**3GPP TSG RAN WG1 #108-e R1-21XXXXX**

**e-Meeting, February 21st - March 3rd**

**Source: Moderator (vivo)**

**Title: Summary of email discussion [108-e-R16-V2X-02] Alignment CR on TS 38.213**

**Agenda item: 7.2.4**

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

Introduction

This document is to summarize the discussion of the following email thread.

[108-e-R16-V2X-02] Alignment CR on TS 38.213; considering [R1-2201073](../../Docs/R1-2201073.zip) (first change), [R1-2201600](../../Docs/R1-2201600.zip), [R1-2201603](../../Docs/R1-2201603.zip), [R1-2201604](../../Docs/R1-2201604.zip), [R1-2202440](../../Docs/R1-2202440.zip) by February 23 – Siqi (vivo)

Companies are highly appreciated providing your inputs before the 1st checkpoint:

* **1st checkpoint: 22th Feb 9:59 AM UTC**

Discussion

## TP#1 for incorrect parameter name TDD-UL-ConfigurationCommon in TS 38.213

R1-2201073 [1] proposed the change as captured in TP#1 to align the RRC parameter name between 38.213 and 38.331.

|  |
| --- |
| 16.1 Synchronization procedures **<Unchanged parts omitted>**  - are the 7th to 1st LSBs of , respectively  - for ,  - for ,  where  - is the number of symbols in a slot: if *cyclicPrefix* = "ECP"; else,  - is 1 if , else is 0  - is 1 if , else is 0  - is the sidelink starting symbol index provided by *sl-StartSymbol*  - is the granularity of slots indication as described in Table 16.1-2  - , , , , are the parameters of *tdd-UL-DL-ConfigurationCommon* as described in clause 11.1, or the parameters of *sl-TDD-Configuration* as defined in [9.3, TS 38.331]  - corresponds to SL SCS as defined in [4, TS 38.211]  **<Unchanged parts omitted>** |

### Round#1 discussion on TP#1

Do you agree with the proposed change? Please provide your views on TP#1 in the table below.

|  |  |  |
| --- | --- | --- |
| Company | Agree or not | Comment |
|  |  |  |
|  |  |  |
|  |  |  |

## TP#2 for incorrect parameter name BWP-Sidelink in TS 38.213

R1-2201600 [2], and R1-2202440 [5] identified the same issue but proposed different ways for alignment.

* [2]: Change *BWP-Sidelink* to *sl-BWP-Config*
* [5]: Change *BWP-Sidelink* to *sl-BWP*
* In the moderator’s understanding, either way could work. Considering that IE *BWP-Uplink*, which is for configuring an uplink bandwidth part, is used when referring to the active UL BWP in the text to be modified (‘… and *BWP-Uplink* for the SL BWP and the active UL BWP’), it is slightly preferred to use *sl-BWP-Config*, which provides the SL bandwidth part configuration, to keep consistency with UL part.
* Thus, moderator suggests the following TP#2 based on [2], the unmodified parts in [2] are removed for conciseness.

BWP-Uplink ::= SEQUENCE {

bwp-Id BWP-Id,

bwp-Common BWP-UplinkCommon OPTIONAL, -- Cond SetupOtherBWP

bwp-Dedicated BWP-UplinkDedicated OPTIONAL, -- Cond SetupOtherBWP

...

}

SL-BWP-Config-r16 ::= SEQUENCE {

sl-BWP-Id BWP-Id,

sl-BWP-Generic-r16 SL-BWP-Generic-r16 OPTIONAL, -- Need M

sl-BWP-PoolConfig-r16 SL-BWP-PoolConfig-r16 OPTIONAL, -- Need M

...

}

|  |
| --- |
| 16.5.1.1 Type-1 HARQ-ACK codebook in physical uplink control channel For a SL BWP on a carrier, and an active UL BWP on the primary cell, as described in clause 12, a UE determines a set of occasions for candidate PSSCH transmissions with corresponding PSFCH reception occasions for which the UE can multiplex corresponding HARQ-ACK information in a PUCCH transmission in slot . The determination is based on:  a) a set of slot timing values associated with the SL BWP where is provided by *sl-PSFCH-ToPUCCH* for DCI format 3\_0 or by *sl-PSFCH-ToPUCCH-CG-Type1*  b) the ratio between the sidelink SCS configuration and the uplink SCS configuration provided by *subcarrierSpacing* in *sl-BWP-Config* and *BWP-Uplink* for the SL BWP and the active UL BWP, respectively  c) a configured sidelink resource pool bitmap  d) a value of a period of PSFCH transmission occasion resources for a sidelink resource pool provided by a respective *sl-PSFCH-Period* |

### Round#1 discussion on TP#2

Do you agree with the proposed changes? Please provide your views on TP#2 in the table below.

|  |  |  |
| --- | --- | --- |
| Company | Agree or not | Comment |
|  |  |  |
|  |  |  |
|  |  |  |

## TP#3 for power control in TS 38.213

R1-2201603 [3] proposed changes as captured in TP#3 to correct the subscript of :

|  |
| --- |
| 16.2.3 PSFCH A UE with scheduled PSFCH transmissions, and capable of transmitting a maximum of PSFCHs, determines a number of simultaneous PSFCH transmissions and a power for a PSFCH transmission , , on a resource pool in PSFCH transmission occasion on active SL BWP of carrier as  - if *dl-P0-PSFCH* is provided,  [dBm]  where  - is a value of *dl-P0-PSFCH*  - is a value of *dl-Alpha-PSFCH*, if provided; else, |

### Round#1 discussion on TP#3

Do you agree with the proposed changes? Please provide your views on TP#3 in the table below.

|  |  |  |
| --- | --- | --- |
| Company | Agree or not | Comment |
|  |  |  |
|  |  |  |
|  |  |  |

## TP#4 for power control in TS 38.213

R1-2201604 [4] proposed changes as captured in TP#4 to correct the subscript of parameters in the procedure of SL Type-1 and Type-2 HARQ-ACK codebook generation.

