC\_IDLE/RRC\_INACTIVE for QoE configuration (if UE based QoE configuraiton retrieval) and QoE measurements. It is left to UE implementation on how to allocate the memory space for QMC.

DISCUSSION:

* QCM thinks we should have less stringent requirements for RedCap, similarly as we do for SON/DMT.
* Lenovo agrees with CMCC, i.e. we can keep common requirements for all UEs. This is about the services, not about UE types. Lenovo thinks SON/MDT is completely different feature and we should not compare.
* Huawei prefers QCM’s approach as it provides more flexibility for UE implementation, but have no strong view.
* CATT thinks additional memory is needed, regardless of UE type.
* QoE memory requirements are common for (e)RedCap and non-RedCap UEs.
* [AT125][607][QoE] Draft 38.306 CR for QoE (CMCC)

Scope: Draft 38.306 CR for QoE as per the agreement from the meeting

Intended outcome: Endorsed draftCR

Deadline: Friday 2024-03-01 0800 for e-mail approval

R2-2401657

[CB]

[R2-2400541](file:///D:\3GPP\Extracts\R2-2400541%20Discussion%20on%20inter-RAT%20QoE%20continuity%20and%20UE%20capabilities.docx) Discussion on inter-RAT QoE continuity and UE capabilities ZTE Corporation, Sanechips discussion Rel-18 NR\_QoE\_enh-Core

[R2-2401081](file:///D:\3GPP\Extracts\R2-2401081.doc) Discussion on memory requirement for QoE measurement Samsung discussion Rel-18 NR\_QoE\_enh-Core

[R2-2401104](file:///D:\3GPP\Extracts\R2-2401104%20Discussion%20on%20the%20remaining%20issues%20for%20UE%20capabilities%20for%20QoE.docx) Discussion on the remaining issues for UE capabilities for QoE CATT discussion Rel-18 NR\_QoE\_enh-Core

[R2-2401427](file:///D:\3GPP\Extracts\R2-2401427%20Discussions%20on%20open%20issues%20for%20UE%20capabilities.docx) Discussions on open issues for UE capabilities Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

### 7.14.5 Other

Corrections for topics not covered in other agenda items.

**E099 (IRAT HO)**

[R2-2401133](file:///D:\3GPP\Extracts\R2-2401133%20On%20FFS%20for%20LTE%20QoE%20configurations%20release%20for%20inter-RAT%20HO%20from%20LTE%20to%20NR%20%5bE099%5d.docx) On FFS for LTE QoE configurations release for inter-RAT HO from LTE to NR [E099] Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_QoE\_enh-Core

Proposal 1: For inter-RAT Handover from LTE to NR, LTE AS layer (with RRC procedure defined in LTE spec) informs APP layer to release the “old” QoE configuration configured by source (LTE) node.

[R2-2401160](file:///D:\3GPP\Extracts\R2-2401160-QoE%20configuration%20handling%20during%20inter-RAT%20mobility.docx) QoE configuration handling during inter-RAT mobility Qualcomm Incorporated discussion NR\_QoE\_enh-Core

Proposal: Current specification already captures that all LTE QoE configurations are released at handover to NR, then specification is not needed.

DISCUSSION:

* Huawei agrees with QCM’s proposal. This is legacy issue. If we fix this, then it should be from Rel-17.
* Ericsson agrees with Nokia. General statements refer to AS configuration, but this is about app layer configuration. Nokia agrees.
* Ericsson agrees this issue exists also in previous releases.
* We do not fix this as part of R18 WI on QoE
* Proponents can bring a CR for legacy specifications to fix this

**E046 (Conditional HO enhancement)**

[R2-2400786](file:///D:\3GPP\Extracts\R2-2400786%20-%20Other%20open%20issues%20for%20QoE.docx) Other open issues for QoE Ericsson discussion Rel-18 NR\_QoE\_enh-Core

Proposal 3 At execution of a conditional handover, the UE sends the latest session status to the target gNB. (A draft CR is included in the Annex.4).

Proposal 4 At regular handover, the UE sends the latest session status to the target gNB if the session status has changed less than 1 second before the UE received the handover command. (A draft CR is included in the Annex.4).

