3GPP TSG RAN WG1 #104-e R1-210xxxx

**e-Meeting, January 25th – February 5th, 2021**

**Title: [Draft] Reply LS on overlapped data and SR are of equal L1 priority**

**Release: Rel-16**

**Work Item: NR\_IIOT-Core**

**Source:** vivo [To be RAN1]

**To:** RAN2

**Cc:**

**Attachments:**

**Contact Person:**

**Name:** Lihui Wang

**E-mail Address:** wanglihui@vivo.com

**1. Overall Description:**

RAN1 would like to thank RAN2 for the LS R1-2100026 (R2-2011124) on overlapped data and SR are of equal L1 priority.

RAN1 had discussed the following cases when LCH based prioritization is configured. The examples are provided in the figures for each case.

* Case 1: only SR overlaps with PUSCH of equal L1 priority
* Case 2: other UCI(s) i.e., HARQ-ACK/CSI overlap with SR of equal L1 priority and the SR overlaps with the PUSCH of equal L1 priority
	+ Case 2-1: the final PUCCH resource after UCI multiplexing among different PUCCHs carrying HARQ-ACK/CSI and SR does not overlap with the PUSCH
	+ Case 2-2: the final PUCCH resource after UCI multiplexing among different PUCCHs carrying HARQ-ACK/CSI and SR overlaps with the PUSCH
* Case 3: other UCI(s) i.e., HARQ-ACK/CSI overlap with a PUSCH of equal L1 priority, SR overlaps with the PUSCH of equal L1 priority, but other UCI(s) do not overlap with the SR



Case 1: only SR overlaps with PUSCH of equal L1 priority



Case 2-1: the final PUCCH resource after UCI multiplexing does not overlap with PUSCH



Case 2-2: the final PUCCH resource after UCI multiplexing overlaps with PUSCH



Case 3: other UCI(s) overlap with a PUSCH, SR overlaps with the PUSCH, SR does not overlap with other UCI(s)

For Case 1 that only SR overlaps with PUSCH of equal L1 priority, RAN1 is in principle positive to support the functionality needed in PHY to enable LCH prioritization in MAC for the intended UE behavior, but it may have impacts on the PHY processing timeline and gNB blind detection which RAN1 is still discussing.

For Case 2 and Case 3 that there are resource overlapping for the SR, PUSCH and other UCIs i.e., HARQ-ACK/CSI of equal L1 priority, RAN1 is now further performing the feasibility study and RAN1 would like to ask RAN2 whether MAC is aware of the UCI multiplexing procedure in PHY and the final PUCCH after multiplexing may or may not overlap with PUSCH?

**2. Actions:**

**To RAN2 group**

**ACTION:**

RAN1 would like to inform RAN2 that for Case 1, RAN1 is in principle positive to support the functionality needed in PHY to enable LCH prioritization in MAC for the intended UE behavior, but it may have impacts on the PHY processing timeline and gNB blind detection which RAN1 is still discussing.

RAN1 would like to ask RAN2 for Case 2 and Case 3, whether MAC is aware of the UCI multiplexing procedure in PHY and the final PUCCH after multiplexing may or may not overlap with PUSCH?

**3. Date of Next RAN1 Meetings:**

TSG-RAN WG1 Meeting #104bis-e 12th April – 20th April 2021 E-meeting.

TSG-RAN WG1 Meeting #105-e 19th May – 27th May 2021 E-meeting.