

Considerations on Regenerative Payload in Rel-19 NR NTN

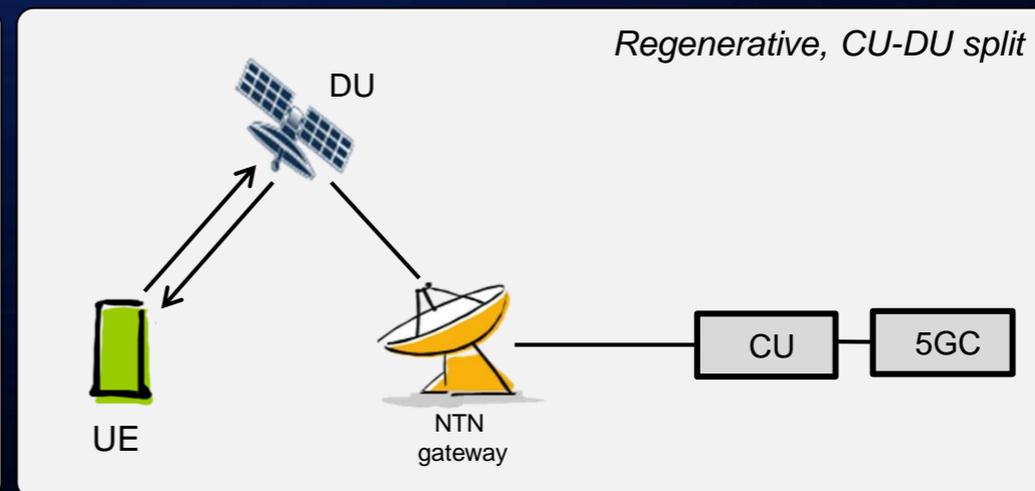
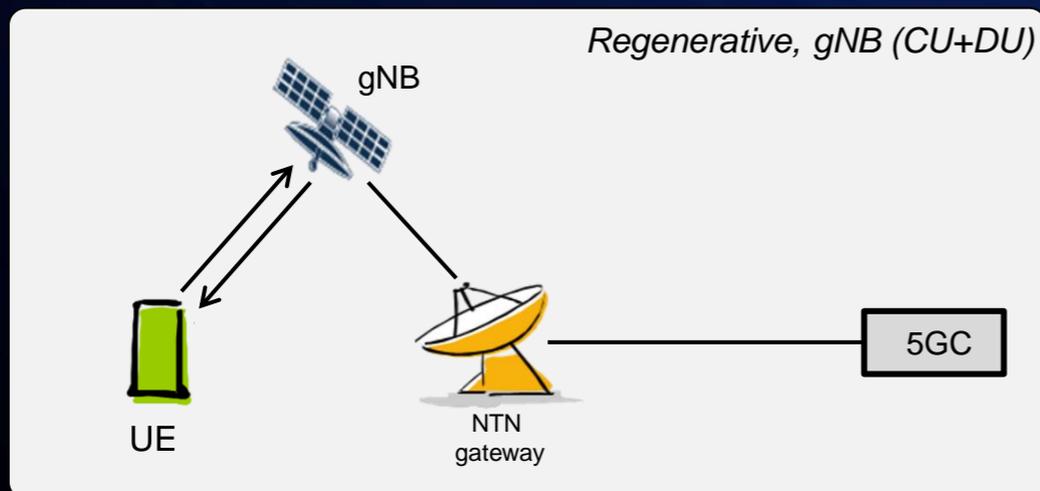
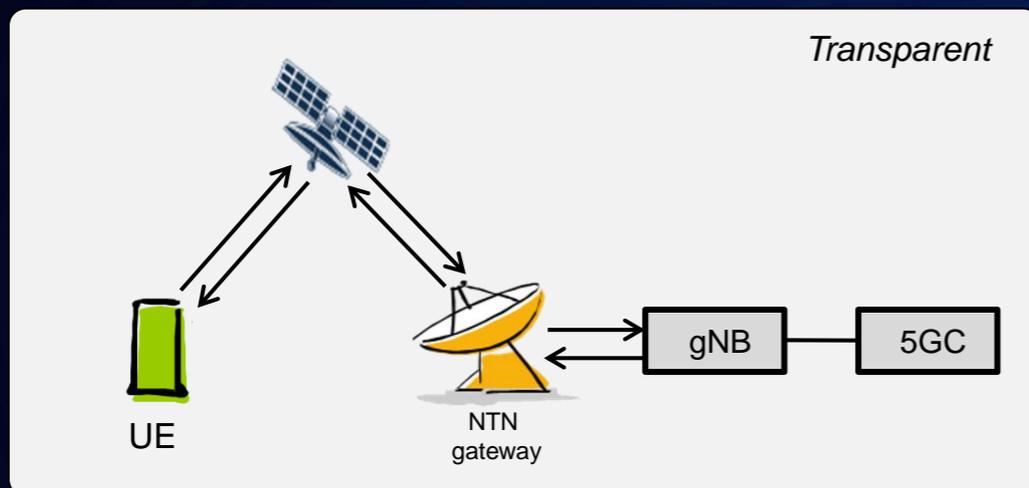


