

3GPP TSG RAN Rel-18 workshop
Electronic Meeting, June 28 - July 2, 2021

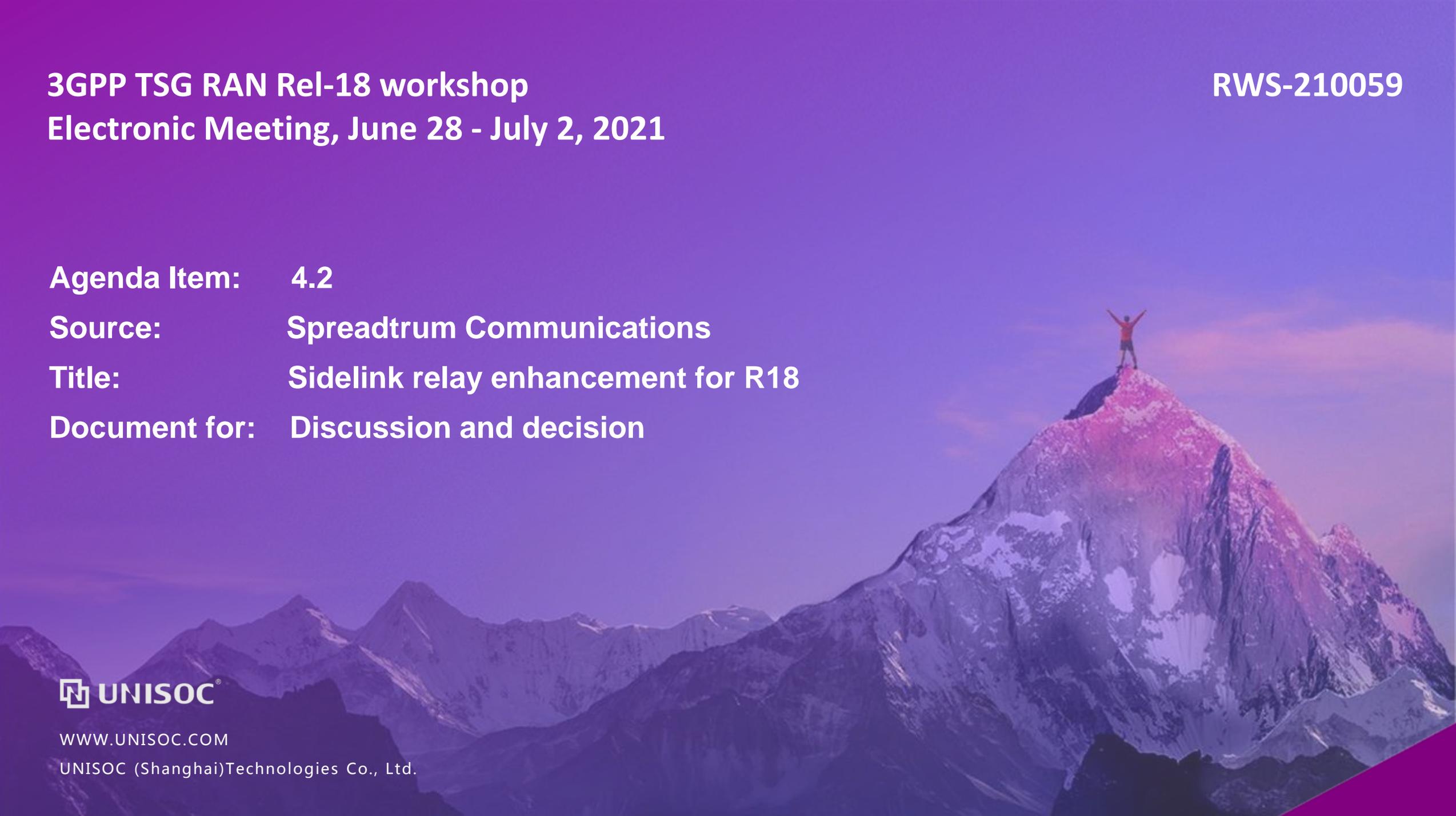
RWS-210059

Agenda Item: 4.2
Source: Spreadtrum Communications
Title: Sidelink relay enhancement for R18
Document for: Discussion and decision



