**3GPP TSG-RAN WG2 Meeting #131 R2-250xxxx**

**Bangalore, India, 25th – 29th Aug. 2025**

**Source: vivo**

**Title: Discussion summary and list of RLC open issue for R19 XR**

**Agenda Item: 8.7.1**

**Document for: Discussion and Decision**

1. Introduction

This document summarizes the discussion of the following email discussion and collects the RLC open issues for XR Enhancements according to the following email discussion.

* [POST130][508][XR] RLC running CR and open issues (vivo)

Scope:

* Update and review the CR
* List open issues related to the CR

Intended outcome:

* Running CR for endorsement in the next meeting
* List of open issues for discussion at the next meeting

Deadline: Long

Companies are invited to provide comments/additional open issues in the below table by 31st July, 2025.

# Contact information

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| --- | --- |
| Company | Name, Email |
| Vivo | Chenli, chenli5g@vivo.com |
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# Discussion

* 1. Open issue list

**Rapporteur provides the list of open issues as below, and the corresponding suggestions on how to address them. Some of them could be further discussed based on contributions or resoved based on further progress. Companies are invited to provide comments on whether it is open issue and whether the suggestions from reapporteur is accuracy enough.**

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| **Company** | **Comments, if any** |
| Apple | For RLC-11, we think the open issue can have a sub-question for companies to consider:  FFS how to handle the case “ if there are only SDUs buffered whose transmissions have been stopped due to discard indication from PDCP, there is no SDU to retransmit the poll with”   * Whether/If the UE needs to continue to run *t-PollRetransmit* when it already knows the status of all RLC SDUs (either positively/negatively acknowledged, or discarded) up to POLL\_SN. |
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### Closed open issues

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| **Index** | **Issue description** | **Status** |
| RLC-1 | **Terminology for avoiding unnecessary retransmission, e.g. “obsolete”, or “outdated”, or “discard”** | **Closed** |
| RLC-2 | **whether further changes are needed for SR triggered by t-RxDiscard expires.** | **Closed** |
| RLC-3 | **whether use the terminology of “autonomous retransmission” or others.** | **Closed** |
| RLC-4 | **whether merge the autonomous retransmission procedure in clause 5.x into 5.3.2 or capture it separately.** | **Closed** |
| RLC-5 | Editor’s Note: Same as PDCP open issue: it is FFS which delay-reporting RLC data volume shall consider RLC data PDUs to be retransmitted.  Editor’s Note: It is FFS which delay-reporting RLC data volume shall consider STATUS PDU to be transmitted. | **Closed** |
| RLC-6 | Editor’s Note: FFS whether there are any RLF detection impacts when avoiding unnecessary retransmissions is introduced. | **Closed** |
| RLC-7 | Editor’s Note: It is still open how Autonomous Retransmission coexists with ARQ procedures, i.e. whether/how to increment the RETX\_COUNT for Autonomous Retransmission. | **Closed** |
| RLC-8 | Editor’s Note: It is still open on how to avoid excessive polling for the polling enhancement, e.g. only one polling or multiple. | **Closed** |
| RLC-9 | Editor’s Note: FFS whether/what additional conditions are needed to prevent too early and/or unnecessary retransmission due to polling enhancement. | **Closed** |

### DSR enhancements

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| **Index** | **Issue description** | **Rapporteur suggestion** |
| RLC-13 | Whether the delay-reporting or non-delay-reporting information is visible or not to RLC?  **[Rapp]: This is related to how to capture DSR in RLC.** | **Issue Type:** Not essential not important  **How to address it:** discuss in next round of running CR review. |

### Avoid unnecessary RLC retransmissions

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| **Index** | **Issue description** | **Rapporteur suggestion** |
| RLC-10 | Whether/How to introduce any limitations or associations for the configuration of stopReTxObsoleteSDU and DL t-RxDiscard.   * As raised by ZTE below | **Issue Type:** Not essential not important  **How to address it:** based on companies’ contribution |
| RLC-11 | FFS how to handle the case “ if there are only SDUs buffered whose transmissions have been stopped due to discard indication from PDCP, there is no SDU to retransmit the poll with”   * As raised by Nokia and Apple below   RAN2 agreement in #130 meeting:   * Working assumption: (RLC-11) No need to address window stalling issue with polling retransmission (TBC next meeting) * Assumption from companies is that this should not happen due to SR triggering from Rx side, but it needs to be checked whether this will always work | **Issue Type:** Not essential but important  **How to address it:** based on companies’ contribution |

### Ensure timely RLC retransmissions

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| **Index** | **Issue description** | **Rapporteur suggestion** |
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### Rel-18 leftovers

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| **Index** | **Issue description** | **Rapporteur suggestion** |
| RLC-12 | FFS how to handle PDCP SN gap report handling during UE mobility   * As raised by Qualcomm below. The corresponding Rel-18 agreement is: * RAN2 can discuss in the context of Rel-19 whether this problem is a critical problem to solve due to RLC enhancements. If it is a problem further discussions are needed on the alternatives. | **Issue Type:** Not essential not important?  **How to address it:** based on companies’ contribution |

* 1. Others, please specify

Companies are invited to describe any other identified open issues not currently included within this document.

