

3GPP TSG RAN Rel-19 workshop

RWS-230067

Taipei, June 15 - 16, 2023

Agenda Item: 5

Source: vivo

Title: UE aggregation enhancement in Rel-19

Document for: Discussion

• Background & Motivation

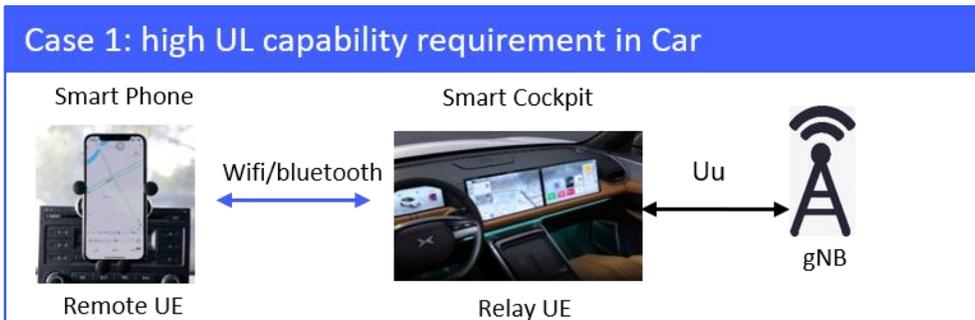
• Background

- R18 has specified the UE aggregation with restrictions on UE-UE inter-connection for the Scenario 2 in SL relay.
- R18 has specified the UE aggregation in PDCP layer for the Scenario 2 in SL relay.
- R18 has specified the UE aggregation with one-to-one UE relationship for the Scenario 2 in SL relay.

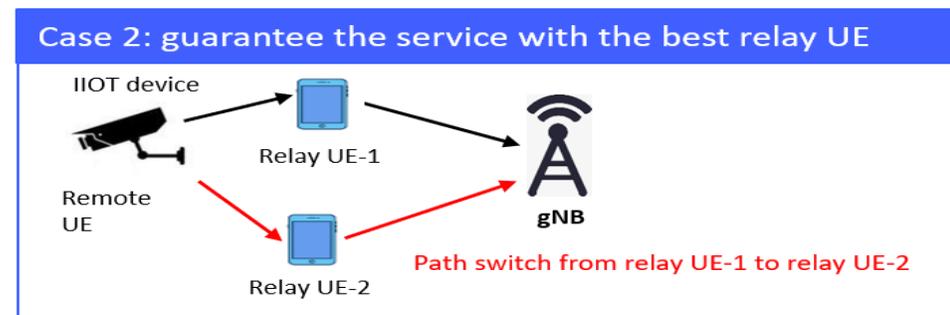
• Motivation in R19

- Support inter-UE vendor aggregation for UE-UE inter-connection for the Scenario 2 in SL relay
 - Flexible association of remote UE and relay UE
- UE aggregation via short range communication link
- The service may be interrupted when the indirect link failed without other relay UE(s) to backup.
- UE aggregation in lower layer to achieve power saving, resource efficiency and better robustness
 - URLLC service transmission for IIOT device esp. at cell-edge
 - XR device with limited UL capability or low power consumption requirement
 - Back up for Device and Transmission line is widely used in smart grid
- Leftovers from Rel-18 SL relay

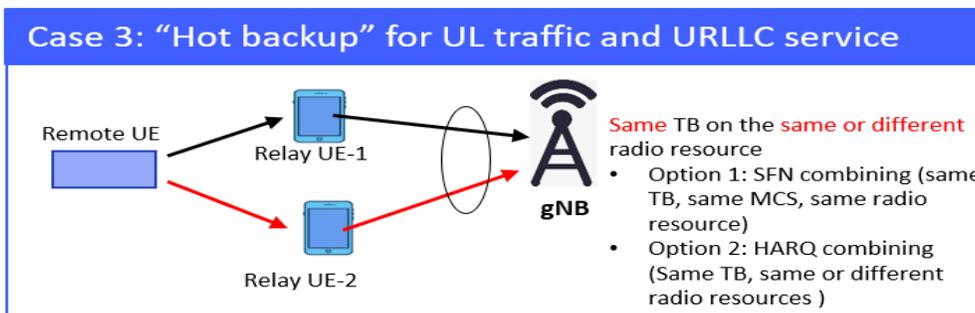
• Potential new scenarios for Rel-19



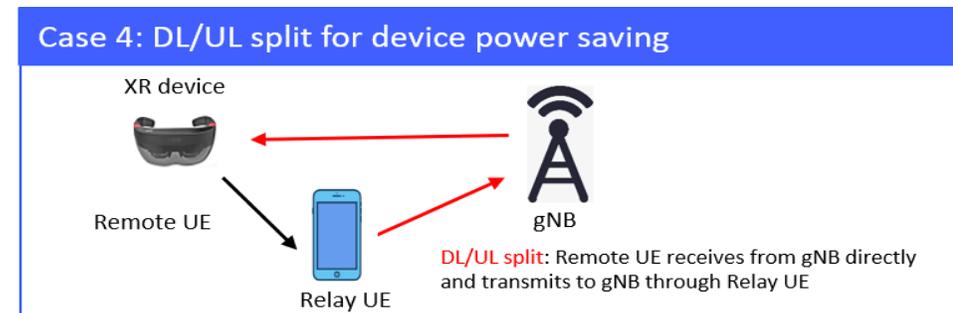
Smart UE with limited UL capability esp. in high-mobility state car on high way.



Service may be interrupted when indirect link failed w/o backup relay UE(s)



URLLC service transmission for IIOT device esp. at cell-edge or "Hot backup" for UL traffic from multiple UEs, e.g., UE-2 backup UE-1.



XR device with limited UL capability or low power consumption requirement

• Proposal

RAN to agree to specify further enhancement on UE aggregation for the following scenarios:

- **Case 1:** Enhancement of Rel-18 Multi-path scenario 2 UE- to-UE link to support high UL capacity requirement on indirect link
- **Case 2:** More than one relay UE in proximity, select the best relay UE for service continuity.
- **Case 3:** URLLC service transmission for IIOT device esp. at cell-edge. "Hot backup" for UL traffic from multiple UEs
- **Case 4:** XR device with limited UL capability or low power consumption requirement.

• Objective for Rel-19

- Specify adaptation layer over UE-to-UE link, in case Rel-18 multi-path scenario 2 [RAN2].
- Support authorization and flexible association mechanism between remote UE and relay UE , in case Rel-18 multi-path scenario 2 [RAN3, RAN2].
- Signaling procedure enhancement to support fast Multi path establishment or switching , in case Rel-18 multi-path scenario 2 [RAN2, RAN3].
 - Indirect path only CP procedures e.g., paging, system info delivery, RRC connection control, indirect path establishment or switch.
- Identify enhancement to define the best relay UE selection to support more than one relays [RAN2].
- Study and specify lower layer UE aggregation solutions to achieve better robustness, resource and power efficiency [RAN2, RAN1].
 - Introduce service based group scheduling
 - Association between UEs with same service
- Specify signaling procedure to support Rel-18 leftover, such as U2U/U2N Multi-hop

THANK YOU.

谢谢。