**3GPP TSG RAN WG1 Meeting #106-e R1-210xxxx**

**E-meeting, Aug 16th – 27th, 2021**

**Agenda Item: 7.2.4**

**Source: Moderator (Huawei)**

**Title: Summary of [106-e-NR-5G\_V2X-09]**

**Document for: Discussion and Decision**

# Introduction

This document provides proposals and summary of discussions of the following email discussion:

[106-e-NR-5G\_V2X-09] Discussion on [R1-2106476](file:///D:\Mix-Local\001-Mix%20Working%20Folder\Docs\R1-2106476.zip): Correction on mode 2 resource reservation period by August 18 – Xiang (Huawei)

# Discussion

## 2.1 Issue

As pointed out by the draft CR [1], there was an agreement made in RAN1#101-e:

Agreement:

* A UE is expected to be (pre-)configured with a set *sl-ResourceReservePeriod* containing value of 0 ms

The purpose of this agreement is to allow UE to set “Resource reservation period” = 0 for aperiodic traffic. However, the agreement is not currently captured in any specification, which means that aperiodic transmission has to provide periodic reservation whenever *sl-ResourceReservePeriod* does not contain a value = 0 ms.

Therefore, the draft CR [1] proposes to agree the following TP, i.e., adding UE expectation that *sl-ResourceReservePeriod* contains value of 0 ms. Otherwise, the specification does not align to agreements, and a periodic reservation is forced even for aperiodic traffic.

* Note: the moderator appends “*List*” to “*sl-ResourceReservePeriod*” in the following TP to align with the latest parameter name, which was also pointed out by some companies during the preparation phase.

**TP:**

|  |
| --- |
| **--------------------------- Text starts (TS 38.213, clause 16.4)-----------------------------**  **<Unchanged parts omitted>** 16.4 UE procedure for transmitting PSCCH A UE can be provided a number of symbols in a resource pool, by *sl-TimeResourcePSCCH*, starting from a second symbol that is available for SL transmissions in a slot, and a number of PRBs in the resource pool, by *sl-FreqResourcePSCCH*, starting from the lowest PRB of the lowest sub-channel of the associated PSSCH, for a PSCCH transmission with a SCI format 1-A.  A UE that transmits a PSCCH with SCI format 1-A using sidelink resource allocation mode 2 [6, TS 38.214] sets  - "Resource reservation period" as an index in *sl-ResourceReservePeriodList* corresponding to a reservation period provided by higher layers [11, TS 38.321], if the UE is provided *sl-MultiReserveResource*  - A UE expects that *sl-ResourceReservePeriodList* contains value of 0 ms.  **<Unchanged parts omitted>**  **--------------------------- Text ends (TS 38.213, clause 16.4)-----------------------------** |

Meanwhile, during the preparation week, some companies commented that this issue can be handled in RAN2.

Therefore, the moderator proposes the following alternatives to check companies’ views:

* **Alt 1: Agree on the text proposal in Section 2.1**
* **Alt 2: Send LS to RAN2 about this issue**
  + Draft LS content: RAN1 has identified a potential issue that the following agreement has not been implemented. RAN1 requests RAN2 to inform RAN1 how or if RAN2 specification already captures it and update if necessary

Agreement:

* A UE is expected to be (pre-)configured with a set *sl-ResourceReservePeriod* containing value of 0 ms
* **Alt 3: Agree on the text proposal in Section 2.1, and send LS to RAN2 about this issue**
  + Draft LS content: RAN1 has identified an issue that the following agreement has not been implemented. RAN1 has agreed the attached CR and requests RAN2 to make any necessary updates in their specifications

Agreement:

* A UE is expected to be (pre-)configured with a set *sl-ResourceReservePeriod* containing value of 0 ms

## 2.2 Company views

**Q1: Which alternative in Section 2.1 do you support?**

* Note: if you support Alt 2 or 3, you can also comment on the draft LS content.

|  |  |  |
| --- | --- | --- |
| **Company** | **Which Alt do you support?** | **Comments** |
| Intel | Alt.1 or Alt.3 | Although RAN1 assumption at the time of making the agreement was to capture it in MAC/RRC, and the LS was sent informing this agreement in R1-2005010, we are supportive of capturing it in RAN1 spec, so that we directly fix the issue instead of deferring it to RAN2.  Regarding detailed wording, probably it may be made clearer that the list at least contains 0 ms, and not just this value. |
| NTT DOCOMO | Alt.2 | This kind of text is described in 38.331 normally. |
| Huawei, HiSilicon | Alt 1 or Alt 3 | This issue was discussed in RAN1, and the agreement was made in RAN1. So it’s straightforward to solve this issue directly in RAN1 specification, which also helps the progress.  In addition, we are also ok to notify RAN2 about this RAN1 CR, and RAN2 can make necessary updates if any. So either Alt 1 or Alt 3 is ok for us. |
| Qualcomm | Any | We agree that issue needs to be addressed and are ok with any of the proposed alternatives.  The LS could contain the RAN1 agreement with a suggestion to update the description of *sl-ResourceReservePeriodList* to add the wording from Alt 1 “A UE expects that sl-ResourceReservePeriodList contains value of 0 ms.” |
| Apple | Alt. 2 | We could inform RAN2 that 0 ms should be contained in the list of values for *sl-ResourceReservePeriod.* |
| Ericsson | Alt.2 | In case the clarification is needed, it should be captured in RRC specification. It is up to RAN2 to discuss this issue.  We propose to update the content of the LS as follows:  Draft LS content: RAN1 has identified a potential issue that the following agreement has not been implemented. RAN1 requests RAN2 to inform RAN1 how or if RAN2 specification already captures it and to make any updates in their specifications if necessary |
| Nokia, NSB | Alt 2 | The corresponding field description in 38.331 is the most natural place to capture this. |
| Samsung | Alt 2 |  |
| Sharp | Alt 2 |  |
| LG | Alt2 | We have similar view with Ericsson. |
| vivo | Alt2 | 321 has already description on condition to use the 0ms, it is up to RAN2 whether additional clarification is needed or not. |
| CATT,GOHIGH | Alt2 | To our understanding, RAN2 has already required 0ms should be included in the list of *sl-ResourceReservePeriod,* based on the following specified operation in TS 38.321 5.22.1.1:  3> if the MAC entity decides not to use the selected sidelink grant for the next PSSCH duration:  4> set the resource reservation interval to 0ms.  It is up to RAN2 confirmation and/or clarification. |
| NEC | Alt 2 | We think the mentioned issue can avoided by proper configuration. For example, to ensure the operation cited by CATT, *sl-ResourceReservePeriodList* has to contain 0ms. |
| ZTE, Sanechips | Alt 2 | It is better to be captured in 38.331. |
| OPPO | Alt 2 |  |

# Conclusions

TBD

# References

1. R1-2106476 Correction on Mode 2 resource reservation period Huawei, HiSilicon