

3GPP TSG RAN Rel-19 workshop

Taipei, June 15 - 16, 2023

Agenda Item: 5

Source: vivo

Title: L2 UP Protocol Enhancement in Rel-19

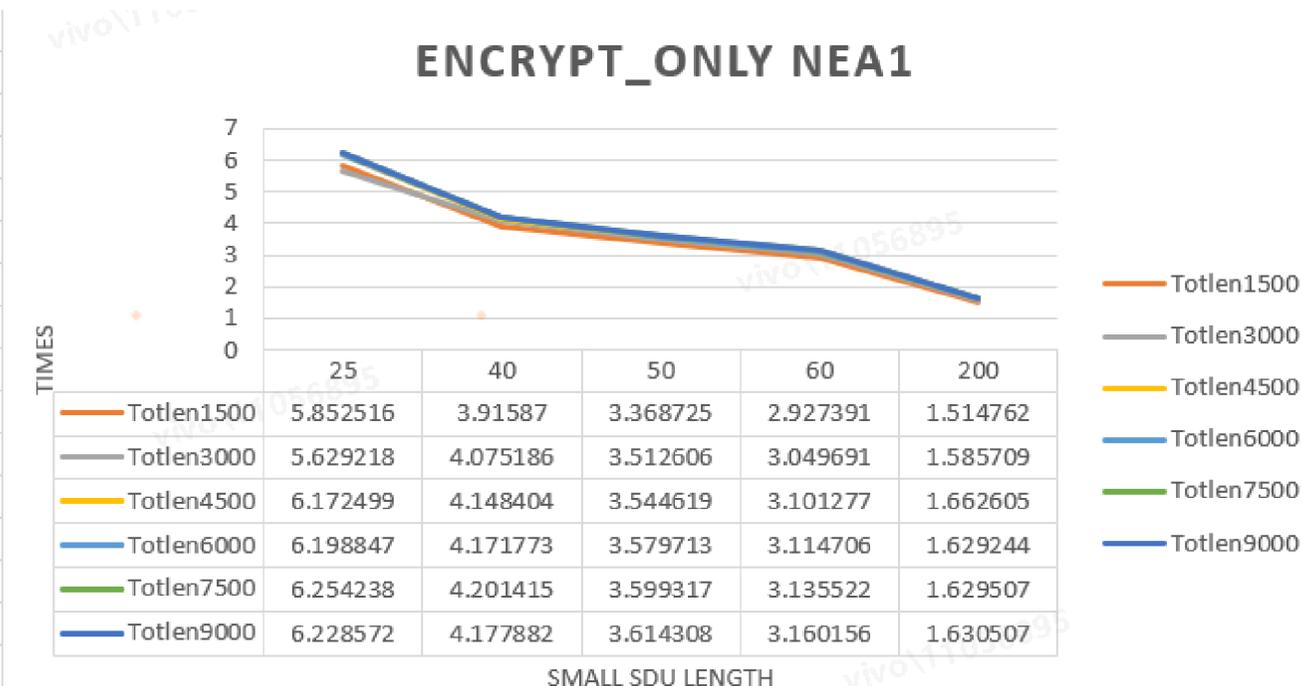
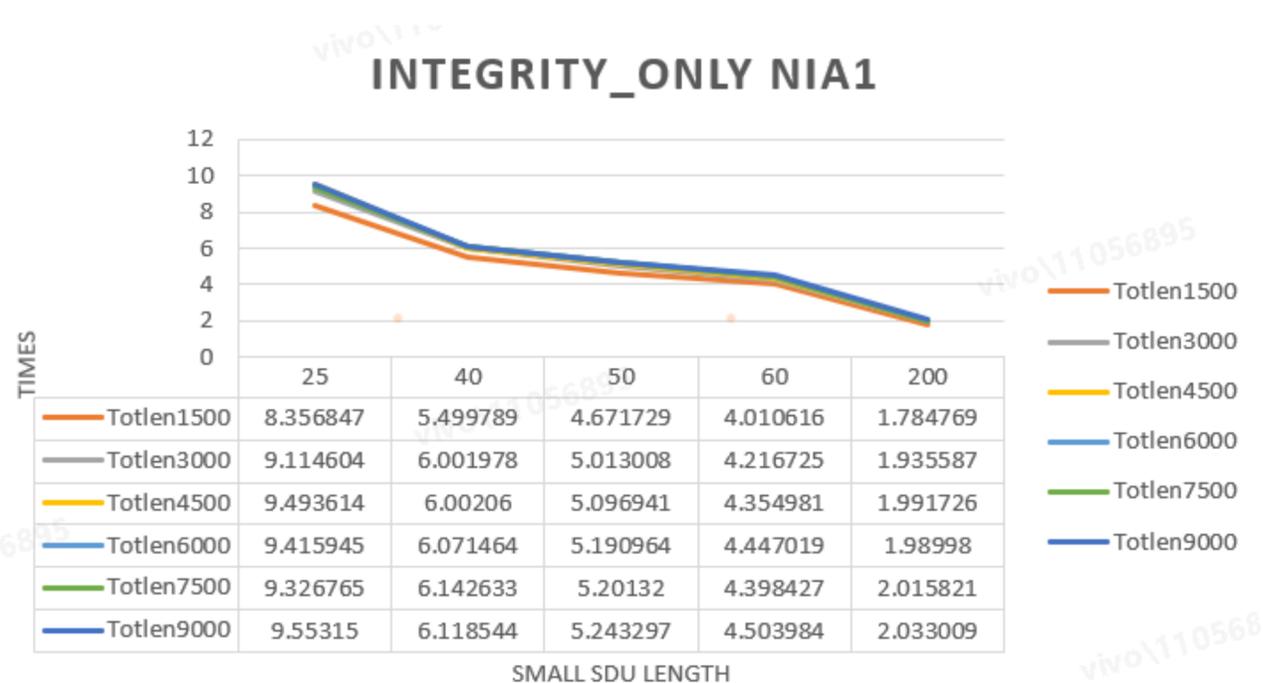
Document for: Discussion

