3GPP RAN WG2 Meeting #130 R2-25xxxxx

Malta, Malta May 19th – 23rd, 2025

Agenda Item: 8.13.1

Source: CATT

Title: Open issues of Service Continuity for MH Sidelink Relay in 38.331

Document for: Discussion, Decision

# Introduction

The following document includes a list of open issues according to the following email discussion:

* [Post129bis][401][Relay] Rel-19 relay service continuity CR to 38.331 (CATT)

Scope: Update the service continuity running CR from the baseline of R2-2503071 to take into account decisions of RAN2#129bis.

Intended outcome: Updated CR and open issue list for RAN2#130

Deadline: Long

Companies are invited to provide feedback on open issue list by: **02 May 2025**

# Remaining open issues for specification 38.331

### Scenario C/D

**Open issue RRC-1: Measure Events for scenario C and D**

For scenario A/B, the following agreements on measurement event were agreed.

RAN2#128/129

* Event X1 /X2 can be reused in multi-hop indirect to direct path switching with the understanding that the “first relay UE” in multi-hop relay link is “serving L2 U2N Relay UE” to be reported.
* The following measurement events can be reused in multi-hop indirect to single-hop indirect path switching:

- Event Y2

- Event Z1 with the understanding that the “first relay UE” in multi-hop relay link is “serving L2 U2N Relay UE” to be reported.

RAN2#128/129bis

* Measurement event X2 could be applied to scenario B with multi-hop indirect to single-hop indirect path switching.

Next, we suggest to further discuss that for Rel-19 intra-gNB direct/single-hop indirect to multi-hop indirect path switching (scenario C/D), whether the legacy measurement event could be reused. For example, for scenario C, whether the UE can perform the legacy measurement event Y1/Y2. For scenario D, whether the UE can perform the legacy measurement event X2/Y2/Z1.

**Open issue RRC-2: Contents of report for scenario C and D**

For scenario A/B, the following agreements on measurement event contents were agreed.

RAN2#129

For multi-hop i2d, Remote UE evaluates both relay link (for the link between remote UE and serving first relay UE) and Uu link, where the sidelink relay measurement report shall include at least serving first relay UE's source L2 ID, serving cell ID and sidelink measurement quantity result.

For multi-hop i2d, first relay UE evaluates adjacent upstream relay link and Uu link, where the sidelink relay measurement report shall include at least measured relay UE's source L2 ID, serving cell ID and sidelink measurement quantity result. FFS if intermediate relay UE reports.

For multi-hop i2i, the remote UE reports serving first relay UE and candidate single-hop relay UE(s), including at least a source L2 ID, serving cell ID, and a sidelink measurement quantity information.

For multi-hop i2i, first evaluates adjacent upstream relay link and candidate relay link, where the sidelink relay measurement report shall include at least serving intermediate/ last relay UE's source L2 ID, serving cell ID and sidelink measurement quantity result. FFS if intermediate relay UE reports.

Next, we suggest to further discuss that for Rel-19 intra-gNB direct/single-hop indirect to multi-hop indirect path switching (scenario C/D), what is the contents of measure report? For example, whether Candidate UE’s cell info, Candidate relay UE’s source ID, Measurement result and information indicating whether the measurement result is SL-RSRP or SD-RSRP are reported to the gNB as with legacy is enough. For the enhancement part, whether potential remote UE reports to the gNB the PC5 link qualities of each hops of the path first relay UE belongs or accumulated QoS for the PC5 links (i.e. Achievable PDB).

**Open issue RRC-3: Source relay becomes target for scenario D**

For scenario B, the following agreement on path switch scenarios were agreed.

RAN2#128

For scenario B, RAN2 supports the case that the target U2N relay UE is a new relay UE which is not on the source relay path, and existing Rel-18 indirect path to indirect path switching can be reused.

For scenario B, RAN2 will support the case that the target single-hop relay UE is the last relay UE on the source path using the existing Rel-18 i2i path switching. Spec impact will be minimised.

For scenario B, RAN2 does not specify anything to support the case that that the target U2N relay UE is an intermediate relay UE which is on the source relay path using a single procedure. This case can be handled in the baseline control plane model, if necessary and subject to network implementation, by sequential path switches for the remote UE and the target intermediate relay UE.

Next, we suggest to further discuss that for Rel-19 intra-gNB single-hop indirect to multi-hop indirect path switching (scenario D), which scenario should be supported and potential spec impacts. For example, for scenario D, whether RAN2 supports the case that the target first/intermediate/last relay UE are all new relay UEs which are not the source single-hop U2N relay UE. Whether RAN2 needs to specify anything to support the case that that either the target first/intermediate/last relay UE is the source single-hop U2N relay UE.

# Other identified open issues

Companies are invited to describe any other identified open issues not currently included within this document

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| **Company** | **Other identified open issues? (please describe)** |
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