

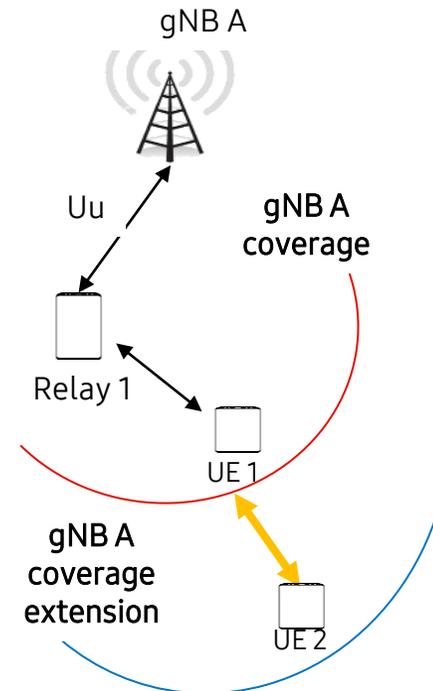
Sidelink Relay for multi-hop support in Rel-19

Background and Motivation (1/2)

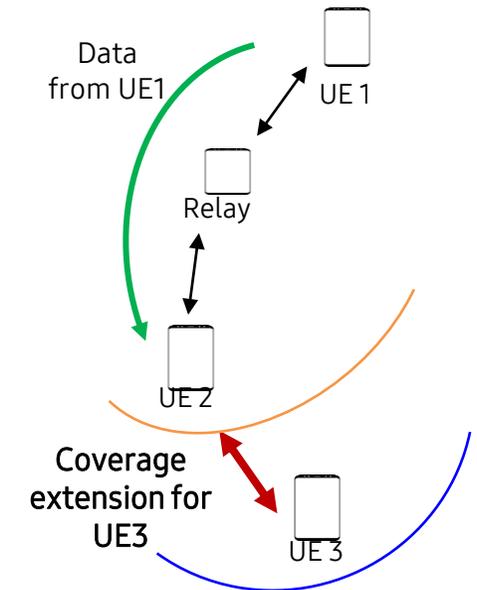
Sidelink relay has been evolved for two releases, and the remaining scenario is to support multi-hop for public safety use cases.

- Rels-17 & 18 cover various scenarios, including UE-to-Network (with service continuity and even multi-path) and UE-to-UE, but only limited to a single hop.
- Public safety use case is one of the key justification for sidelink feature, and the wide coverage is crucial especially in this particular use case.
➔ multi-hop needs to be supported.

[Multi-hop in U2N relay]



[Multi-hop in U2U relay]



Background and Motivation (2/2)

Support of multi-hop has several significant technical challenges.

- Both UE-to-network and UE-to-UE relay should be studied.
 - UE-to-network may require updates of timers for Uu operation, if needed (as an extension of Rel-17).
 - Relay discovery and relay (re)selection defined earlier releases can be further improved.
 - Relay UE and remote UE require mutual authorization, with consultation from SA3/SA2.
- Path management and routing can be studied.
 - The existing Relay adaptation layer can be extended to support routing.
 - QoS support needs to be addressed by taking into account delay and congestion of the relay(s) due to multi-hop.

Potential Objectives of the WI

The detailed objective of the work item, if proceeded, would be:

- Specify mechanisms to support multi-hop UE-to-NW relay and multi-hop UE-to-UE relay for unicast [RAN2, RAN3]
 - Common part for Layer-2 and Layer-3 relay
 - Relay discovery and (re)selection, if any enhancement is needed for multi-hop [RAN2]
 - Signalling support for relay UE and remote UE authorization if SA2 concludes it is needed [RAN3]
 - Layer-2 relay-specific enhancements
 - Relay adaptation layer for multi-hop support [RAN2]
 - Control plane procedures [RAN2, RAN3]
 - QoS handling, e.g., congestion control of multi-hop [RAN2]