**3GPP TSG-RAN WG2 #119-e *R2-220xxxx***

**E-meeting, August 2022**

Agenda Item: 6.7.1

Source: OPPO

Title: Summary of  [AT119-e][417][Relay] Communication and discovery terminology (OPPO)

Document for: Discussion, Decision

# Introduction

This is for the following email discussion

* [AT119-e][417][Relay] Communication and discovery terminology (OPPO)

      Scope: Clarify the definitions of “NR sidelink communication” and “NR sidelink discovery” across 38.300, 38.321, and 38.331.  Discussion in R2-2207021 can be used as a starting point.

      Intended outcome: Report to CB session

      Deadline: Tuesday 2022-08-23 1200 UTC

# Discussion

As raised in 7021:

Proposal 1 RAN2 discusses to clarify the definition of “NR SL communication” and “NR SL discovery” across specifications.

Email-Rapp observed CR-rapp:s have already tried to align the terminology in the Rapp-CR

For 331, 8484 proposed the following way-out

**NR sidelink communication**: AS functionality enabling at least V2X Communication as defined in TS 23.287 [55], and 5G ProSe Direct Communication and ProSe UE-to-Network Relay communication for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.

**NR sidelink discovery**: AS functionality enabling 5G ProSe Direct Discovery and ProSe UE-to-Network Relay discovery for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.

For 321, 7449 proposed the following way-out

**NR sidelink communication**: AS functionality enabling at least V2X Communication as defined in TS 23.287 [19] and ProSe communication (including ProSe Relay communication) as defined in TS 23.304 [26], between two or more nearby UEs, using NR technology but not traversing any network node.

**NR sidelink discovery**: AS functionality enabling at least ProSe discovery and ProSe UE-to-Network relay discovery as defined in TS 23.304 [26], between two or more nearby UEs, using NR technology but not traversing any network node.

**NR sidelink transmission**: All NR Sidelink-based transmissions (including transmission for both NR sidelink discovery and NR sidelink communication).For 300, V17.1.0 adopted the following definition

**NR sidelink communication**: AS functionality enabling at least V2X communication as defined in TS 23.287 [40] and the 5G Proximity based Services (ProSe) as defined in TS 23.304 [48], between two or more nearby UEs, using NR technology but not traversing any network node.

So firstly, there seems some convergence on defining “NR sidelink Communication” and “NR sidelink discovery” separately, i.e., avoid overlapping between the two terminology, and considering that, good to align the definition wording, e.g.,

**NR sidelink communication**: AS functionality enabling at least V2X Communication as defined in TS 23.287 [19] and ProSe communication (including ProSe UE-to-Network Relay and Non-Relay communication) as defined in TS 23.304 [26], between two or more nearby UEs, using NR technology but not traversing any network node.

**NR sidelink discovery**: AS functionality enabling 5G ProSe non-Relay Discovery and ProSe UE-to-Network Relay discovery for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.

Q1: Do you agree the terminology definition proposed above to be adopted by 331/321/300?

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Comment |
| OPPO | Agree | No strong view yet, just some minor points:  1. our SA2 colleague told me that “5G ProSe Direct Communication/discovery” (sometimes) includes relay case as well, so maybe safer to avoid it, but use relay/non-relay which is more comprehensive.  2. when it comes to relay, I use UE-to-Network as the prefix, in order to be more future proof. |
| Xiaomi | Agree | Seems all possible services are covered. Maybe ‘at least’ in the definition can be removed?  For 321, the ‘UE-to-Network’ is missing in NR sidelink communication. |
| Apple | Agree | We are fine to align 321 definition to 331/300 spec, if it is agreed here to use the above definitions, we will update MAC CR correspondingly. |
| vivo | Agree | It is good to make definitions crystal clear and consistent across (at least) all RAN2 Specs. |
| Sharp | Agree |  |
| Samsung | Agree |  |
| Futurewei | - | No strong view. But we noticed that in TS 38.321, “transmission of NR sidelink communication” is often stated separately from “transmission of V2X sidelink communication”, e.g., there are many such instances on Page 58 and the following is just one example:  2> if there are neither transmission of NR sidelink communication nor transmission of V2X sidelink communication at the time of the transmission; or  We need to carefully check, for each instance, whether there is redundancy or whether the redundancy can be removed. |
| Qualcomm | Agree |  |
| ZTE | Agree |  |
| Ericsson | Agree with comments | But it seems the definitions for discovery in the three specs are slightly different.  In 38.331, it uses “5G ProSe Direct Discovery”  **NR sidelink discovery**: AS functionality enabling 5G ProSe Direct Discovery and ProSe UE-to-Network Relay discovery for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.  In 38.321, it uses “ProSe discovery”  **NR sidelink discovery**: AS functionality enabling at least ProSe discovery and ProSe UE-to-Network relay discovery as defined in TS 23.304 [26], between two or more nearby UEs, using NR technology but not traversing any network node.  In 38.300, it uses “5G ProSe non-Relay Discovery”  **NR sidelink discovery**: AS functionality enabling 5G ProSe non-Relay Discovery and ProSe UE-to-Network Relay discovery for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.  It is important to use a common term to represent non relay discovery.  We are fine to select any one of the above three. |
| CATT | Agree | Besides to keep consistent across R2 spec, just wonder whether some further extend will be considered together, i.e. R18 U2U relay case. |
| Nokia | Agree | The proper use of these agreed terms should be carefully checked in all specifications. |
| Huawei, HiSilicon | Agree | Agree to align the terminology across RAN2 specifications.  “5G ProSe Direct Discovery and 5G ProSe UE-to-Network Relay Discovery” used in 8484 for RRC CR is copied from TS 23.304, and the intention is to avoid misunderstanding between RAN and SA2. Please note there is no term of “non-relay” defined in 23304. But if majority thinks “non-relay v.s. relay” is clearer, we are fine with it. |
| InterDigital | Agree | We agree with the intention. A few comments: 1) is “at least” needed. 2) Should be use ProSe or 5G Prose – either is fine but should align the definitions for discovery and communication with this. |
| Lenovo | Agree | In the below proposal “Relay and non-Relay” should ideally appear in the same order in both the definitions (i.e., for communication and for discovery). |