RWS-230065

L2 UP protocol enhancements

Simplify the UE processing (e.g. security operation) due to high data rate in NR

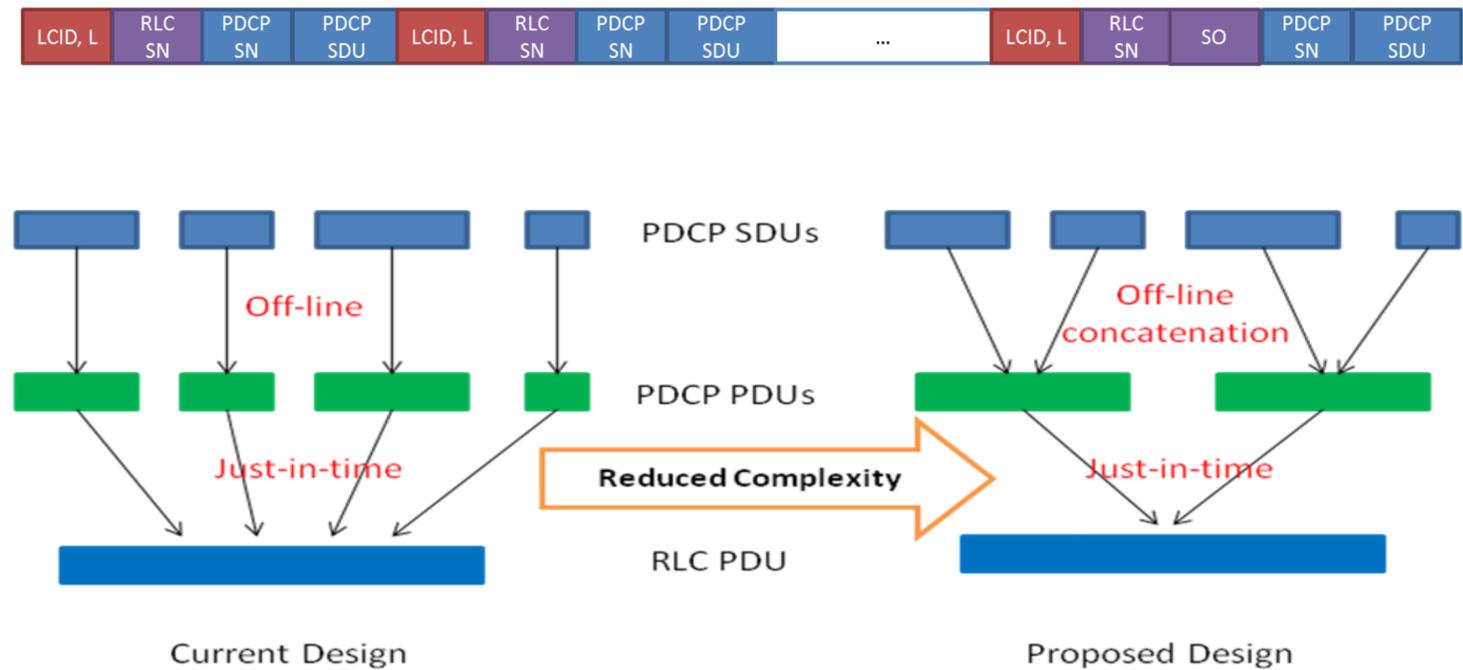
- Motivation: Full data rate UPIP is mandatory in R16, high data processing requirement for UEs
- For the same total bits, with the less number of PDU, Both integrity and encrypt processing time will be reduced due to PDCP Concatenation. (higher PDCP concatenation, less processing time)