Introduction

- **The specification of NTN Rel-17 and Rel-18 WIs has received much attention from both mobile communication and satellite operators, focusing on transparent payload. To enhance the user experience of mobile users, it's beneficial to support regenerative payload in Rel-19.**
- **In TSG RAN meeting #99, the following was proposed to support regenerative payload (RP-230405).**
 - Support regenerative payload and ISL for NTN in Rel-19.
 - Prioritize the full gNB on satellite case, with/without ISL should be considered.
- **We also discuss support for regenerative payload for NTN in Rel-19 from a RAN perspective.**

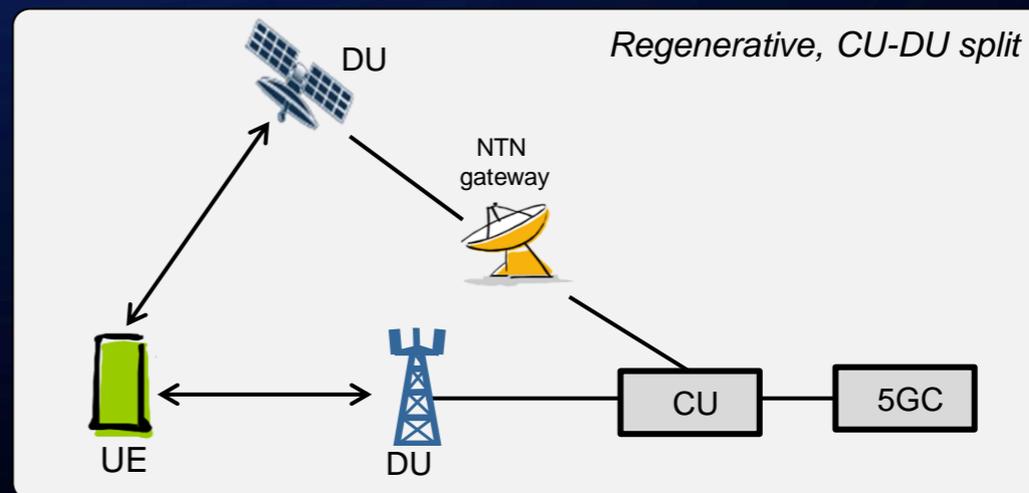
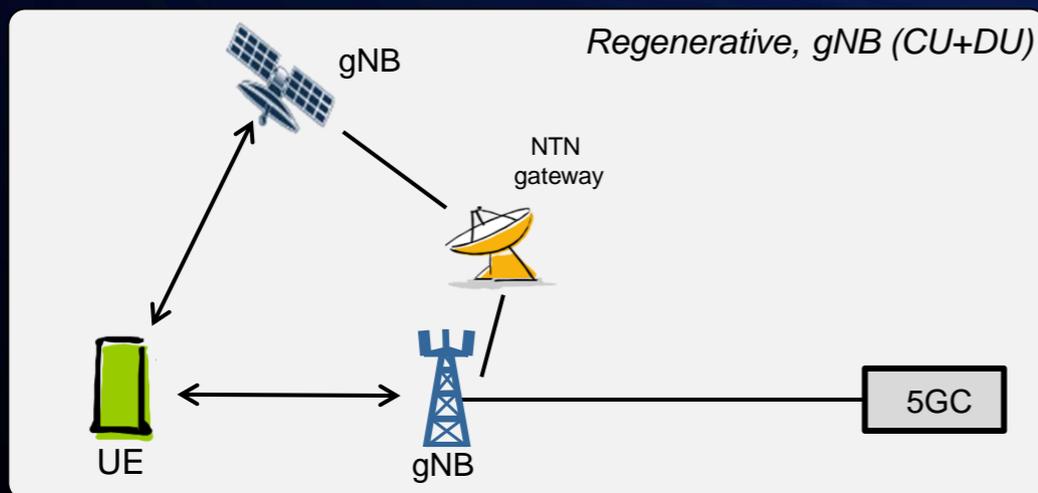
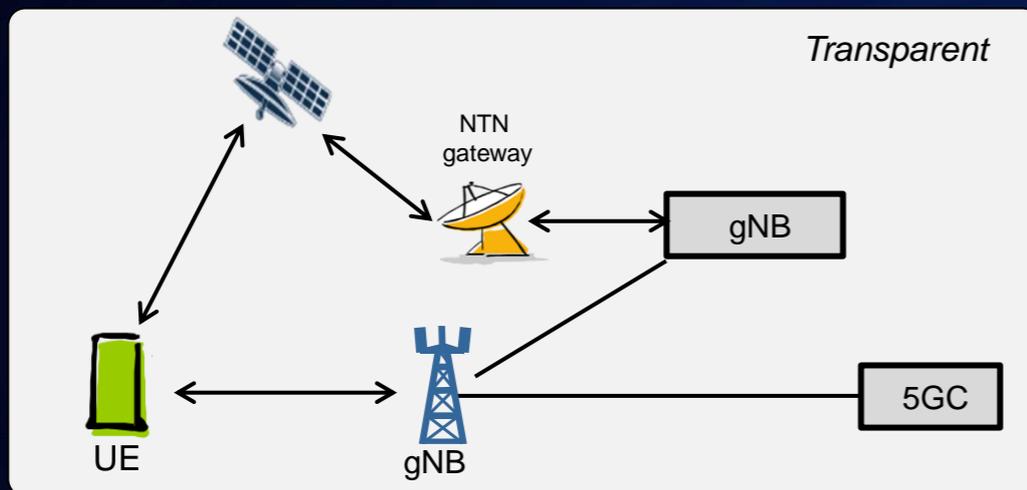
Discussion

- Support regenerative payload with no preference on full gNB or CU-DU split
 - Thanks to the shorter UE-gNB distance, the delay between UE and gNB (i.e., NR Uu) is reduced compared with that using transparent payload.
 - Regenerative payload would be much effective when the NTN gateway is located very far from the satellite.



Discussion

- Support regenerative payload with no preference on full gNB or CU-DU split
 - In dual connectivity scenario,
 - With transparent payload: PDCP layer would suffer from waiting for ACK and RLC SDUs from satellite link.
 - With regenerative payload: the PDCP latency would be reduced considering the retransmission (e.g., HARQ, RLC AM) at satellite.



Conclusion

- This contribution presented views on regenerative payload in Rel-19, also we suggest as follows:
- **Proposal:** Support regenerative payload with no preference on full gNB or CU-DU split in NTN Rel-19

Thank You.

