**3GPP TSG-RAN WG2 Meeting #116bis electronic R2-22xxxxx**

**Online, 17 – 25 January 2022**

**Source: LG**

**Title:** **Summary of [POST116bis-e][707][V2X/SL] Open issues on IUC, Phase 1**

**Agenda Item:** **8.15.3**

**Document for:** **Discussion and Decision**

# Introduction

This contribution summarizes the Phase-1 discussion on open issue list review of the following email discussion:

* [POST116bis-e][707][V2X/SL] Open issues on IUC (LG)

 **Scope:** 1st phase: Make an open issue lists with the proposed candidate options or rapporteur suggestion. Open issue lists can include pre-identified issues (e.g. FFS, not decided or skipped from previous offline/email discussion) and new issues raised in company contributions at RAN2#116bis. For new issues that have not discussed before, rapporteur can collect companies’ inputs (e.g. whether it is essential issue that need to be considered and closed in Rel-17) and based on that, determine whether to be included in the open issue list or not.

2nd phase: email discussion on the identified open issues with collecting companies’ inputs on the candidate options or rapporteur’s suggestion.

 **Intended outcome:** Open issue list with the proposed candidate options or rapporteur’s suggestion from 1st phase (in R2-2201807). Discussion summary for the identified open issues from 2nd phase.

 **Deadline:** 1st phase (1/21 – 1/28 UTC), 2nd phase (2/9 – 2/14 UTC)

The discussion is focusing on the open issue list (i.e., IUC issues RAN2 starts discussion) identified in [2] and missing RAN2 specific IUC issues not discussed in the #116b-e meeting.

**Contact list**

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| Company | Name | E-mail |
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# Review on open issue list for IUC

The identified “RAN2 specific IUC issues” in [2] are needed to be discussed for WI completion. Companies are invited to provide views on the suggested way of treatment/handling for each of them (i.e. Company input into Pre117-e-offline, Company tdocs invited, CR rapporteur handled issue, Other [1]).

* **#116b-e agreements:**

Agreement on resource allocation enhancements RAN2 scopes:

1: Inter-UE coordination (IUC) issues RAN2 mainly relies on RAN1:

 - HARQ retransmission number for inter-UE coordination information

 - Information and length of information of IUC MAC CE. The information indicated in RAN1 LS should be taken into account as baseline.

 - UE-B procedure (e.g. final selection of resources) to the (non-)preferred resource set in IUC

 - Scheme 2 inter-UE coordination design

 - Condition for the UE-A to transmit IUC

 - Signaling design and trigger conditions for the request from UE-B to UE-A

 - Cast types (UC/GC/BC) of inter-UE coordination

 - Transmission of inter-UE coordination MAC CE on dedicated resource

 - L1 parameters/configurations for IUC in Uu RRC (including L1 configurations per resource pool)

 - Whether UE-A can be in mode1 or mode2 (interested companies are invited to raise/discuss the issue directly in RAN1)

2. IUC issues RAN2 starts discussion:

 - LCP for inter-UE coordination MAC CE, support for standalone inter-UE coordination MAC CE/multiplex MAC CE and MAC SDU in a MAC PDU

 - Timer to handle latency bound for inter-UE coordination

 - Priority value/priority order of inter-UE coordination MAC CE. RAN1 progress can be taken into account in phase-2 discussion.

 - HARQ feedback option of inter-UE coordination MAC CE

3. IUC in SL DRX is deprioritized in Rel-17 from RAN2 point of view

## Issue 1. LCP for inter-UE coordination MAC CE, i.e., support for standalone inter-UE coordination MAC CE/multiplex MAC CE and MAC SDU in a MAC PDU

RAN2 should discuss whether the MAC CE for reporting IUC information can be multiplexed with the MAC SDU or whether it should be transmitted alone. Following this decision, the HARQ Feedback option for MAC CE can be discussed as a follow-up issue.

**Q1. If any, please comment if you have any missing issues or any suggestions for handling phase 2 discussion on this issue.**

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| **Company** | **Comments, if any (missing issues or suggestions for handling this issue)** |
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## Issue 2. HARQ feedback option of inter-UE coordination MAC CE

RAN2 should determine the HARQ feedback option (i.e. enabled or disabled) for IUC MAC CE (reporting message). Also, HARQ feedback option for standalone MAC CE and HARQ feedback option for MAC CE multiplexed with MAC SDU should be discussed.

**Q2. If any, please comment if you have any missing issues or any suggestions for handling phase 2 discussion on this issue.**

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| **Company** | **Comments, if any (missing issues or suggestions for handling this issue)** |
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## Issue 3. Priority value/priority order of MAC CE for inter-UE coordination information

It has been decided to support MAC CE for IUC information report in RAN1. According to the RAN1 decision, RAN2 should determine the priority order/priority value of IUC MAC CE for logical channel prioritization and discuss this issue.

**Q3. If any, please comment if you have any missing issues or any suggestions for handling phase 2 discussion on this issue.**

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| **Company** | **Comments, if any (missing issues or suggestions for handling this issue)** |
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## Issue 4. Timer to handle latency bound for inter-UE coordination

The need for a timer based approach for the transmission of IUC MAC CE has been mentioned in [4] and [5]. That is, the issue that could be discussed in RAN2 is how to ensure that the inter-UE coordination information can be transmitted to MAC layer in time since the inter-UE coordination information is time-sensitive.

**Q4. If any, please comment if you have any missing issues or any suggestions for handling phase 2 discussion on this issue.**

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| **Company** | **Comments, if any (missing issues or suggestions for handling this issue)** |
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## Others

**Any essential RAN2 open issue is missing? Please provide input to the following table, if any.**

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| **Company** | **Other critical RAN2 open issues identified (if any)** |
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# Output Open Issue List and Recommendations

# References

1. R2-22xxxxx Coordinated Company Input For Rel-17 Open Issues Planning R2 117-e and impacts to R2 116bis-e RAN2 Chair
2. RAN2-116bis-e\_Rel17\_NR SL enh\_20220125\_1525R2-2201804
3. R2-2201804 Summary [AT116b-e][704][V2X/SL] Resource allocation enhancements LG Electronics Inc. (Rapporteur)
4. R2-2200375 Discussion on resource allocation enhancement OPPO
5. R2-2200939 Design of inter-UE coordination MAC CE Ericsson