Proposal 5 Discuss whether to correct the session status issue for CHO/HO in rel-17 also.

DISCUSSION:

* QCM thinks this is a corner case. The UE would have to store the latest session status somewhere, but there is no variable for this. This is not critical.
* Ericsson thinks the storing can be handled as in RRC IDLE/INACTIVE.
* QCM thinks there are no variables in RRC CONNECTED to store in. Ericsson thinks that can be based on UE implementation.
* ZTE thinks it could be solved by RAN3. Ericsson thinks it is complex to solve it in the network.
* Huawei thinks this is related to Rel-17 QoE.
* This should be handled as a Rel-17 correction

[R2-2401428](file:///D:\3GPP\Extracts\R2-2401428%20Other%20QoE%20open%20issues.docx) Other QoE open issues Huawei, HiSilicon discussion Rel-18 NR\_QoE\_enh-Core

**Stage-2 correction**

[R2-2401493](file:///D:\3GPP\Extracts\R2-2401493%20How%20to%20handle%20the%20collision%20of%20handling%20of%20QoE%20configuration%20during%20IRATHO%20in%20stage%202%20spec.docx) How to handle the collision of handling of QoE configuration during IRATHO in stage 2 spec CATT discussion Rel-18 NR\_QoE\_enh-Core Late

DISCUSSION:

* ZTE thinks this change was added by RAN3 and it is related only to network behaviour.
* Intel agrees with the intention from CATT, but we cannot just remove the whole paragraph.

Offline (CATT):

* CATT reports that after discussing offline with other companies, the conclusion is we do not need these changes.

## 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.

Tdoc limitation: 1 tdoc, limitation applicable to new proposals.

**eDRX/MICO**

[R2-2400006](file:///D:\3GPP\TSGR2\TSGR2_125\docs\R2-2400006.zip) LS on the impact of supporting multicast MBS session and Broadcast MBS session for UEs using eDRX (C1-239661; contact: Nokia) CT1 LS in Rel-18 5MBS\_Ph2 To:RAN2 Cc:SA2

* Noted

[R2-2401174](file:///D:\3GPP\Extracts\R2-2401174%20eDRX%20and%20MICO%20handling.docx) eDRX and MICO Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1: In order to ensure UE monitors multicast paging correctly it is sufficient to capture proposed text in the 7.4 section:UE shall monitor paging as defined in 7.1 during upper layer configured the start time and/or scheduled activation time(s) (as specified in TS23.247 [21]) even if the UE operates in eDRX”

Proposal 2: In order to ensure UE monitors MBS broadcast correctly while configured in upper layers with MBS broadcast start times/scheduled activation times it is sufficient to capture a NOTE in the 6.2 section: UE performs procedures to receive MBS broadcast session(s) as defined in TS 38.331 [3], if upper layer is configured the start time and/or scheduled activation time(s) (as specified in TS23.247 [21]) even if the UE operates in eDRX”

[R2-2401354](file:///D:\3GPP\Extracts\R2-2401354%20MBS%20multicast%20with%20eDRX%20and%20MICO%20mode.docx) MBS multicast with eDRX and MICO mode Ericsson discussion Rel-18 NR\_MBS\_enh-Core

Proposal 1 Clarify in 38.304 that the UE starts monitoring Paging using TMGI when the upper layers deactivate MICO mode and AS layer is activated at the start/scheduled activation time.

Proposal 2 Clarify in 38.304 that when the UE has joined a multicast session and eDRX is configured, that the UE starts monitoring Paging using TMGI at the start/scheduled activation time and the UE does not use eDRX to monitor Paging.

DISCUSSION:

* Ericsson indicates the main difference between their proposal and Nokia’s is that Ericsson proposes to address this for both MICO and eDRX while Nokia only for eDRX.
* LGE thinks that MICO and MBS should be always configured together.
* Nokia thinks that MICO is transparent to AS, so it may be hard to address it in our specs.
* Ericsson thinks we need to clarify this for MICO as well. At the moment it is not specified anywhere that UE needs to monitor group Paging when receiving indication from upper layers when MICO is enabled.
* ZTE agrees we can include both MICO and eDRX.
* CATT wonders if we need to clarify that unicast paging is ignored when received within eDRX/MICO.
* QCM thinks Ericsson’ proposal is OK.
* We capture in specs that UE monitors paging as defined in 7.1 during upper layer configured the start time and/or scheduled activation time(s) (as specified in TS23.247 [21])
  + - The above applies only to Paging using TMGI
    - We do not distinguish eDRX/MICO modes when capturing this
* In order to ensure UE monitors MBS broadcast correctly while configured in upper layers with MBS broadcast start times/scheduled activation times it is sufficient to capture a NOTE in the 6.2 section, e.g.: UE performs procedures to receive MBS broadcast session(s) as defined in TS 38.331 [3], if upper layer is configured the start time and/or scheduled activation time(s) (as specified in TS23.247 [21]) even if the UE operates in eDRX
* Post-meeting e-mail discussion to draft the CRs

**MBS for RedCap - LS in**

[R2-2400040](file:///D:\3GPP\TSGR2\TSGR2_125\docs\R2-2400040.zip) Reply LS to SA2 on RedCap UE MBS Broadcast reception (R3-237959; contact: ZTE) RAN3 LS in Rel-18 TEI18 To:SA2 Cc:RAN2

* Noted

[R2-2400078](file:///D:\3GPP\TSGR2\TSGR2_125\docs\R2-2400078.zip) Reply LS on RedCap UE MBS Broadcast reception (S2-2401506; contact: Nokia) SA2 LS in Rel-18 TEI18, 5MBS\_Ph2 To:RAN2, RAN3 Cc:CT3, CT4

* Noted

**RedCap FSAI**

[R2-2400906](file:///D:\3GPP\Extracts\R2-2400906%20MBS%20FSAI%20Deployments.docx) FSAI for RedCap UE vs non-RedCap UE broadcast reception Nokia, Nokia Shanghai Bell discussion Rel-18 TEI18

**Q1**: SA2 would like to ask RAN2 to confirm the feasibility of having the same MBS FSA ID for the RedCap UEs and non-RedCap UEs in the same MBS session.

RAN2 Answer: Yes, it is feasible to broadcast the same MBS broadcast session to both RedCap UEs and non-RedCap UEs in the same MBS FSA ID and the current RAN2 specification already supports this. It is RAN2 understanding that, based on TS 23.247, how the FSAIs are used for a service intended for RedCap UE only or non-RedCap UE only or for both types of UE depends on operators’ deployment decisions and agreements with content providers.

**Q2**: If the answer to Q1 is no, could RedCap UEs and non-RedCap UEs in the same MBS session use separate MBS FSA ID(s)?

RAN2 Answer: Again, as it is a deployment choice as to how the services are mapped to FSAIs, it is also feasible for RedCap UEs and non-RedCap UEs to receive the same MBS session on separate MBS FSA IDs. In fact from RAN perspective it is beneficial to deploy the services for RedCap UE and non-RedCap UE on separate FSAIs and frequencies so that the frequencies of interest determination and MBS interest indication by UE would help with cell reselection of the RedCap and non-RedCap UEs to different frequency layers for better load management.

DISCUSSION on what to reply to SA2:

* Ericsson thinks we should reply that in Rel-17 we have no means to do load balancing (up to UE implementation to select a frequency). Ericsson does not think we need to load balance based on type of device (RedCap or non-RedCap).
* CATT does not think different FSAI for RedCap and non-RedCap is needed. Then we just need to reply to Q1 and not to Q2.
* Nokia thinks that according to SA2 they can deploy separate FSAIs and it will work in RAN with the current specs.
* QCM agrees this is feasible, but is not sure we need to delve into details. We can just have a short answer to Q1. ZTE agrees with QCM and Ericsson.
* Ericsson would like to avoid a positive reply to SA2.
* Xiaomi thinks this is up to upper layers configuration. In AS layer we do not differentiate.
* Samsung agrees with Xiaomi, it is configured via USD.
* Nokia and Huawei think the question from SA2 is whether this is feasible from AS layer point of view and it is clearly feasible.
* CATT thinks answer to Q1 is clearly that this is feasible. QCM agrees.
* Ericsson would like to add that according to our specs, if multiple frequencies provide the same MBS session, the it is up to UE to select the frequency.
* We reply that from AS signalling point of view it is feasible to configure the same MBS FSA ID for the RedCap UEs and non-RedCap UEs in the same MBS session.
* However, it is an upper layer decision what FSAIs to configure to different UEs
* We mention that currently, if multiple FSAIs provide the same MBS session, the it is up to UE to select the frequency, according to RAN2 specs.
* [AT125][609][eMBS] LS to SA2 (Nokia)