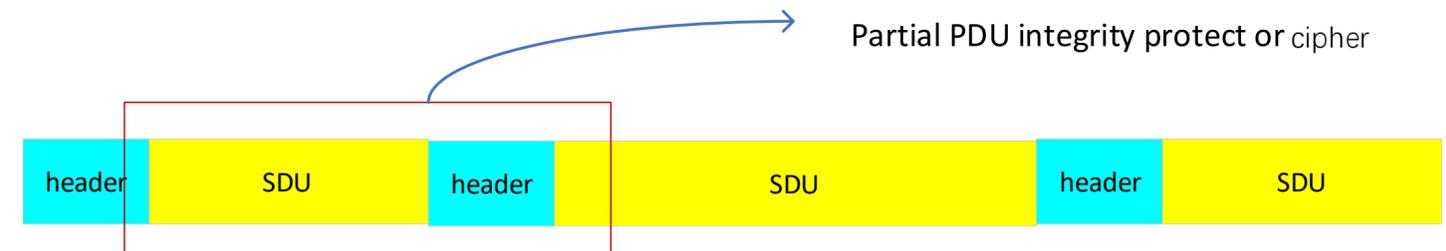
Both integrity and encrypt processing time are reduced with PDCP Concatenation.

L2 UP protocol enhancements

- PDCP SDUs concatenation or Partial PDU security



PDCP SDUs concatenation



Partial PDU Security needs to be confirmed by SA3.

- **Objective:** Study and specify the L2 UP protocol enhancement for PDCP concatenation.

L2 UP protocol enhancements

- **Reduce the unnecessary RLC PDU retransmission**

- RLC AM receiving window driven by its lower edge, i.e. RX_Next
- The PDU at lower edge will be retransmitted until successful reception or reaching the Maximum retx number, i.e. RLF and re-estab.
- PDCP performs Re-ordering operation
 - When t-reordering timer expires, receiving window is updated. After that, retransmission in RLC may continue. Even if retransmission in RLC is successful, packet will be discarded in PDCP, which wastes radio resources

- **Objective: Study and specify to avoid the unnecessary RLC PDU retransmission after the corresponding t-reordering timer expires in PDCP.**

- Initial



- T-reordering expires



The unnecessary RLC PDU retransmission should be avoided.

THANK YOU.

谢谢。