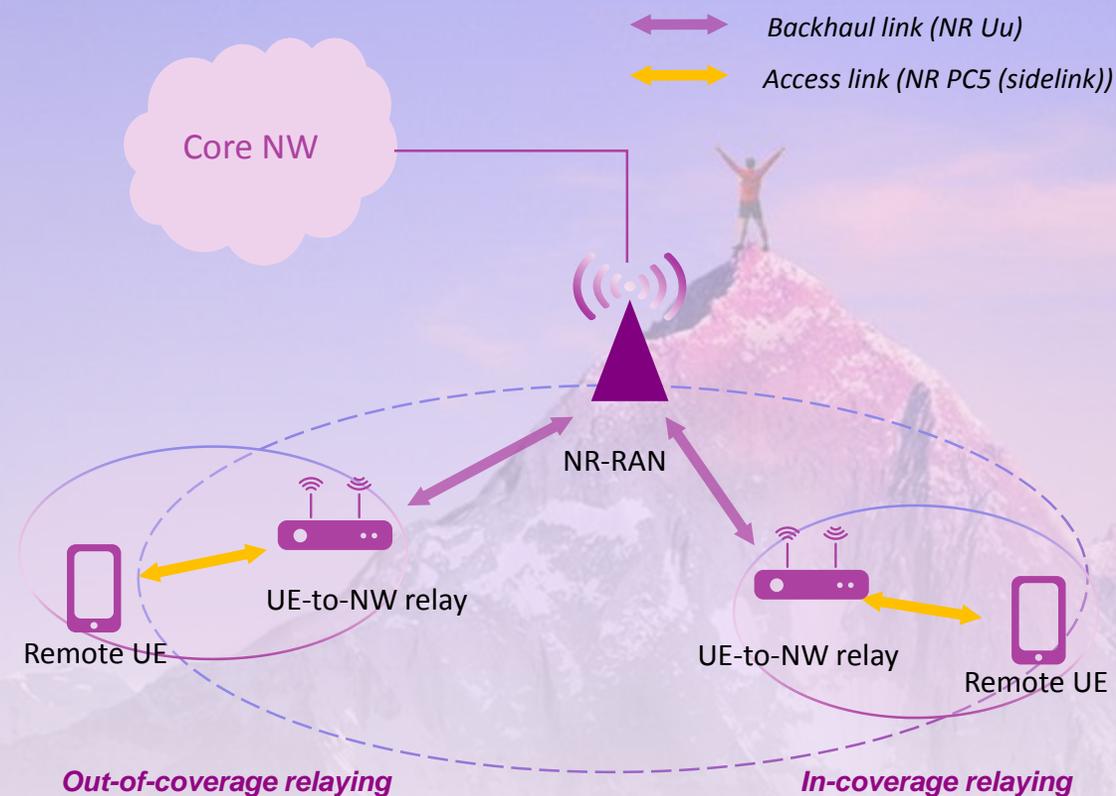
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Things are being worked on in Rel-17

- NR sidelink-based, L2 and L3 based UE-to-Network (U2N) relaying is expected to be supported:
 - Single-hop
 - Single-path
 - Unicast-only relaying
 - Served by gNB only
 - No support for group-mobility
 - No support for inter-gNB path switching
 - No support for indirect/indirect path switching
 - No support of DAPS and CHO



Requirements for Rel-18 sidelink relaying (1)

➤ Rel-17 leftover

- Support of UE-to-UE relaying
 - Studied in SI phase but excluded from normative phase in Rel-17;
 - Expected to be supported for public safety;
 - Both unicast and groupcast service shall be supported, e.g. stateful and stateless relay.
- Support of relay served by ng-eNB
 - The ng-eNB concept makes use of existing 4G radio network, allowing it to coexist with the gNBs.