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| **Company** | **Other identified open issues? (please describe) or other comments** |
| Sharp | Whether the delay-reporting or non-delay-reporting information can be invisible to RLC?  As we commented in the RLC running CR, it is benifical to not distinguish delay-reporting RLC SDU and non-delay-reporting RLC SDU in RLC spec. RLC can rely on current delay reporting indication from PDCP to evaluate RLC data volume. For example, if dsr-ReportNonDelayCriticalData is configured, PDCP indicates both delay-reporting PDCP SDUs and non-delay reporting PDCP PDUs as the delay-reporting RLC SDUs associated with the i-th dsr-ReportingThreshold. Otherwise, PDCP only indicates the delay-reporting PDCP SDUs as the delay-reporting RLC SDUs associated with the i-th dsr-ReportingThreshold. We see that the delay-reporting or non-delay-reporting information can be invisible to RLC, and all the description related to non-delay reporting RLC SDU can be removed.  **[Rapp] A new open issue is added, i.e. RLC-13, to check companies’ views.** |
| Sony | How to speed up the time-critical status report (SR) at Rx side seems an open issue.  From Rx side, when polling information is received, the speed of the status report (SR) depends on number of parameters: t-Reassembly, t-StatusProhibit timers. We think after Rx side receives polling information for the time-critical SDU(s), the Rx side should bypass/ignore the t-Reassembly timer for any SDU or segments of SDU if the t-Reassembly timer is running when generating status report.  **[Rapp] This issue was raised by several (3?) companies in last RAN2 meeting. Rapporteur suggests companies to propose it in their contributions.** |
| Huawei, HiSilicon | Unnecessary retransmission avoidance:  The running CR should consider the case that when the discard indication is received after the associated RLC SDU (segment) has been pending for retransmission. According to ccurent running CR, the RLC SDU (segment) pending for retransmission will be counted in BSR/DSR reporting.  **[Rapp] According to the current running CR. When the discard indication is received after the associated RLC SDU (segment) has been pending for retransmission, the RLC SDU/SDU segment(s) are not considered for tx or retx as specified in 5.2.3.1.1 as below:**  *when indicated from upper layer to discard a particular RLC SDU (see TS 38.323 [4]) , the transmitting side of an AM RLC entity shall not consider the corresponding RLC SDU or RLC SDU segment (s) for transmission or retransmission.*  **While in BSR/DSR data volume calculation, only the data PDU pending for tx or retx will be counted into.**  **I assume the current running CR already considered this case. Otherwise, further comments are welcome.**  [Apple] We think currently there are some different interpretations of “shall not consider the corresponding RLC SDU or RLC SDU segment for retransmission” in RAN2:   1. For a RLC SDU that has not been considered for retransmission, will not be considered for retransmission in any case. But if the RLC SDU has already been considered for retransmission (but still pending), it will continue to be “pending for retransmission”. 2. For a RLC SDU that has not been considered for retransmission, will not be considered for retransmission in any case. For a RLC SDU that has been considered for retransmission (but still pending), the retransmission of which should be cancelled (i.e. no longer pending).   It seems Huawei’s interpretation is (1), while the Rappateur’s understanding is (2). Perhaps some clarification in RAN2 is useful to reach a common understanding. |
| Huawei, HiSilicon | Polling triggering:  The remaining time based polling triggering in current running CR relies on the prerequisite that there is AMD PDU to transmit.  The case that the remaining time based polling triggering indication is received and there is no available AMD PDU to transmit should also be considered.  **[Rapp] This was discussed online, and it was addressed in the running CR (same response on the running CR comments).** |
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# Conclusion

In this contribution, we collect the open issues for XR enhancements in RLC. Based on the discussion, the following proposals have been achieved:

**Other open issues:**

**Proposal 1: RAN2 to consider the above open issues related to RLC for XR: RLC-10 to RLC-13.**

# References

1. R2-25xxxx, RLC running CR for R19 XR, vivo