3GPP TSG-RAN WG1 Meeting #104-e R1-21xxxxx

e-Meeting, January 26th – February 5th, 2021

Agenda Item: 7.2.4

Source: Moderator (Ericsson)

Title: Feature lead summary#1 on Resource allocation for NR sidelink Mode 1

Document for: Discussion, Decision

# List of issues

## List of identified issues

After reading the contributions listed in the appendix, the FL has identified the issues listed below and organized them in 3 groups.

**Group 1 – Issues related to SL HARQ-ACK reporting to gNB:**

1. How to multiplex SL HARQ-ACK on a PUSCH scheduled by DCI 0-2: R1-2101436, R1-2101581 (TP4)
2. Codebook configuration:
	1. Discuss whether a clarification and/or LS is necessary regarding the behaviour when pdsch-HARQ-ACK-CodebookList (or other options) is configured: R1-2101581 (2.2 and TP2), R1-2100515 (P3), R1-2101533 (2.1.3, TP3)
3. Specific issues for Type-1 HARQ codebook:
	1. Issues related to varying number of PSSCH slots associated with the PSFCH slot – R1-2100515 (P2), R1-2100937 (P3)
	2. Reporting when multiple pools are configured – R1-2101649, R1-2100937 (P4)
4. Clarifications on PUCCH slot/resource determination – R1-2101581 (2.3 TP3)
5. Exceptional reports:
	1. Priority value of a HARQ-ACK information bit in exceptional cases: R1-2101533 (2.1.4, TP4)
	2. UE reports HARQ-ACK on uplink in case SL FB is disabled: R1-2100137,
	3. UE reports HARQ-ACK when it does not perform transmission on resources provided by a DG: R1-2100734, R1-2101581 (TP1)
	4. Simpler corrections
		* Due to intra-prioritization: Correction because it applies to DG and CG – R1-2100137 (Other TPs - TP1).
6. Miscellaneous corrections related to the Applicability of HARQ-ACK information reporting for Type-1 and Type-2 HARQ-ACK codebooks: R1-2101533 (2.1.7, TP7) but disputed by R1-2100515 (2.1.2.3)
7. Simpler corrections:
	1. Remove indication by SCI: R1-2100137 (Other TPs – TP2)
	2. Clarification about PUCCH TX power (R1-2101345 – P1)
	3. Clarification that higher layer parameter N1PUCCH-AN-r16 is used only for SL CG type 1 – R1-2100515, R1-2101581 (also type-2 without PDCCH TP3)
	4. Clarifications about PSFCH resource occasions: R1-2100937 (P2)
	5. k>0 always in slot offset between PSFCH and HARQ-ACK reporting: R1-2101533 (2.1.6, TP6)
	6. Miscellaneous: R1-2101533 (2.1.1, TP1)

**Group 2 – Issues related to DCI and PDCCH**

1. Search spaces:
	1. How to deal with the case that dci-FormatsSL is configured in USS dci-Format or dci-FormatsExt – R1-2100411 (P2, P3), R1-2100515 (P1), R1-2101533 (2.1.1 TP1)
	2. Changes to UE procedure for determining physical downlink control channel assignment – R1-2100411 (TP1)
	3. Monitoring of SL related DCI formats in Type0/0A/1/2-PDCCH CSSs – Editorial correction or monitoring in CSS: R1-2101533 2.1.5 (TP5-1 or TP5-2)
2. Configuration index for DCI format 3\_0 with CRC scrambled by SL-CS-RNTI – R1-2101533 (2.1.2, TP2)
3. Size alignment with DCI formats in 7.3.1.3 – R1-2100411 (TP2)
4. Simpler corrections:
	1. Editorial: R1-2100411 (TP3)

**Group 3 – Issues related to CGs**

1. Maximum number of transmissions per TB using CG resources: R1-2100137
2. Editorial
	* Type 2 activation: R1-2100937 (P1)

NOTE: for all topics listed above, it is first necessary to agree on whether they are issues that require a solution or not.

## Feature lead assessment

Regarding Group 1:

* Issues that deserve high priority: 1, 2, 3.1
* Issue 1.3.2 is identified by a single company. There have been some related discussions in the past (without agreements or conclusions). Other companies are encouraged to express their view. Unless the concern is shared by others, the FL proposes not to discuss this topic.
* Issue 4 and Issue 1.5.1 seem quite small. It would be good to know whether the concern is shared by other companies too.
* Issue 1.5.2 and Issue 1.5.3 have been discussed in the past without reaching any consensus. The FL proposes not to revisit them.
* Issue 6 is identified by 1 company and disputed by another company. The FL the company to discuss the topic offline.
* Issue 1.5.4 and the list under Bullet 7 contains seem minor clarifications or corrections. If an e-mail discussion is allocated to Group 1, the FL’s suggestion is to treat them quickly too.

