**3GPP TSG-RAN WG2 Meeting #111-eR2-200xxxx**

**Online, 17–28 August 2020**

**Agenda item: 6.4.3**

**Source: Ericsson**

**Title: ‎[AT111-e][711][V2X] Corrections on BSR (Ericsson)**

**Document for: Discussion and Agreement**

# 1 Introduction

This is to report the result of the following email discussion in RAN2#111-e Meeting [1].

* [AT111-e][711][V2X] Corrections on BSR (Ericsson)

Discuss the corrections from {R2-2006877 (only for 2nd change if it was not already handled in [AT111-e][705]) and R2-2007912} and prepare agreeable 38.321 CR in R2-2008348. CR will be approved via email. Deadline is 8/28 10:00am (UTC).

# 2 Discussion

## 2.1 SL-BSR truncation

The related change is available in the R2-2006877, and which is highlighted as the below.

In TS 38.321 clause 5.22.1.6,

*For Regular and Periodic SL-BSR, the MAC entity shall:*

*1> if sl-PrioritizationThres is configured and the value of the highest priority of the logical channels that belong to* ***any LCG*** *and contain SL data for any Destination is lower than sl-PrioritizationThres; and*

*1> if either ul-PrioritizationThres is not configured or ul-PrioritizationThres is configured and the value of the highest priority of the logical channels that belong to any LCG and contain UL data is equal to or higher than ul-PrioritizationThres according to clause 5.4.5:*

*2> prioritize the LCG(s) for the Destination(s).*

The above texts are used to determine the prioritized SL LCGs. The current wording “any LCG” makes a general reference. It is still unclear that, what LCGs should be prioritized. Companies are encouraged to provide inputs to the following questions.

**Question1: Does company agree the wording “any LCG” in the above texts leads to confusion on what SL LCGs should be prioritized?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes (Proponent) |  |
| HW | No |  |
| LG | No |  |
| CATT | No |  |
| Samsung | No |  |
| Qualcomm | Yes |  |
| Intel | No |  |

**Question2: If company agrees Q1, does company agree to add** “**for iteration of each SL LCG” in clause 5.22.1.6 to select the SL LCG for prioritization as proposed** by R2-2006877**?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes (Proponent) | By adding “for iteration of each SL LCG”, the prioritization rules for SL LCGs will be clearer, and avoid confusion on how the UE shall select SL LCGs for prioritization. |
| HW | No | The proposed change is just some kind of wording improvement, but there is no issue with the current text. |
| LG | No | There is no problem with the original text. |
| CATT | No | The proposed change can be a kind of UE implementation manner. The original text is OK for us. |
| Samsung | No |  |
| Qualcomm | Yes  |  |
| Intel | No | While we can somewhat sympathize with Ericsson’s point, we think that the current text is sufficiently clear and the change is not really essential. |

**Proposed conclusion:**

TBD

## 2.2 Correction on sidelink BSR

The related changes are available in R2-2007912, and which are highlighted as the below.

As to 1st change in R2-2007912, the periodic timer and the retransmitting timer for sidelink BSR are named the same as that for uplink BSR respectively. As a result, do companies agree that such naming rule result into the below confusion?

1. it is unclear whether only one periodic timer (or retransmittig timer) is employed for both uplink and sidelink BSR.
2. if the timer is expired, it is unclear UE shall trigger either BSR or both.

**Question3: Do companies agree that such naming rule (i.e., the periodic timer and the retransmitting timer for sidelink BSR are named the same as that for uplink BSR**) **result into the below confusion?**

1. **it is unclear whether only one periodic timer (or retransmittig timer) is employed for both uplink and sidelink BSR.**
2. **if the timer is expired, it is unclear UE shall trigger either BSR or both.**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes |  |
| HW | Yes | Actually this issue has already been addressed in the offline discussion [705] and reflected in the latest miscellaneous CR. So no need to duplicate the discussion here.  |
| LG | Yes | We agree with HW. |
| CATT | Yes | We agree with HW. |
| Samsung | Yes | Agree with HW |
| Qualcomm | Yes |  |
| Intel | Yes |  |

**Question4: If companies agree Q3, do companies agree to add the prefix ‘*sl-*’ to the *periodicBSR-Timer*, the *retxBSR-Timer* and the *logicalChannelSR-DelayTimer* respectively as proposed by R2-200791**2**?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes |  |
| HW | Yes | See comments above  |
| LG | Yes | This change is covered by Rapporteur’s CR. |
| CATT | Yes | No need to duplicate the discussion here. |
| Samsung | Yes | Agree with LG |
| Qualcomm | Yes |  |
| Intel | Yes |  |

As to 2nd change in R2-2007912, according to TS 38.331, the value of Destination Index field should be set to an index among index(es) corrosponding to the destiontion identity(-ies) reported in *SL-TxResourceReqList*, instead of in *v2x-DestinationInfoList*. Besides, the brackets shall be removed.

Therefore, the below question 5 is raised.

