**3GPP TSG RAN WG1 #105-e R1-210xxxx**

**e-Meeting, May 10th - 27th, 2021**

**Source: Moderator (Nokia)**

**Title:** **Summary#1 for Rel-16 5G\_V2X\_NRSL QoS management and congestion control for sidelink**

**Agenda item: 7.2.4**

**Document for: Discussion and Decision**

# Introduction

In this contribution we summarize the remaining issues for Rel-16 5G\_V2X\_NRSL QoS management and congestion control for sidelink, as raised in contributions.

# Candidate issues for email discussion

### Candidates

The following issue was raised in the contributions reviewed in preparing this document:

#### Substantive Issues

Issue 1.1: UE behaviour if highest CBR in CBR range configuration is less than 100 %

#### Editorial Issues

None

### Outcome of preparatory email discussion

To be determined

# Issues

## Topic 1: Sidelink Congestion Control

### Issue 1.1: UE behaviour if highest CBR in CBR range configuration is less than 100 %

#### Introduction

According to TS 38.331, IE *SL-CBR-CommonTxConfigList* indicates the list of CBR range configurations in *sl-CBR-RangeConfigList* :

SL-CBR-CommonTxConfigList-r16 ::= SEQUENCE {

sl-CBR-RangeConfigList-r16 SEQUENCE (SIZE (1..maxCBR-Config-r16)) OF SL-CBR-LevelsConfig-r16 OPTIONAL, -- Need M

sl-CBR-PSSCH-TxConfigList-r16 SEQUENCE (SIZE (1.. maxTxConfig-r16)) OF SL-CBR-PSSCH-TxConfig-r16 OPTIONAL -- Need M

}

SL-CBR-LevelsConfig-r16 ::= SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-CBR-r16

SL-CBR-r16 ::= INTEGER (0..100)

| ***SL-CBR-CommonTxConfigList* field descriptions** |
| --- |
| ***sl-CBR-RangeConfigList***  Indicates the list of CBR ranges. Each entry of the list indicates in *SL-CBR-LevelsConfig* the upper bound of the CBR range for the respective entry. The upper bounds of the CBR ranges are configured in ascending order for consecutive entries of *sl-CBR-RangeConfigList.* For the first entry of *sl-CBR-RangeConfigList* the lower bound of the CBR range is 0. Value 0 corresponds to 0, value 1 to 0.01, value 2 to 0.02, and so on. |
| ***sl-CR-Limit***  Indicates the maximum limit on the occupancy ratio. Value 0 corresponds to 0, value 1 to 0.0001, value 2 to 0.0002, and so on (i.e. in steps of 0.0001) until value 10000, which corresponds to 1. |
| ***sl-CBR-PSSCH-TxConfigList***  Indicates the list of available PSSCH transmission parameters (such as MCS, sub-channel number, retransmission number and CR limit) configurations. |
| ***sl-TxParameters***  Indicates PSSCH transmission parameters. |

The CBR ranges are defined by the CBR range configuration selected from sl-CBR-RangeConfigList; specifically, they are given by a list of upper bounds. TS 38.331 explicitly states that the lower CBR bound of the lowest range is 0; however, there is no mention in TS 38.331 that the highest CBR bound must be 100 %.

That leads to a potential problem:

If e.g. a CBR range configuration is configured as { 10, 50, 90 }, then the CBR ranges (CBR in %) are [ 0, 10 ], ( 10, 50 ], ( 50, 90 ], but there is no CBR range configured for CBR > 90 %. The congestion control specified in TS 38.214 refers to “CBR range which includes the CBR measured”, so the congestion control behaviour for this configuration is not well defined if CBR exceeds 90 %.

#### Views expressed in contributions

[Sharp] raised this issue and give a text proposal to address it.

#### Feature lead view

Not critical. This case can be considered a misconfiguration, the last value in the CBR range configuration should be for CBR=100 %.

Appendix: Contributions used as basis for the summary

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| [R1-2105628](http://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_105-e/Docs/R1-2105628.zip) | Remaining issues on synchronization mechanism and QoS management for NR sidelink | Sharp |