**3GPP TSG-RAN WG2 Meeting #123bis R2-2310XXX**

**Xiamen, China, October 9th – 13th, 2023**

**Agenda Item: 7.11.1**

**Source: CMCC**

**Title:** **38.300 running CR open issues for eMBS**

**Document for: Discussion**

# Introduction

This document captures the outcome of the stage 2 Running CR open issues in the following email discussion:

* **[Post123bis][610][eMBS] 38.300 CR update and open issues (CMCC)**

Scope: Running CR update and open issues

Intended outcome:

* Endorsed running CR
* List of open issues for TS 38.300 (separate document)

Deadline: Long

Please provide your comments before Oct. 26th 1000 UTC

# Contact Points

Rapporteur encourages the participating delegates to provide their contact information in this table.

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| --- | --- | --- |
| Company | Name | Email Address |
| Nokia | Jarkko Koskela | jarkko.t.koskela2nokia.com |
| Xiaomi | Xiaofei Liu | liuxiaofei@xiaomi.com |
| Qualcomm | Umesh Phuyal | uphuyal@qti.qualcomm.com |
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# Discussion

### **Open issue 1: FFS that the above description of PTM configuration(s) delivery will be revised according to future conclusions.**

In the previous discussion, RAN2 agreed to use a mixed approach to provide PTM configuration, and furtherly, it was agreed to indicate whether one multicast service can be received in RRC\_INACTIVE and “the stop monitoring of G-RNTI”. Besides, in last RAN2 meeting, there’s agreements on the rules of MCCH’s present, then we think the FFS can be removed and description to capture the latest agreements are as following:

**Proposal 1: Remove the Editor’s note for PTM configuration description in section 16.10.5.2**

**Do you agree with Proposal 1?**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| **Nokia** | **Yes** | **But maybe not well reflected now in running CR – we have more detailed comments there** |
| **Xiaomi** | **Yes** |  |
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**Summary:**

**Based on the discussion above, Editor’s note for PTM configuration description can be removed, but it doesn’t exclude the potential rewording to the spec.**

### **Open issue 2: Whether the UE can get the initial PTM configuration via multicast MCCH.**

Since RAN2 agreed that ***if network finds it useful, the PTM configuration for the (single) serving cell can be configured to UE before the session activation, and UE stores the configuration,*** then it’s possible that UE may have no PTM configuration when it is released to RRC\_INACTIVE state. In last RAN2 meeting, it was agreed that ***if “the stop of G-RNTI monitoring” for a session is indicated in RRCRelease message and the PTM configuration of the corresponding multicast session is not included in same message, UE reads multicast MCCH(if present) upon receiving group paging that indicates to allow the multicast reception in RRC\_INACTIVE.*** Therefore, the related editor note can be removed.

**Proposal 2: Remove the Editor’s note for initial PTM configuration acquisition in section 16.10.5.2**

**Do you agree with Proposal 2?**

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| **Company** | **Yes/No** | **Comments** |
| **Nokia** | **Yes** | Yes, but now it is reflected wrong. It says only via RRC release. Please check our comment in Running CR |
| **Xiaomi** | **Yes** |  |
| **Qualcomm** | **No** | Then how is it made sure that only the UEs that have joined the session can receive the multicast? Does this mean any UE can just start reading MCCH from INACTIVE? That is not allowed and needs to be clear. |
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**Summary:**

**Based on the comments received, the Editor’s note for initial PTM configuration acquisition can be removed, but there’s some concern on how to make sure UE acquires multicast MCCH after join procedure, so we add Proposal 2a for further discussed.**

**Proposal 2a: RAN2 can further discuss how to make sure UE acquires multicast MCCH after join procedure.**

### **Open issue 3: FFS how the UE is indicated about cells being synchronized (i.e. what information the network needs to provide to the UE).**

In last meeting, agreements on how to indicate about cells being synchronized were made, then the editor’s note can be removed.

