**3GPP TSG RAN WG1 Meeting #110 R1-220xxxx**

**Toulouse, France, August 22nd – 26th, 2022**

**Agenda item:** 8.11

**Source:** Moderator (LG Electronics)

**Title:** Initial summary for Inter-UE coordination for Mode 2 enhancements

**Document for:** Discussion and information

## Introduction

The inter-UE coordination issues in contributions [1-21] submitted to RAN1#110 meeting are summarized in the table of Sections 3. Also an initial assessment on each issue is provided based on the following classification:

* ***High priority (H)****:*
	+ *High-priority item (essential, pending issues, broken spec components) and proposed editorial changes that either enhance the clarity of the specs or correct mistakes*
* ***Non-essential (N)****:*
	+ *All other purposes such as spec optimization and low priority issues*
* ***Editorial (E)****:*
	+ *Editorial issues that will be handled as editorial CRs (to be communicated to the editors/chairs)*

## Preparation for maintenance

### Collection of issues for Inter-UE coordination for Mode 2 enhancements

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| --- | --- | --- | --- |
| **Issue#** | **Issue** | **References** | **FL initial assessment** |
| 1 | **[Scheme 1]** Addition of clarification for the relationship between start/end slots of resource selection window used for SL transmission carrying IUC information and start/end slots of resource selection window for determining the set of resources | [2], [3], [5], [6], [7] | H |
| 2 | **[Scheme 1]** Addition of clarification in the specification that UE-A is the destination UE of a TB transmitted by UE-B for the case when IUC information is triggered by an explicit request from UE-B and UE-A determines the set of non-preferred resources for UE-B | [2] | H |
| 3 | **[Scheme 1]** Further clarification on the resource pool used for determining the set of resources and transmitting IUC information | [4], [15] | H |
| 4 | **[Scheme 1]** Further clarification on how to deal with the different IUC information decoded by SCI format 2-C and MAC CE | [4] | N |
| 5 | **[Scheme 1]** Further clarification on conditions under which Option B can be used for the received preferred resource set | [4], [19] | N |
| 6 | **[Scheme 1]** Further clarification on obtaining the set of resources based on the received resource combination indication | [7] | N |
| 7 | **[Scheme 1]** Modification to UE-B’s behavior of excluding the non-preferred resource set from candidate single-slot resources | [7] | N |
| 8 | **[Scheme 1]** Further clarification on UE-B’s behavior of performing the random resource selection with the received non-preferred resource set* Note that how to handle this issue in RAN2 LS of R1-2205728 will be dependent on the outcome of online discussion for AI 5
 | [7], [11], [13], [21] | H |
| 9 | **[Scheme 1]** Further clarification on UE-A's behavior when it decodes one container (e.g., SCI format 2C) successfully but fails to decode the other container (e.g., MAC CE) | [8] | N |
| 10 | **[Scheme 1]** Further clarification on UE’s behavior related to RRC parameters of sl-TriggerConditionRequest and sl-Condition1-A-2* Note that how to handle this issue in RAN2 LS of R1-2205727 will be dependent on the outcome of online discussion for AI 5
 | [10] | H |
| 11 | **[Scheme 1]** Further clarification on UE's behavior regarding the transmissions of explicit request and IUC information based on the latency bound (e.g., conditions under which UE-B is allowed to transmit new explicit request, whether to allow condition-based IUC information transmission within this latency bound) | [12] | N |
| 12 | **[Scheme 1]** Introduction of additional conditions that UE-B uses the received non-preferred resource set for its resource selection | [12] | N |
| 13 | **[Scheme 1]** Addition of clarification on missing field descriptions and functions of SCI format 2-C | [12], [20] | H |
| 14 | **[Scheme 1]** Further clarification on how IUC information related fields in SCI format 2-C indicates each unit/tuple | [12] | N |
| 15 | **[Scheme 1]** Addition of clarification for cast type(s) of Scheme 1 and/or SCI format 2-C to the specification | [13], [19] | H |
| 16 | **[Scheme 1]** Further clarification on how UE-A determines the set of preferred resources when the time gap from IUC transmission to the preferred resources is larger than ($T\_{proc,0}^{SL}+T\_{proc,1}^{SL}+T\_{proc,2}^{SL}$) | [15] | N |
| 17 | **[Scheme 1]** Introduction of procedure that allows UE-B to distinguish between non-preferred resource generated based on different conditions (i.e., Condition 1-B-1, Condition 1-B-2) | [17] | N |
| 18 | **[Scheme 1]** Introduction of field of priority value in MAC CE carrying IUC information with the preferred resource set | [18] | N |
| 19 | **[Scheme 1]** Further clarification on the use of preferred resource set in the resource reselection due to re-evaluation/pre-emption/conflict information | [19] | H |
| 20 | **[Scheme 1]** Correction for the reference of the priority field of SCI format 2-C | [20] | N |
| 21 | **[Scheme 2]** Further clarification on conditions for UE to be UE-B when at least one of UEs scheduling conflicting TBs does not set indicationUEB flag to 1 | [1], [5], [14], [16], [18], [19] | H |
| 22 | **[Scheme 2]** Further clarification on the description of “valid PSFCH occasion” in the current specification | [2], [21] | N |
| 23 | **[Scheme 2]** Addition of clarification in the specification about the RSRP threshold(s) used for determining the expected/potential conflict(s) in Option 1 and/or Option 4. | [4], [9], [18], [19] | H |
| 24 | **[Scheme 2]** Further clarification on conditions for UE to be UE-B in Condition 2-A-2 | [5] | H |
| 25 | **[Scheme 2]** Further clarification on how to determine the priority for the resource conflict indication with Condition 2-A-2 | [12], [18] | N |
| 26 | **[Scheme 2]** Further clarification on PSFCH occasion indication in terms of determines a number of PSFCH resources available for multiplexing conflict information in a PSFCH transmission | [12] | N |
| 27 | **[Scheme 2]** Further clarification on PSFCH occasion validity of UEs scheduling the conflicting TBs in order for UE-A to determine whether to transmit the conflict indication | [19] | N |
| 28 | **[Scheme 2]** Further clarification on UE-A’s behavior of transmitting PSFCH for the conflict indication when multiple reserved resources are indicated by UE-B’s SCI under the situation where the PSFCH occasion is derived by a slot where UE-B’s SCI is transmitted | [19] | N |
| 29 | **[Scheme 2]** Further clarification on determining UE-B when sl-TypeUE-A is enabled or not enabled | [20] | N |
| 30 | **[Scheme 2]** Further clarification on PSFCH prioritization related to the conflict indication | [20] | N |
| 31 | **[Scheme 2]** Further clarification on priority definition for Tx and Rx of PSFCH with conflict information | [21] | N |
| 32 | **[Scheme 2]** Further clarification on Rx UE behavior if the timeline for conflict indication is not fulfilled | [21] | N |
| 33 | **[Scheme 1/2]** Correction on RRC parameter name and value misalignment | [9], [15], [19], [20] | H |

