**3GPP TSG-RAN WG2 Meeting #116 bis-e R2-220xxxx**

E-Conference, 1st – 12th Nov. 2021

**Agenda item: 8.3.1**

**Source: vivo**

**Title:**  **[Post116bis-e][202][MUSIM] Open issues for MUSIM**

**WID: LTE\_NR\_MUSIM-Core**

**Document for: Discussion and Decision**

# Introduction

This is to kick start open issues on MUSIM WI:

* [Post116bis-e][202][MUSIM] Open issues for MUSIM (vivo)

Scope: Collect remaining critical open issues (needed to close the WI) for the MUSIM WI

      Intended outcome: Report (for information)

      Deadline:  Short

Please provide your comment by 1/28/2022 08:00 UTC. Thank you.

# Discussion

As per chairman guidelines, this discussion shall propose the pre-discussions for next meeting.

* **Each open issue** should be associated with **suggested treatment/handling**.
	1. **Company input into Pre117-e-offline (i.e. no company tdocs)**
	2. Company tdocs invited.
	3. CR rapporteur handled issue (CR rapporteur will propose resolution as input to next meeting).
	4. Other, e.g. immature area, reference to dependency, unclear status etc.

Rapporteur has provided suggested treatment for each OI with colored index.

To make it easier to find the correct contact delegate in each company for potential follow-up questions, the rapporteur encourages the delegates who provide input to provide their contact information in this table:

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| --- | --- |
| Company | Contact: Name (E-mail) |
| vivo | yangxiaodong5g@vivo.com |
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## Switching procedure without leaving RRC\_CONNECTED

Open issues for switching procedure without leaving RRC\_CONNECTED

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| **OI Index** | **Open issue** | **comment** |
| **1-1** | Supported gap patterns for MUSIM based on RAN4 RAN4 feedbackRAN2#116bis-e agreement:* 1: From RAN2 perspective, at least the following MGL/MGRP values are applicable for MUSIM periodic gap:

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

MGL: 1.5ms, 3ms, 3.5ms, 4ms, 5.5ms, 6ms, 10ms, 20ms* Can add additional MGL/MGRP if RAN4 indicates other values are needed
 | Wait for RAN4 LS feedback on additional value |
| **1-2** | FFS if signalling supports more periodic and aperiodic gaps for MUSIMRAN2#116bis-e agreement:* 3: keep three gaps agreement (i.e., 2 periodic gaps and 1 aperiodic gap) for now. Ask to RAN4 to clarify if one additional periodic gap can be possible without sacrificing NW A performance (exact LS wording for the question can be discussed offline).
 | Wait for RAN4 LS feedback on the number of aperiodic gaps.  |
| **1-3** | Gap configuration (e.g AddModReleaseList, gap id, gap modification)RAN2#116bis-e agreement:* Stage-3 details for gap configuration (e.g AddModReleaseList, gap id, gap modification) are postponed for now (pending the general MG discussion). Can consider P8/P9 as starting point from MUSIM perspective.

*Proposal 8: [17/20] Adopt the list with ToAddModList/ToReleaseList in RRCReconfiguration for the scheduling gap configuration* *Proposal 9: [15/19] Introduce gap ID in RRCReconfiguration message for MUSIM to identify each configured gap, and support modification or release of gaps via gap ID.* |  |
| **1-4** | How UE indicates release of gap pattern.RAN2#116bis-e agreement:* FFS on UAI details (alt1 or alt2). Companies are requested to provide corresponding Stage-3 CRs to next meeting.