**~~Proposal 3: Remove the Editor’s note for cells’ synchronized indication in section 16.10.5.3.X.~~**

**Do you agree with Proposal 3?**

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| **Company** | **Yes/No** | **Comments** |
| **Nokia** | **No** | **see comments in running CR** |
| **Xiaomi** | **No** | **As companies still have concerns on the MRB mapping between cells where the MRB ID/LCID is different for the same MRB, we can keep it for the further discussion.** |
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**Summary:**

**Companies have concern on MRB mapping between cells within RNA, so proposal 3 is revised as following:**

**Proposal 3: MRB mapping between cells within RNA can be further discussed.**

### **Open issue 4: Whether we need something more, e.g. frequency priorities in MCCH or a solution based on FSAI.**

On frequency prioritization, RAN2 agreed to used dedicated frequencies in RRCRelease message and legacy.

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| * Dedicated frequencies in RRCRelease can be used by the NW, as legacy |

And it should be noticed that the dedicated frequency information may become invalid due to mobility or related timer expiring. From this point of view, additional mechanism can be considered, such as frequency priorities in MCCH or a solution based on FSAI. If additional mechanism is considered, extra efforts is needed. However, the time of the WI is limited, considering the potential workload and effect to SA2/SA6 (for FSAI based solution),we suggest that no extra frequency prioritization mechanism is introduced and the editor’s note can be removed.

**Option 1: No extra frequency prioritization mechanism is introduced and the editor’s note can be removed;**

**Option 2a: Frequency priorities in MCCH;**

**Option 2b: FSAI based solution for frequency prioritization.**

**~~Proposal 4: No extra frequency prioritization mechanism is introduced and the editor’s note can be removed~~**

**Do you agree with Proposal 4?**

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| **Company** | **Yes/No** | **Comments** |
| **Nokia** | **No** | Dedicated frequencies can only work well for neighbor cells of the cell sending UE to RRC\_INACITVE. For the rest of the cells of RNA, such priorities cannot be used, as the Gnb is unaware.  We propose that FSAI-based prioriziation (which is already well-developed) can be reused easily. |
| **Xiaomi** | **No** | **Agree with the Nokia that the dedicate frequencies are not enough.**  **And also, for some other cases as we indicate in the Running CR, we think the FFS should be kept and the details can be further discussed based on the contributions in next meeting.** |
| **Qualcomm** | **Yes** | We do not agree with FSAI-based prioritization. That was designed and suitable for broadcast. For multicast, the UE at least at some point must have gone to CONNECTED (to at least join the session), then dedicated frequency priorities can work (no extra prioritization needed). |
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**Summary:**

**There’s no concensus on whether to introduce extra frequency prioritization mechanism, therefore, the proposal is revised as following:**

**Proposal 4: RAN2 needs to decide whether to introduce new extra frequency prioritization mechanism. If so, which solution is used:**

**Option a: Frequency priorities in MCCH;**

**Option b: FSAI based solution for frequency prioritization.**

### **Open issue 5: Whether/how we need to address ping-pong issue.**

Based on the discussion in last meeting, most companies thought there’s no ping-pong issue, and RAN2 agreed to introduce no new measurements and measurement requirements and no TTT. Thus, the editor’s note can be removed.

**Proposal 5: Remove the Editor’s note for addressing ping-pong issue in section 16.10.5.3.X.**

**Do you agree with Proposal 5?**

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| **Company** | **Yes/No** | **Comments** |
| **Nokia** | **Yes** |  |
| **Xiaomi** | **Yes** |  |
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**Summary:**

**No comments are received, so the Editor’s note for addressing ping-pong issue is removed.**

### **Open issue 6:** **Whether we need to restrict that one CFR is completely contained within the other in this case (we should understand what the issue is otherwise).**

For multicast CFR in RRC\_INACTIVE design, RAN2 agreed that Multicast CFR in RRC\_INACTIVE and broadcast CFR can be configured differently. Since in Rel-17, the simultaneous reception of multicast and broadcast is also supported, and no there’s no restriction to the CFR configuration of multicast and broadcast, therefore, we think the same principle can be reused. Besides, even one CFR is completely contained the other one, the configuration of the two CFR may be different, the gain for the UE is not clear, therefore, we prefer to remove the editor’s note without capturing such restrictions.