**Question5: Do companies agree that the value of Destination Index field should be set to an index among index(es) corrosponding to the destiontion identity(-ies) reported in *SL-TxResourceReqList*, instead of in *v2x-DestinationInfoList* ‎‎?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes |  |
| HW | Yes | Actually this issue has already been addressed in the offline discussion [705] and reflected in the latest miscellaneous CR. So no need to duplicate the discussion here.  |
| LG | Yes |  |
| CATT | Yes | No need to duplicate the discussion here. |
| Samsung | Yes | Agree with HW |
| Qualcomm | Yes |  |
| Intel | Yes |  |

**Question6: If companies agree Q5, do company agree to correct that the index is set according to the order of destinations reported the in *SL-TxResourceReqList* IE, instead of *v2x-DestinationInfoList* as proposed by R2-200791**2**?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes |  |
| HW | Yes | See comments above  |
| LG | Yes | This change is covered by Rapporteur’s CR. |
| CATT | Yes | No need to duplicate the discussion here. |
| Samsung | Yes | Agree with LG |
| Qualcomm | Yes |  |
| Intel | Yes |  |

As to 3rd change in R2-2007912, in RLC and PDCP sepcifications, we do not specify any data volume calculation procedure for reporting sidelink buffer status separately. Therefore the phrase ‘SL data volume calculation procedure’ makes a confusion for the lack of sidelink specific procedure in the citied specs.

**Question7: Do companies agree that the phrase ‘SL data volume calculation procedure’ makes a confusion for the lack of sidelink specific procedure in the citied specs?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes |  |
| HW | Yes | Actually this issue has already been addressed in the offline discussion [705] and reflected in the latest miscellaneous CR. So no need to duplicate the discussion here.  |
| LG | Yes |  |
| CATT | Yes | No need to duplicate the discussion here. |
| Samsung | Yes | Agree with HW |
| Qualcomm | Yes |  |
| Intel | Yes |  |

**Question8: If companies agree Q7, do company agree to remote “SL” in the phrase ‘SL data volume calculation procedure’ as proposed by R2-200791**2**?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | Yes |  |
| HW | Yes | See comments above  |
| LG | Yes | This change is covered by Rapporteur’s CR.  |
| CATT | Yes | No need to duplicate the discussion here. |
| Samsung | Yes | Agree with LG |
| Qualcomm | Yes |  |
| Intel | Yes |  |

As to 4th change in R2-2007912, in the defination for the Buffer Size field in the sidelink BSR MAC CE in clause 6.1.3.33, it is specified that Buffer Size fields shall be arranged in ascending order based on the LCGi. This is assumed to be inherited from the field description for Buffer Size field in the Uu BSR MAC CE, where 1-byte bitmap consisting of 8 LCGi fields is adopted to indicate 8 LCG IDs respectively. However, it was agreed that 3-bit LCG ID shall be included instead of bitmap thus no LCGi field has been defiend in the sidelink BSR MAC CE. Therefore, it is unnecessary to arrange the Buffer Size fields in ascending order based on the LCGi.

Besides, as a common understanding, buffer status of sidelink logical channels with higher priority shall be reported first via the sidelink BSR MAC CE, especially if there are LCGs with avaiable data and belonging to multiple destinations. To further clarify the format, Buffer Sizes of LCGs shall be included in decreasing order of the highest priority of the sidelink logical channel belonging to the LCG, regardless of the value of the Destination Index field, as in LTE sidelink.

**Question9: Do companies agree that it is unnecessary for the sidelink BSR MAC CE to arrange the Buffer Size fields in ascending order based on the LCGi?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | No | Although there is no bitmap field in the sidelink BSR MAC CE, it is sufficient to follow the same rule as in the Uu BSR MAC CE. In addition, upon reception of a sidelink BSR MAC CE, the gNB will process all BS fields regardless how the BS fields are placed in the MAC CE. Therefore, this is an unnecessary optimization for Rel-16. |
| HW | Yes | Otherwise the UE will report the buffer status in a decreasing order of the LCG ID which may cause the buffer status of some low priority LCG being reported but the buffer status of some high priority LCGs being truncated, which is actually not a desired behaviour.  |
| LG | No | Agree with Ericsson.  |
| CATT | Yes | We share the same view as Huawei, otherwise, there will be some issues in the truncated BSR case. |
| Samsung | Yes | This text is needed for a bitmap based LCG field format. |
| Qualcomm | No | Agree with Ericsson |
| Intel | No | We also agree with Ericsson’s comment |

**Question10: If companies agree Q9, do company agree that the Buffer Size fields shall be included following a decreasing order of the highest priority of the sidelink logical channel belonging to the LCG** **as proposed by R2-200791**2**?**

|  |  |  |
| --- | --- | --- |
| Company Name | Views: Agree/Disagree | Comments |
| Ericsson | No | See comments for Q9. |
| HW | Yes | This is just to copy and paste what we have in LTE.  |
| CATT | Yes | This text proposal is the same with what we have in LTE. Thus, we think we can follow the legacy behaviour. |
| Samsung | Yes | We are fine to follow LTE. |
|  |  |  |
|  |  |  |

**Proposed conclusion:**

TBD

# 3 Conclusion

TBD

# 4 References

[1] RAN2-111-e\_V2X\_Kyeongin\_2020-08-25-1515