### Summary of companies’ inputs on the maintenance issues to be treated

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| **Issue#** | **FL initial assessment** | **Companies’ inputs** |
| 1 | H | * H :
* N :
* E:
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| 2 | H | * H :
* N :
* E:
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| 3 | H | * H :
* N :
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| 4 | N | * H :
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| 5 | N | * H :
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| 6 | N | * H :
* N :
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| 7 | N | * H :
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| 8 | H | * H :
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| 9 | N | * H :
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| 31 | N | * H :
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| 33 | H | * H :
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### FL's recommendation

Based on the summary in Section 2.2, the following maintenance issues of Inter-UE coordination for Mode 2 enhancements are recommended to be addressed in this meeting.

* Recommendation of maintenance issues for “Inter-UE coordination for Mode 2 enhancements” to be addressed in RAN1#110 meeting
	+ Scheme 1
		- TBD
	+ Scheme 2
		- TBD

## Discussion

### Issue#1:

TBD

## Proposals for discussion in online sessions

TBD

## Reference

1. R1-2205742 Correction for inter-UE coordination Scheme 2 determination of UE-B FUTUREWEI
2. R1-2205766 Remaining issues on maintenance of Rel-17 sidelink enhancements Huawei, HiSilicon
3. R1-2205848 Discussion on maintenance on NR sidelink enhancement LG Electronics
4. R1-2205977 Remaining issues on NR Sidelink enhancement Spreadtrum Communications
5. R1-2206096 Maintenance on NR SL enhancement ZTE, Sanechips
6. R1-2206283 Remaining essential issues in R17 NR sidelink enhancement OPPO
7. R1-2206360 Maintenance on NR sidelink enhancement CATT, GOHIGH
8. R1-2206447 Remaining issues on resource allocation for sidelink enhancement Lenovo
9. R1-2206468 Editorial correction for inter-UE coordination NEC
10. R1-2206562 Discussion on LS Related to RRC Parameters for IUC Scheme 1 and Default CBR Configuration Intel Corporation
11. R1-2206563 Discussion on LS on IUC with Non-Preferred Resource Set Intel Corporation
12. R1-2206763 Maintenance on NR Sidelink enhancement vivo
13. R1-2206804 Maintenance on NR sidelink enhancement Samsung
14. R1-2206890 Maintenance on NR Sidelink enhancement CMCC
15. R1-2206936 Remaining issues on NR sidelink enhancement Sharp
16. R1-2207146 Remaining issues on R17 SL Enhancement InterDigital, Inc.
17. R1-2207206 Remaining issues in Sidelink Qualcomm Incorporated
18. R1-2207313 On Maintenance of NR Sidelink Enhancement Apple
19. R1-2207386 Maintenance of sidelink enhancement NTT DOCOMO, INC.
20. R1-2207483 Maintenance on Inter-UE coordination ASUSTeK
21. R1-2207563 Critical corrections and remaining issues on NR SL enhancement Ericsson