**~~Proposal 6: Remove the Editor’s note for CFR in section 16.10.5.7.~~**

**Do you agree with Proposal 6 and the corresponding TP?**

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| **Company** | **Yes/No** | **Comments** |
| **Nokia** | **Yes** | Proposal is not about freq prioritization. CFR EN can be removed. |
| **Xiaomi** | **Yes** |  |
| **Qualcomm** | **No** | The following is still open FFS and need to be concluded:  **Multicast CFR in RRC\_INACTIVE and broadcast CFR can be configured differently. FFS whether we need to restrict that one CFR is completely contained within the other in this case (we should understand what the issue is otherwise).**  We have previously provided a Tdoc R2-2310476 where we explained that if multicast CFR in RRC\_INACTIVE and broadcast CFR are configured **differently**, the CFR cases agreed to be supported already ensure that both the CFRs fully contain CORESET#0. And if multicast CFR in RRC\_INACTIVE and broadcast CFR are configured differently, to enable UE to monitor a single (the larger) CFR and receive both services **without BWP switch**, one CFR needs to be completely contained within the other. Consequently, we proposed:  Proposal 1. When Multicast CFR for RRC\_INACTIVE and broadcast CFR are configured differently, one of the two CFRs is fully contained (or overlapping) with the other CFR.  Proposal 2. If multicast CFR for RRC\_INACTIVE is not configured, the default is same as CORESET#0. |
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**Summary:**

**Views on this issue are diverse, therefore, proposal is revised for further discuss:**

**Proposal 6: It can be further discussed whether we need to restrict that one CFR is completely contained within the other in case UE receive both multicast service and broadcast service in RRC\_INACTIVE state.**

### **Other open issues**

**Are there any additional open issues for discussion?**

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| --- | --- |
| **Company** | **Open issue** |
| **Nokia** | - CFR mis-alignment between RRC\_INACTIVE/CONNECTED UEs  - Details on suspension/continuation of MRBs in state change,  - Mobility from RRC\_CONNECTED source -> RRC\_INACTIVE target,  Rapp: in our understanding, mobility for a RRC\_CONNECTED UE is handover, and there’s no such cases to releas UE to RRC\_INACTIVE in the handover procedure currently. Therefore, the UE will be in RRC\_CONNECTED first and then may be releasd to RRC\_INACTIVE in the target cell. For the handover phase, Rel-17 procedure can be used, and it’s behaviour after RRC state transision is defined in Rel-18. additional handling can only be optimization but is not necessacity.  - Behavior of special UEs when receiving paging  Rapp: for special UE handling, we share similar view with Qualcomm |
| **Qualcomm** | Regarding Nokia’s suggestions: At least the behaviour of special UEs when receiving paging is already clear from previous agreements, no additional handling is needed. |
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# Conclusion

Based on the discussion above, it is proposed as following:

**Easy agreement (for removing Editor’s notes)**

**Proposal 1: Remove the Editor’s note for PTM configuration description in section 16.10.5.2**

**Proposal 2: Remove the Editor’s note for initial PTM configuration acquisition in section 16.10.5.2**

**Proposal 5: Remove the Editor’s note for addressing ping-pong issue in section 16.10.5.3.X.**

**Open issues:**

**Proposal 2a: RAN2 can further discuss how to make sure UE acquires multicast MCCH after join procedure.**

**Proposal 3: MRB mapping between cells within RNA can be further discussed.**

**Proposal 4: RAN2 needs to decide whether to introduce new extra frequency prioritization mechanism. If so, which solution is used:**

**Option a: Frequency priorities in MCCH;**

**Option b: FSAI based solution for frequency prioritization.**

**Proposal 6: It can be further discussed whether we need to restrict that one CFR is completely contained within the other in case UE receive both multicast service and broadcast service in RRC\_INACTIVE state.**