➤ Support of multiple hops

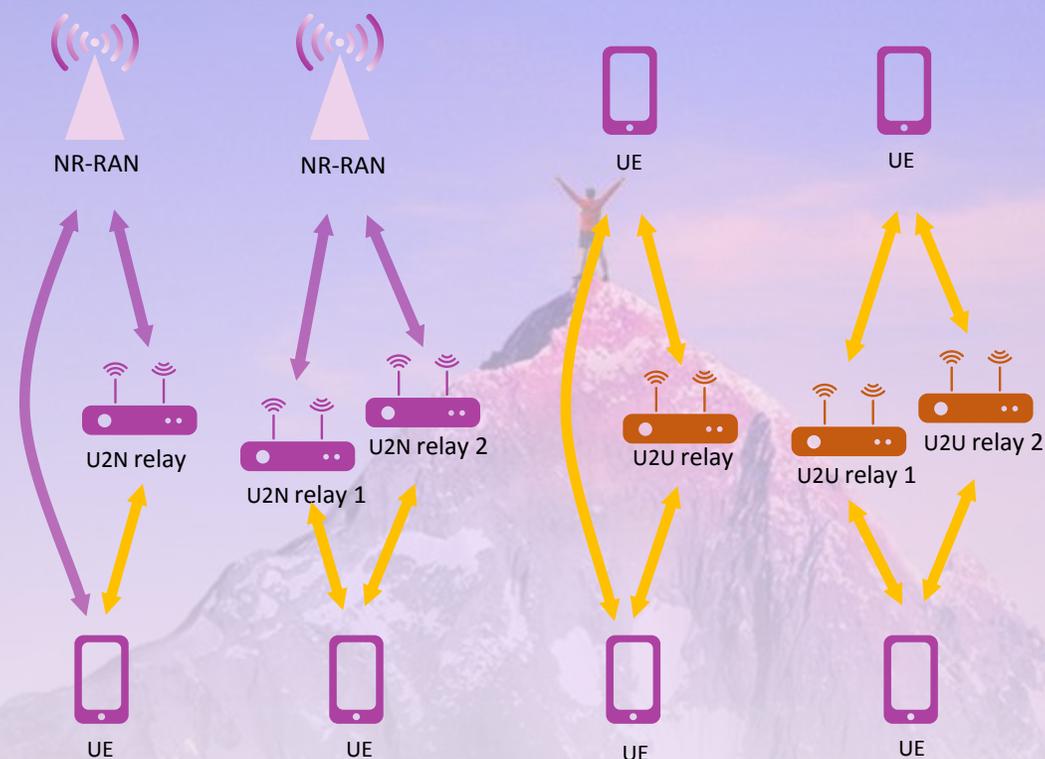
- In clause 6.9.1 of TS 22.261, requirements for multi-hop U2N relay is specified;
- There can be one or more relay UE(s)(more than one hop) between the network and the remote UE.

➤ Support of multiple paths

- Multi-path relaying can provide benefits on robustness and reliability.

➤ Support of MBS service relaying

- MBS architecture standardization for 5G-NR is ongoing;
- MBS service relaying should be supported in Rel-18.