- Alt 1: If the UEAssistanceInformation does not include a field for aperiodic or periodic gap preference, it indicates no preference for the corresponding field for aperiodic or periodic gap.- Alt 2: Each MUSIM gap configured by network A is associated with an index, UE can indicate which MUSIM gap should be released by including the corresponding MUSIM gap index into UEAssistanceInformation Message. |  |
| **1-5** | FFS what is the maximum value of the prohibit timer for MUSIM UAI without leaving RRC\_CONNECTED state |  |
| **1-6** | FFS indication from UE in UAI on the criticality or need for the gap location to be maintained at the same position as requested. | RAN4 discussions indicates that if MG overlpas with MUSIM requested gap, UE should do NTWK-A operation on the MG-Gap not MUSIM operation. This will result in UE not monitoring PO in this stage leading to paging collision. |
| **1.7** | FFS UE behaviour until it received Network configuration related to gaps after requesting for gaps. | Whether UE can start using the requested gaps until receiving network configuration or need to wait until network configuration is not clear. In case if network command is not provided can UE continue to use the requested gaps ? |

Companies are invited to provide your views on the open issues listed above for early identification:

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| --- | --- |
| **Company’s name** | **Comments, if any** |
| Nokia | We have added 1.6 and 1.7 as additional open issues to be concluded for gap configuration. Eventhough it is marked as low priority whether the periodic gaps to be disabled for mobility /RLF operations is not concluded. We propose to include them also in the list of open issues. |
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## Switching procedure with leaving RRC\_CONNECTED

Open issues for switching procedure for leaving RRC\_CONNECTED

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| **OI Index** | **Open issue** | **comment** |
| **2-1** | FFS whether the configuration of “configured time” is mandatory when network configures UE to report the preference of leaving RRC\_CONNECTED state | The configuration of “configured time” could be optional. If it’s present, consider UE itself to be configured to provide MUSIM assistance information for leaving RRC\_CONNECTED. |
| **2-2** | The value range of the waiting timer for leaving RRC Connection state.Email[5] proposed that the value range of the waiting timer for leaving RRC Connection state could be defined as {10ms, 20ms, 40ms, 60ms, 80ms, 100ms}. |  |
| **2-3** | The preferred RRC state indicator for switching notification with leaving RRC Connected state: Alt1: RRC\_IDLE or RRC\_INACTIVEAlt2: RRC\_IDLE, RRC\_INACTIVE, outOfConnected |  |
| **2-4** | Reconfiguration (including HO) and RLF during the wait time.Email[5] suggested to deprioritize this discussion:* Proposal 7: [To discuss] While the wait timer for switching notification to leave RRC connected state is running, the UE may not detect RLF or initiate connection re-establishment procedure. No SPEC change is needed.
* Proposal 8: [To discuss] While the wait timer for switching notification to leave RRC connected state is running, the UE may not trigger CHO and may not perform handover command. No SPEC change is needed.
* Proposal 9: [To discuss] RAN2 does not specify additional UE behavior on receiving reconfiguration of wait timer while wait timer is running. The current running CR is enough.
 |  |

Companies are invited to provide your views on the open issues listed above for early identification:

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| **Company’s name** | **Comments, if any** |
| Nokia | Wait timer interaction with RLF and Re-establishment procedures is not concluded.We propose to include this as additional open issue.  |
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## Paging collision avoidance

Companies are invited to provide Open issues if any

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| **OI Index** | **Open issue** | **comment** |
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Companies are invited to provide your views on the above open issues:

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| **Company’s name** | **Comments, if any** |
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## Paging with service indication

Companies are invited to provide Open issues if any

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| **OI Index** | **Open issue** | **comment** |
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Companies are invited to provide your views on the above open issues:

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| **Company’s name** | **Comments, if any** |
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## UE capabilities and other aspects

Companies are invited to provide Open issues if any

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| **OI Index** | **Open issue** | **comment** |
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Companies are invited to provide your views on the above open issues:

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| **Company’s name** | **Comments, if any** |
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# Conclusions

TBD

# References

1. RAN2#116bis-e Chair Notes.
2. R2-2200800 Running NR RRC CR for MUSIM vivo draftCR Rel-17 38.331 16.7.0 LTE\_NR\_MUSIM-Core
3. R2-2200801 Remianing issue list vivo
4. R2-2201706 Summary of [AT116bis-e][231][MUSIM] MUSIM gap details (vivo)
5. R2-2201707 Summary of [AT116bis-e][232][MUSIM] MUSIM configured time for leaving RRC connection (MediaTek)