Scope: LS to SA2 on MBS FSAI

Intended outcome: Approved LS in R2-2401662

Deadline: Friday 2024-03-01 0800 for e-mail approval

R2-2401662

[CB]

[R2-2400268](file:///D:\3GPP\Extracts\R2-2400268%20Discussion%20on%20SA2%20LS%20on%20RedCap%20UE%20MBS%20Broadcast%20Reception.docx) Discussion on SA2 LS on RedCap UE MBS Broadcast Reception CATT discussion Rel-18 NR\_MBS\_enh-Core

[R2-2400615](file:///D:\3GPP\Extracts\R2-2400615%20Discussion%20on%20LS%20about%20MBS%20FSA%20ID%20for%20the%20RedCap%20UEs%20(with%20draft%20reply%20LS).doc) Discussion on LS about MBS FSA ID for the RedCap UEs ZTE, Sanechips discussion Rel-18 NR\_MBS\_enh-Core

[R2-2401016](file:///D:\3GPP\Extracts\R2-2401016%20Discussion%20on%20SA2%20LS%20on%20Redcap%20UE%20MBS%20Broadcast%20Reception.docx) Discussion on SA2 LS on RedCap UE MBS Broadcast Reception Samsung discussion

[R2-2401268](file:///D:\3GPP\Extracts\R2-2401268%20Discussion%20on%20the%20reply%20to%20SA2%20on%20RedCap%20UE%20MBS%20Broadcast%20reception.docx) Discussion on the reply to SA2 on RedCap UE MBS Broadcast reception Huawei, HiSilicon discussion Rel-18 TEI18, NR\_MBS\_enh-Core, NR\_redcap\_enh-Core

[R2-2401357](file:///D:\3GPP\Extracts\R2-2401357%20SA2%20questions%20about%20MBS%20RedCap%20CFR.docx) SA2 questions about MBS RedCap CFR Ericsson discussion Rel-18 TEI18

**RedCap FSAI - draft reply LS to SA2**

[R2-2400908](file:///D:\3GPP\Extracts\R2-2400908%20LS%20Reply%20MBS%20FSAI.docx) Reply LS on RedCap UE MBS Broadcast reception Nokia, Nokia Shanghai Bell LS out Rel-18 TEI18 To:SA2 Cc:RAN3,CT3,CT4

**RedCap CFR – stage-3 corrections**

[R2-2401266](file:///D:\3GPP\Extracts\R2-2401266%20Clarification%20on%20MBS%20search%20spaces%20configuration%20for%20Redcap.docx) Clarification on MBS search spaces configuration for Redcap Huawei, HiSilicon discussion Rel-18 TEI18, NR\_MBS\_enh-Core, NR\_redcap\_enh-Core

[R2-2401267](file:///D:\3GPP\Extracts\R2-2401267%20Correction%20on%20MBS%20search%20spaces%20configuration%20for%20Redcap.docx) Correction on MBS search spaces configuration for Redcap Huawei, HiSilicon CR Rel-18 38.331 18.0.0 4594 - F TEI18, NR\_MBS\_enh-Core, NR\_redcap\_enh-Core

[R2-2400955](file:///D:\3GPP\Extracts\R2-2400955%20Remaining%20Issue%20on%20Broadcast%20CFR%20for%20Redcap.docx) Remaining Issue on Broadcast CFR for Redcap vivo discussion Rel-18 NR\_MBS-Core, TEI18

**RedCap CFR – stage-2 corrections**

[R2-2400269](file:///D:\3GPP\Extracts\R2-2400269%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

[R2-2401358](file:///D:\3GPP\Extracts\R2-2401358%20MBS%20RedCap%20CFR%20in%20Stage%202.docx) MBS RedCap CFR in Stage 2 Ericsson discussion Rel-18 TEI18