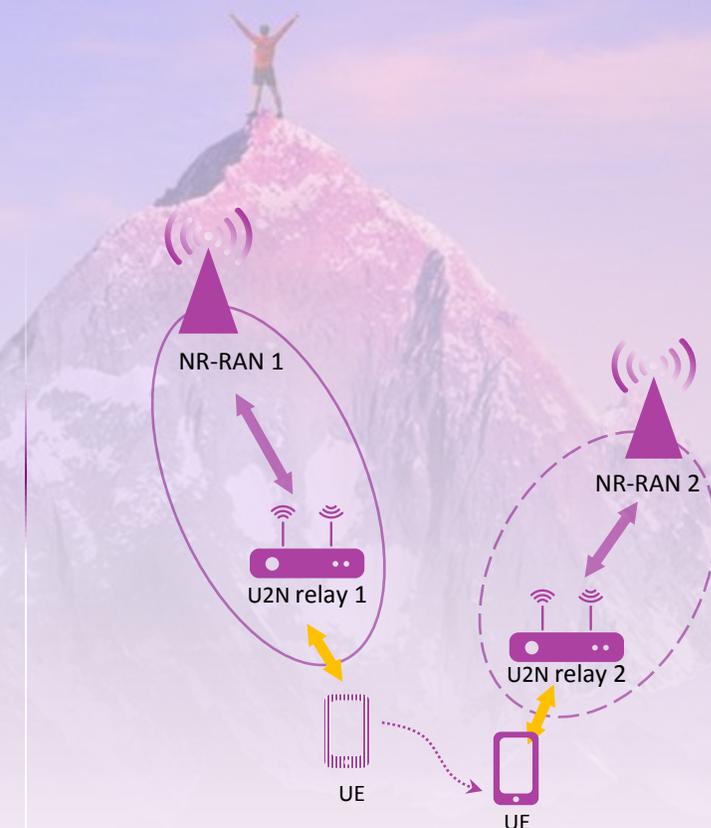
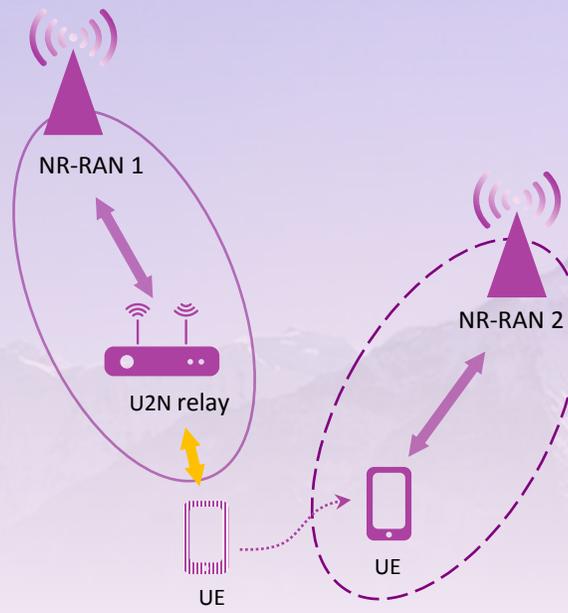
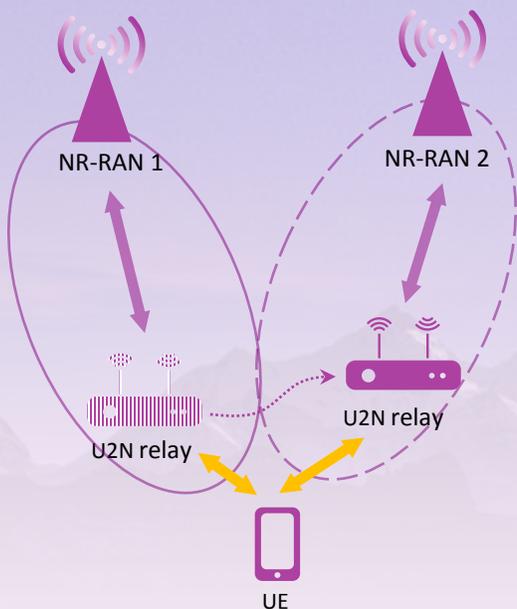


Examples for multiple paths for U2N and U2U relay

Requirements for Rel-18 sidelink relaying (2)

➤ Mobility enhancements

- Support for group-mobility
 - *To reduce signaling overhead and data transmission/reception interruption between relay UE/remote UE.*
- Support for inter-gNB path switching
 - *A valid mobility scenario that happens frequently.*
- Support for indirect/indirect path switching
 - *Service continuity can be preserved during indirect/indirect path switching.*
- Support of DAPS and CHO
 - *HO interruption and HO failure probability can be reduced.*



Proposals for sidelink relay in Rel-18

- Support of U2U relaying
 - Specify Relay discovery/Relay (re)selection/CP and UP procedure for both stateful and stateless U2U relay
- Support of relay served by ng-eNB
- Support of multiple hops (U2N and U2U)
- Support of multiple paths (U2N and U2U)
- Support of MBS service relaying (U2N)
- Mobility enhancements (U2N):
 - Support of group-mobility
 - Support of inter-gNB mobility
 - Support of indirect/indirect path switching
 - Support of DAPS and CHO



Thank you

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