

3GPP TSG RAN Meeting #102

RP-232877

Edinburgh, Scotland, December 11-15, 2023

Agenda item: 9.1.2.5 Additional RAN2-led Topics

Views on additional RAN2-led topics

NEC

Overview of Rel-19 RAN2 additional topics

- ◆ The following topics have received great attention and support even if they are listed as additional topics. The current status for those are as follows from the summary (RP-232627):

- UAV

10.3 Conclusions on UAV

The following conclusions were reached by the group:

- ⇒ Large operator support for UAV (NTT Docomo, Reliance Jio, CMCC, KT, LGU plus, DT, Verizon, China Unicom, AT&T) as one of the most important Rel-19 topics (within the items in this offline) from a commercial and mission critical perspective.
- ⇒ Architectural changes will not be part of the UAV work (i.e. any architectural enhancements can be considered under NTN)
- ⇒ Starting point of an acceptable objective:
 - Mobility enhancements
 - Specifying new CHO triggering events
 - Studying/specifying LTM enhancements for UAV
 - No transmit zone (if SA2 will also do work on this)
 - Enhancements for RRC_IDLE/RRC_INACTIVE

- SL relay

10.1 Summary/Conclusions on SL relay

The following conclusions were reached by the group:

- ⇒ There is support from companies for SL relay especially to cover the public safety applications
- ⇒ A starting point for an acceptable objective if it is in Rel-19 package:
 - Support for multi-hop L2 relaying for U2N
 - For further discussion: multi-path enhancements multi indirect paths for a remote UE
 - Concerns from multiple companies on the time required for this additional scope

UAV Evolution

◆ Motivation

- Rel-19 should support features and deployment scenarios not covered in Rel-18, considering further improvements on interference control and mobility performance.
 - Some aspects, including CHO enhancements and RRC_IDLE/RRC_INACTIVE mobility enhancements, have not been taken into full consideration during Rel-18 due to lack of time.
 - ECC decision (22)07 on “harmonized framework on aerial UE usage in MFCN harmonized bands” requires a mechanism to ensure that aerial UEs respect no-transmit zones.

◆ Considerations for Rel-19

- Mobility enhancements
 - CHO/LTM enhancements, i.e., CHO/LTM based on UAV specific triggers
 - RRC_IDLE/RRC_INACTIVE mobility, including:
 - Extend height-dependent RRM parameters to RRC_IDLE/RRC_INACTIVE state
 - Extend Flight path update mechanism to RRC_IDLE/RRC_INACTIVE state
- No transmit zone
 - NTZ information signaling
 - Reports due to moving in/out of NTZ
 - Uplink transmissions adapt to NTZ restrictions

Sidelink relay enhancements

◆ Motivation

■ For U2N SL-Relay,

- Rel-17 restricts U2N to 1-hop only. Coverage can be enhanced by adopting multi-hop relay.
- Due to time constraints, we can prioritize the study for L2 U2N relay.

■ For multi-path relaying

- It is designed on top of U2N relay with only one direct path and one indirect path. Two indirect paths are useful to OOC Remote UE.
- If time permits, we can study this issue.

◆ Considerations for Rel-19

■ For U2N

- Specify necessary enhancements for multi-hop U2N SL-Relay.
 - Multi-hop L2 U2N relay.

■ For multi-path relaying

- Specify necessary enhancements for multi-path relaying of U2N SL-Relay, if time permits
 - Dual indirect links.

Summary

- ◆ For the scope of Rel-19 UAV, we propose to include the following topics:
 - Mobility enhancements on CHO/LTM
 - Mobility enhancements for RRC_IDLE/RRC_INACTIVE state
 - Mechanism to fulfil requirements on no-transmit zone

- ◆ For the scope of Rel-19 sidelink relay, we propose to include the following topics:
 - Specify necessary enhancements for multi-hop U2N SL-Relay.
 - Multi-hop L2 U2N relay.
 - Specify necessary enhancements for multi-path relaying of U2N SL-Relay, if time permits.
 - Dual indirect links.

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