vivo

3GPP TSG RAN Meeting #98e RP-223107

Electronic Meeting, December 12-16, 2022

Discussion on NR sidelink relay enhancements WID

Source: vivo

Document for: Discussion & Decision

Agenda Item: 9.3.2.4

Necessity for new normative work on Multi-path support

- With regard to the cases where UE-UE iinter-connection is assumed either using L2 U2N Relay PC5 or using ideal link, RAN2#120 and RAN3#118 have concluded that the SI phase on Multi-path support of the following objective:

> ***Study the benefit and potential solutions for multi-path support to enhance reliability and throughput (e.g., by switching among or utilizing the multiple paths simultaneously) in the following scenarios [RAN2, RAN3]:***
>
> ***A UE is connected to the same gNB using one direct path and one indirect path via 1) Layer-2 UE-to-Network relay, or 2) via another UE (where the UE-UE inter-connection is assumed to be ideal), where the solutions for 1) are to be reused for 2) without precluding the possibility of excluding a part of the solutions which is unnecessary for the operation for 2).***
>
> **Note 3A: Study on the benefit and potential solutions are to be completed in RAN#98 which will decide whether/how to start the normative work.**
>
> **Note 3B: UE-to-Network relay in scenario 1 reuses the Rel-17 solution as the baseline.**

- The RAN2 conclusion agreement is reflected as follows:
  - **=> Multi-path relay study phase is complete and can proceed to normative work from RAN2 perspective, for both scenarios 1 and 2**
- The RAN3 conclusion agreement is reflected as follows:
  - **=> From RAN3 point of view, the Multi-path study phase is completed, and the Multi-path can move to normative work phase.**
- **Proposal 1: RANP to agreed on the completion of SI phase on multi-path support for both scenario 1 and scenario2.**
- **Proposal 2: RANP to approve a new normative work on multi-path support for both scenario 1 and scenario 2.**

Use cases for Multi-path support for scenario 1

- For multi-path scenario 1, RAN2 has made the following agreements:
  - Proposal 1-1A (modified): The following cases are to be supported for Scenario 1.
    - A.The remote UE operating only on the direct path adds the indirect path under the same gNB;
    - B.The remote UE operating only on the indirect path adds the direct path under the same gNB;
    - C.The remote UE operating in multi-path releases the indirect path;
    - D. The remote UE operating in multi-path releases the direct path;
    - G. The remote UE operating in multi-path changes to a new relay UE for the indirect path while keeping the direct path under the same gNB. FFS if this case would be supported via separate release-and-add (A+C in separate reconfigurations) or a single switch procedure (e.g. similar to i2i service continuity).
  - Proposal 1-1B (modified): The following case is to be not supported for Scenario 1 as a group mobility scenario.
    - F. The remote UE configured with multi-path keeps the serving relay UE for the indirect path and the serving cell of the remote UE for the direct path while the serving relay UE changes the serving cell of the relay UE under the same gNB;
  - The following case can be supported via separate release-and-add for scenario 1 (B+D in separate reconfigurations):
    - E.The remote UE operating in multi-path changes the direct path to a different cell of the same gNB while using the serving relay UE for the indirect path under the same gNB

- **Proposal 3: RANP to agree on normative works for the following scenario 1 use cases A, B, C, D, E, and G.**

Use cases for Multi-path support for scenario 2 (1)

- For multi-path scenario 2 RAN2 has made the following agreements:
  - Proposal 1-2A: The following cases are proposed to be supported for Scenario 2.
    - A. The remote UE configured only on the direct path adds the indirect path under the same gNB;
    - C. The remote UE configured with multi-path releases the indirect path;
  - Proposal 1-2B: The following case is proposed to be not supported for Scenario 2.
    - F. The remote UE configured with multi-path keeps the serving relay UE for the indirect path and the serving cell of the remote UE for the direct path while the serving relay UE changes the serving cell of the relay UE under the same gNB;
  - Proposal 6a [RAN2 to discuss] case B and case D are not supported for Scenario 2.
  - Proposal 9 (modified) [RAN2 to discuss] For Scenario 2, Case E is not supported.
  - For Scenario 2, whether to support Case G is discussed in normative phase, but RAN2 will not do additional work to enable it for Scenario 2 over Scenario 1.

- **Proposal 4: RANP to agree on normative works for the following scenario 2 use cases A and C as baseline.**

Use cases for Multi-path support for scenario 2 (2)

- For Scenario 2, whether to support Case G is discussed in normative phase, but RAN2 will not do additional work to enable it for Scenario 2 over Scenario 1.

- As RAN2 agreements can show, for scenario 2, RAN2 had not made any definitive decision on whether to support **case G** or not. But, as RAN2 has agreed to support **case G** for scenario 1 and RAN2 had also agreed that "RAN2 will not do additional work to enable it for Scenario 2" to support **case G** for scenario 2. therefore, two options can be considered on handling of case G for scenario 2:
  - **Option 1**: Add support **case G** for normative work for scenario 2, with assumption that RAN2 will not do additional work to enable it for Scenario 2 over Scenario 1
  - **Option 2**: Add a note in the WID to just reflect that "whether to support **case G** is discussed in normative phase". For example: NOTE 3X: whether to support Case G is discussed in normative phase.
- As RAN2 has agreed to work on case G for scenario 1 and RAN2 also assumed that RAN2 will not do additional work to enable it for Scenario 2 over Scenario 1, we think adding case G for scenario 2 in the WID would not require additional effort, we think Option 1 is simple and would minimize WI phase some discussion on whether to support case G. Therefore,

- **Proposal 5: RANP to agree on normative works for scenario 2 use case G as proposed in RP-223108.**

vivo

THANK YOU.
谢谢。