* Change1: Change to in Clause 16.5.1.1
* Change2: Change to in Clause 16.5.2.1
* Change3: Change to in Clause 16.5.2.1
* Change4: Change to in Clause 16.5.2.2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **<Unchanged parts omitted>** 16.5.1.1 Type-1 HARQ-ACK codebook in physical uplink control channel **<Unchanged parts omitted>**  The cardinality of the set defines a total number of occasions for candidate PSSCH transmissions with corresponding PSFCH reception occasions corresponding to the HARQ-ACK information bits. A UE determines HARQ-ACK information bits, for a total number of HARQ-ACK information bits as = HARQ-ACK information bit for candidate PSSCH transmission with index with corresponding PSFCH reception, for , as described in clause 16.5. If the UE does not transmit a PSSCH in an occasion for candidate PSSCH transmission with corresponding PSFCH reception occasion, due to the UE not detecting a corresponding DCI format 3\_0, the UE generates a NACK value for the occasion for candidate PSSCH transmission with corresponding PSFCH reception occasion.  **<Unchanged parts omitted>** 16.5.2.1 Type-2 HARQ-ACK codebook in physical uplink control channel **<Unchanged parts omitted>**  If the UE transmits HARQ-ACK information in a PUCCH in slot , the UE determines the , for a total number of HARQ-ACK information bits, according to the following pseudo-code:  Set – PDCCH with DCI format 3\_0 monitoring occasion index: lower index corresponds to earlier PDCCH with DCI format 3\_0 monitoring occasion  Set  Set  Set  Set to the number of PDCCH monitoring occasions  while  if PDCCH monitoring occasion is before an active UL BWP change on the PCell  ;  else  if there is a PSFCH reception occasion associated with a PSSCH transmission scheduled by a DCI format in PDCCH monitoring occasion  if  ;  end if    = HARQ-ACK information bit    end if  end if  ;  end while  for any  if a SL configured grant Type 1 is configured for a UE, or a SL configured grant Type 2 is configured and activated for a UE, and the SL configured grant provides a grant for PSSCH transmissions with PSFCH reception occasions in a slot , where is the PSFCH-to-HARQ-feedback timing value for the SL configured grant  ;  = HARQ-ACK information bit associated with the PSFCH reception occasions associated with the PSSCH transmissions scheduled by the SL configured grant  end if  **<Unchanged parts omitted>** 16.5.2.2 Type-2 HARQ-ACK codebook in physical uplink shared channel **<Unchanged parts omitted>**  If a UE multiplexes HARQ-ACK information in a PUSCH transmission that is scheduled by a DCI format that includes a SAI field, the UE generates the HARQ-ACK codebook as described in clause 16.5.2.1, with the following modifications:  - For the pseudo-code for the HARQ-ACK codebook generation in clause 16.5.2.1, after the completion of the loop, the UE sets where is the value of the SAI field in the DCI format according to Table 16.5.2.2-1.  If a UE  - is scheduled for a PUSCH transmission by a DCI format that includes a SAI field with value , and  - has not received any PDCCH within the monitoring occasions for PDCCH with DCI format 3\_0 for scheduling PSSCH with corresponding PSFCH reception occasions on a serving cell, and  - does not have HARQ-ACK information in response to PSFCH reception occasions associated with a SL configured grant to multiplex in the PUSCH, as described in clause 16.5.2.1,  the UE does not multiplex HARQ-ACK information in the PUSCH transmission.  Table 16.5.2.2-1: Value of SAI   |  |  |  | | --- | --- | --- | | SAI MSB, LSB |  | Number of PDCCH monitoring occasions in which DCI format 3\_0 scheduling PSSCH transmissions with corresponding PSFCH reception occasions is present, denoted as and | | 0,0 | 1 |  | | 0,1 | 2 |  | | 1,0 | 3 |  | | 1,1 | 4 |  |   **<Unchanged parts omitted>** |

### Round#1 discussion on TP#4

Do you agree with the proposed changes? Please provide your views on TP#4 in the table below.

|  |  |  |
| --- | --- | --- |
| Company | Agree or not | Comment |
|  |  |  |
|  |  |  |
|  |  |  |

Summary

Reference

1. R1-2201073, ‘Draft CR on UE procedure for receiving HARQ-ACK on sidelink’, vivo
2. R1-2201600, ‘Correction on the parameter name for SL BWP configuration in TS 38.213’, ZTE, Sanechips
3. R1-2201603, ‘Editorial modification for PSFCH power control in TS 38.213’, ZTE, Sanechips
4. R1-2201604, ‘Correction on SL Type-1 and Type-2 HARQ-ACK codebook in TS 38.213’, ZTE, Sanechips
5. R1-2202440, ‘Correction on misalignment for RRC parameters for SL BWP’, Huawei, HiSilicon