Regarding Group 2:

* Issues that deserve high priority: 1, 2
* Issues with lower priority: 3
* Issue 4 seems a minor clarification or correction. If an e-mail discussion is allocated to Group 2, the FL’s suggestion is to treat it quickly too.

Regarding Group 3:

* Issue 1 has been discussed in the past without reaching any consensus. The FL proposes not to revisit it.
* Issue 4 seems a minor clarification or correction. If an e-mail discussion is allocated to Group 3, the FL’s suggestion is to treat it quickly too. If not, it could be combined in some other discussion (e.g., Group 2).

**Proposal by the FL:**

* If only one e-mail discussion is allocated to Mode-1, treat the following topics:

**Group 1 – Issues related to SL HARQ-ACK reporting to gNB:**

1. How to multiplex SL HARQ-ACK on a PUSCH scheduled by DCI 0-2: R1-2101436, R1-2101581 (TP4)
2. Codebook configuration:
	1. Discuss whether a clarification and/or LS is necessary regarding the behaviour when pdsch-HARQ-ACK-CodebookList (or other options) is configured: R1-2101581 (2.2 and TP2), R1-2100515 (P3), R1-2101533 (2.1.3, TP3)
3. Specific issues for Type-1 HARQ codebook:
	1. Issues related to varying number of PSSCH slots associated with the PSFCH slot – R1-2100515 (P2), R1-2100937 (P3)
4. Clarifications on PUCCH slot/resource determination – R1-2101581 (2.3 TP3)
5. Exceptional reports:
	1. Priority value of a HARQ-ACK information bit in exceptional cases: R1-2101533 (2.1.4, TP4)
	2. Simpler corrections
		* Due to intra-prioritization: Correction because it applies to DG and CG – R1-2100137 (Other TPs - TP1).
6. Simpler corrections:
	1. Remove indication by SCI: R1-2100137 (Other TPs – TP2)
	2. Clarification about PUCCH TX power (R1-2101345 – P1)
	3. Clarification that higher layer parameter N1PUCCH-AN-r16 is used only for SL CG type 1 – R1-2100515, R1-2101581 (also type-2 without PDCCH TP3)
	4. Clarifications about PSFCH resource occasions: R1-2100937 (P2)
	5. k>0 always in slot offset between PSFCH and HARQ-ACK reporting: R1-2101533 (2.1.6, TP6)
	6. Miscellaneous: R1-2101533 (2.1.1, TP1)

**Proposal by the FL:**

* If two e-mail discussions are allocated to Mode-1, in addition to the preceding topics, treat the following ones:

**Group 2 – Issues related to DCI and PDCCH**

1. Search spaces:
	* 1. How to deal with the case that dci-FormatsSL is configured in USS dci-Format or dci-FormatsExt – R1-2100411, R1-2100515 (P1), R1-2101533 (2.1.1 TP1)
		2. Changes to UE procedure for determining physical downlink control channel assignment – R1-2100411 (TP1)
		3. Monitoring of SL related DCI formats in Type0/0A/1/2-PDCCH CSSs – Editorial correction or monitoring in CSS: R1-2101533 2.1.5 (TP5-1 or TP5-2)
	1. Configuration index for DCI format 3\_0 with CRC scrambled by SL-CS-RNTI – R1-2101533 (2.1.2, TP2)
	2. Size alignment with DCI formats in 7.3.1.3 – R1-2100411 (TP2)
	3. Simpler corrections:
		1. Editorial: R1-2100411 (TP3)

## Company views

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# Appendix – List of identified contributions

R1-2100137 Remaining open issues and corrections for mode 1 and mode 2 RA OPPO

R1-2100411 Maintenance on resource allocation mechanisms for NR sidelink vivo

R1-2100515 Discussion on essential corrections in resource allocation for Mode 1 and 2 LG Electronics

R1-2100734 A remaining issue on Mode-1 resource allocation for NR sidelink Fujitsu

R1-2100937 Remaining issues on mode1 ZTE, Sanechips

R1-2101345 Remaining Issue of Mode 1 Resource Allocation Apple

R1-2101436 Remaining Issues in Mode 1 Resource Allocation Qualcomm Incorporated

R1-2101533 Remaining issues on resource allocation for NR sidelink Sharp

R1-2101581 Maintenance for resource allocation mechanism mode 1 NTT DOCOMO, INC.

R1-2101649 Remaining issues on type-1 HARQ-ACK codebook considering multiple sidelink reosurce pools ASUSTeK