Rapp comment: Clear majority companies agree. Different view on “at least” by Xiaomi and Interdigital.

1. Align the terminology definition 38.331/38.321/38.300 as follow: 1) NR sidelink communication: AS functionality enabling at least V2X Communication as defined in TS 23.287 [19] and ProSe communication (including ProSe non-Relay and UE-to-Network Relay communication) as defined in TS 23.304 [26], between two or more nearby UEs, using NR technology but not traversing any network node. 2) NR sidelink discovery: AS functionality enabling ProSe non-Relay Discovery and ProSe UE-to-Network Relay discovery for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.

Secondly, since in most places in 321, there is no need to differentiate between communication and discovery, thus MAC CR-rapp suggest another term “SL transmission” to cover both.

**NR sidelink transmission**: All NR Sidelink-based transmissions (including transmission for both NR sidelink discovery and NR sidelink communication).Q2: Do you agree the terminology definition proposed above to be adopted by 321?

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Comment |
| OPPO | Agree |  |
| Xiaomi | Agree |  |
| Apple | Agree | This would also simplify the description of Uu/SL prioritization in TS 38.321 with the following word substitution:  *“Transmission oof NR sidelink communication” 🡺 “NR sidelink transmission”* |
| vivo | Agree | Perhaps we can say “NR sidelink based transmission”? Previously, people sometimes used to use NR sidelink transmission to mean NR sidelink communication transmission. If we can have a “based” added in between, it appears to be more like a higher-level description encompassing both discover and communication. |
| Sharp | Agree |  |
| Samsung | Agree |  |
| Futurewei | - | No strong view on whether to introduce this term in 38.321. we need to carefully check, for each instance where an original term will be replaced by this new term, whether the original term was meant to limit to the transmission of NR sidelink communication only or the transmission for NR sidelink discovery only, or it was meant to refer to any NR sidelink-based transmission in a broader sense.  And, if we are to introduce this term, we prefer the following text:  **NR sidelink transmission**: Any NR Sidelink-based transmission, including both transmission for NR sidelink discovery and transmission for NR sidelink communication). |
| Qualcomm | Agree |  |
| ZTE |  | No strong view, as comments above, if introduced, we may need carefully check through 38.321. |
| Ericsson | agree |  |
| CATT | See comments | We share the same view as Futurewei and ZTE. |
| Nokia |  | No strong view. We have similar comment as above: introducing this new term requires careful consistency check in 38.321 |
| Huawei, HiSilicon | Agree |  |
| InterDigital | Agree |  |
| Lenovo | Agree |  |

1. Rapp comment: Clear majority companies agree. Some rewording suggestion by Futurewei.Adopt the definition in 38.321: NR sidelink transmission: Any NR Sidelink-based transmission, including both transmission for NR sidelink discovery and transmission for NR sidelink communication).

# Conclusion

We have the following proposals

[Proposal 1 Align the terminology definition 38.331/38.321/38.300 as follow: 1) NR sidelink communication: AS functionality enabling at least V2X Communication as defined in TS 23.287 [19] and ProSe communication (including ProSe non-Relay and UE-to-Network Relay communication) as defined in TS 23.304 [26], between two or more nearby UEs, using NR technology but not traversing any network node. 2) NR sidelink discovery: AS functionality enabling ProSe non-Relay Discovery and ProSe UE-to-Network Relay discovery for Proximity based Services as defined in TS 23.304 [65] between two or more nearby UEs, using NR technology but not traversing any network node.](#_Toc112167524)

[Proposal 2 Adopt the definition in 38.321: NR sidelink transmission: Any NR Sidelink-based transmission, including both transmission for NR sidelink discovery and transmission for NR sidelink communication).](#_Toc112167525)

# Reference

R2-2207021 Terminology alignment for Communication and Disocvery OPPO discussion Rel-17 NR\_SL\_relay-Core

R2-2207449 Miscellaneous corrections for NR Sidelink Relay (rapporteur CR) Apple CR Rel-17 38.321 17.1.0 1318 - F NR\_SL\_relay-Core, NR\_SL\_enh-Core

R2-2208484 RRC corrections for sidelink relay Huawei, HiSilicon CR Rel-17 38.331 17.1.0 3427 - F NR\_SL\_relay-Core