**3GPP TSG RAN WG1 #101e R1-** **20xxxxx**

**May 25th – June 5th, 2020**

**Agenda item:** 7.2.5.4

**Source:** Moderator (Qualcomm)

**Title:** Summary of [101-e-NR-L1enh-URLLC-HARQ&Scheduling-03]

**Document for:** Discussion and Decision

# 1 Introduction

This document summarizes the companies’ views and captures the agreements related to the following email discussion:

**Email Discussion #3 by 5/29 and corresponding TP (if any) by 6/5 – Kianoush (Qualcomm):**

* *Issue #1: CPU release with uplink interruption*
* *Issue #2: priority of A-SRS*

**Companies are encouraged to share their initial feedback by 05/26.**

The summary of the companies’ proposals is available in [1]

# 2 CPU Release with Uplink Interruption

In the current specification, the occupied CPUs are assumed to remain occupied until the last symbol of PUCCH/PUSCH that carries the CSI report. However, in Rel. 16, and for a UE that supports the intra-UE prioritization capability or uplink cancellation indication, the channels that carry CSI may need to be cancelled. Hence, to make the UE operation clear, [2] proposes to keep this behaviour unchanged even in cases when the uplink channels are interrupted.

Note: Partial cancellation for a channel carrying a CSI report can happen in Rel. 15 too, e.g., due to dynamic SFI. However, from the current specification, it is not clear whether the CPUs have to remain occupied until the end of the channel before cancellation or the last symbol of the channel transmitted by the UE.

FL comment: The following proposal is related to Section **5.2.1.6 of 38.214**.

**Proposal: If PUCCH/PUSCH carrying the CSI report is partially transmitted, the occupied CPUs are assumed to remain occupied until the** **last symbol of PUCCH/PUSCH carrying the report before cancellation.**

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| **Company**  | **Comment** |
| ZTE | Agree, if we don’t agree, there is an extra standardization work to re-computer the CPU for the remaining symbols after cancellation in this case.  |
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# 3 Priority of A-SRS

Regarding the priority of SRS, RAN1 reached the following agreement:

RAN1 made the following agreement regarding the priority of SRS:

Agreement:

*P/SP-SRS and A-SRS triggered by DCI format 2\_3 are treated with low priority.*

* *FFS the priority of A-SRS triggered by other DCI formats*

To determine the priority of A-SRS, two options have been discussed so far:

* Option 1: Priority of A-SRS follows the priority indicator included in the triggering DCI
	+ Supported by: Samsung [3], DOCOMO [4], InterDigital [5], Ericsson [6]
* Option 2: A-SRS is always of low priority
	+ Supported by: ZTE [7], vivo [8], CATT [9], LGE [10], Panasonic [11], Nokia/NSB [12], Intel [13], MediaTek [14]

Please provide your views on Option 1 and Option 2 in the table below.

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| --- | --- | --- |
| **Company** | **Preferred Option** | **Comments** |
| ZTE | Option 2 | Option 1 can enable high priority A-SRS by introducing an artificial linkage with the priority indication in the scheduling DCI. Such linkage is unreasonable since the priority of A-SRS has nothing to do with the priority of the scheduled PUSCH or priority of HARQ-ACK associated with the scheduled PDSCH. This would either complicate gNB’s scheduling in order to avoid the mismatch of these priorities or make unnecessary dropping of other low priority transmissions due to artificially prioritizing a transmission from low priority to high priority. On the other hand, if gNB would like to have a quick A-SRS triggering to improve link adaptation, it is much easier for gNB to adopt option 2 just avoiding the collision with other UL transmissions. Therefore, Option 2 is preferred. |
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# 4 References

**[1] R1-2004674, “Summary#1 on UCI enhancements for R16 URLLC,” Moderator (OPPO)**

**[2] R1-2004458, “Remaining issues on UCI enhancements for URLLC,” Qualcomm**

**[3] R1-2003866, “Remaining issues for UCI enhancements,” Samsung**

**[4] R1-2004390, “Remaining issues for UCI enhancement for Rel-16 URLLC,” NTT DOCOMO**

**[5] R1-2004271, “UCI enhancements for URLLC,” InterDigital**

**[6] R1-2003440, “Remaining issue of UCI enhancements for NR URLLC,” Ericsson**

**[7] R1-2003318, “remaining issues on UL control enhancements for NR URLLC,” ZTE**

**[8] R1-2003388, “UCI enhancements for URLLC,” vivo**

**[9] R1-2003621, “Remaining issues on UCI enhancements,” CATT**

**[10] R1-2004030, “Remaining issues of UCI enhancements for NR URLLC,” LGE**

**[11] R1-2003814, “Remaining issue on UCI enhancement,” Panasonic**

**[12] R1-2003578, “Maintenance of Rel-16 URLLC UCI enhancements,” Nokia, NSB**

**[13] R1-2003738, “Remaining details on UCI enhancements for eURLLC,” Intel**

**[14] R1-2003685, “Remaining issues on UCI enhancements,” MediaTek**