**3GPP TSG RAN WG1 #110 R1-22xxxxx**

**Toulouse, France, August 22-26 2022**

**Source: Huawei, HiSilicon**

**Title: Summary of issue on description for SL CG type 2 PSSCH transmission in R1-2207641**

**Agenda item: 7.2.4**

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

Introduction

In RAN1#110 meeting, one CR was submitted to clarify PSSCH transmission based on SL CG type 2. This paper aims to collect company views on this issue as per discussed in R1-2207641.

Discussion

## Round 1

In [1], the following issue was identified:

According to the discussion of [109-e-R16-V2X-01] and relevant CR agreed in R1-2205299, the PUCCH resource for reporting the SL HARQ corresponding to the PSSCH transmission(s) of SL CG Type 2 activated by DCI format 3\_0 should be same as that for SL CG PSSCH without corresponding DCI configured by *sl-N1PUCCH-AN-Type2*. However, when a value of the PUCCH resource indicator field and a value of PSFCH-to-HARQ feedback timing indicator field (if present) is zero, the description “a PUCCH resource is not provided” in current specification is misleading given that the PUCCH resource may be already configured by the RRC parameter. Thus, a more appropriate description is that such a (pre-) configured PUCCH resource is deactivated when the values of related fields are set to zero, which implies the PUCCH resource is provided but not used.

The following proposal was to address this issue:

* “a PUCCH resource is not provided” is modified as “a PUCCH resource is deactivated”, with the TP as follows:

|  |
| --- |
| **<Unchanged parts omitted>**16.5 UE procedure for reporting HARQ-ACK on uplinkFor a PSSCH transmission by a UE that is scheduled by a DCI format, the DCI format indicates to the UE that a PUCCH resource is not provided when a value of the PUCCH resource indicator field is zero and a value of PSFCH-to-HARQ feedback timing indicator field, if present, is zero. For a SL configured grant Type 2 PSSCH transmission without a corresponding PDCCH, or for a SL configured grant Type 2 PSSCH transmission activated by a DCI format, the DCI format activating the SL configured grant Type 2 indicates to the UE that a PUCCH resource is deactivated when a value of the PUCCH resource indicator field is zero and a value of PSFCH-to-HARQ feedback timing indicator field, if present, is zero. For a SL configured grant Type 1 PSSCH transmission, a PUCCH resource can be provided by *sl-N1PUCCH-AN* and *sl-PSFCH-ToPUCCH-CG-Type1*. For transmission of HARQ-ACK information corresponding only to a SL configured grant Type 2 PSSCH transmission, including the PSSCH transmission(s) associated with the corresponding activation DCI format 3\_0, a UE can be provided a PUCCH resource by *sl-N1PUCCH-AN-Type2*. If a PUCCH resource is not provided, the UE does not transmit a PUCCH with generated HARQ-ACK information from PSFCH reception occasions.  **<Unchanged parts omitted>** |

**Q: Do you agree the proposed TP for TS 38.213 in [1]?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or no** | **Comment** |
| Huawei, HiSilicon | Yes | If this issue is not addressed, it will mislead UE that whether the PUCCH resource configured by *sl-N1PUCCH-AN-Type2* for sidelink HARQ-ACK reporting is used or not. Specifically, when the PUCCH resource is configured by the RRC parameter, but the DCI signaling indicates the resource is “not provided”, the UE will not know whether to use this resource or not, since it has been “provided” by high layer. |
| vivo | No | Agreements:* For case of DG and type 2 CG: one combination of “timing and resource for PUCCH” is used to indicate that PUCCH resource is not provided
* For type 1 CG: no RRC configuration of PUCCH resources indicates that PUCCH resource is not provided

Current spec is aligned with the above agreement, thus no change is needed |
| ZTE,Sanechips | No | Similar view as vivo. The proposed deactivated change does not seem to have any supporting agreement (or do wo miss anything?) |
| DCM | Yes, with comment | OK to update for the clarification, but the current update is not preferred since basically ‘activated/deactivated(release)’ is not used for PUCCH corresponding to CG.Rather, we suggest the following update for the last sentence of the above spec.‘If a PUCCH resource is not provided or is indicated as not provided, the UE does not transmit a PUCCH with generated HARQ-ACK information from PSFCH reception occasions.’ |
| Huawei, HiSilicon 2 |  | To Vivo and ZTE,The agreement was reached considering the Type2 CG as a dynamic grant and then a corresponding PUCCH resource is provided by DCI format. However, as clarified in R1-2205299, the PUCCH resource for Type2 CG including the PSSCH transmission activated by DCI format are provided by RRC parameter, like Type1 CG. So, it is no longer appropriate to say “PUCCH resource for SL type 2 CG is provided by DCI.”To DCM,Thanks for suggested wording. We are open for having other wording as long as the ambiguity can be fixed. Let see more companies’ views. |
| Nokia, Nokia Shanghai Bell | No | The word “deactivated” would also be problematic. Better wording to clarify the specification could be created but we think that spec is already clear enough. We think that this is not essential correction. |
| OPPO | No | We think the current wording in the spec is clear which meaning that DCI indicates the PUCCH resource is not privded by DCI. Furthermore, there is no meaning that PUCCH resources configured by RRC cannot be used with current wording. So I would like to suggest keep the current wording. |
| Sharp | No | “Provide” is used in the spec for both fields indicated in DCI and parameters configured by RRC. Regarding DCM’s suggestion, we don’t see any problem of interpretaing “not provided” as “indicated as not provided”.  |
| Ericsson | No | As commented by other companies, we think that the specification is clear with the current wording so no changes needed. |
| Samsung | No | Similar to other company commented, we think the wording of “deactivated” is inappropriate, and we don’t see essential difference between “If a PUCCH resource is not provided” and “indicated as not provided”. We think the current wording is good enough to cover the case since there is no further limitation of “not provided by DCI” now.  |

## Summary of Round 1

On the proposed changes on TS 38.213

* Support: Huawei/HiSilicon, DCM ***(2 companies)***
* Not support: Vivo, ZTE/Sanchip, Nokia/Nokia Shanghai Bell, OPPO, Sharp, Ericsson, Samsung **(*7 companies*)**

It is clear that the majority view is the CR is not needed. Therefore, further discussion on the CR is not pursued.

Summary

TBD

Reference

1. R1-2207641,‘Correction on description for SL CG type 2 PSSCH transmission’, RAN1#110, Huawei, HiSilicon