**3GPP TSG-RAN WG2 #112-e *Draft\_R2-201xxxx***

**E-meeting, November 2020**

Agenda Item: 8.7.1

Source: OPPO

Title: Summary of [AT112-e][601][Relay] Status update to SA2 (OPPO)

Document for: Discussion, Decision

# Introduction

This is for the discussion below

* [AT112-e][601][Relay] Status update to SA2 (OPPO)

Scope: Generate a summary of RAN2 status on relaying for SA2

* Report status of both L2 and L3 relaying designs as well as architecture-independent aspects (including issues in R2-2008760), in order to coordinate with SA2 for reaching conclusions
* Capture any points where we assume SA2 will resolve an issue

Intended outcome: Approvable LS in R2-2010862

Deadline: Friday 2020-11-13 0000 UTC

# Discussion

Firstly, this LS has to solve the questions from SA2 included in R2-2008760

*- SA2 assumes Direct Discovery message will be transmitted in PC5 communication channel, RAN2 is kindly asked to confirm this assumption.*

Given the following text in SID, rapporteur assume it is the assumption in RAN WGs since the very beginning.

1. *Study mechanism(s) to support upper layer operations of discovery model/procedure for sidelink relaying, assuming no new physical layer channel / signal [RAN2];*

**Q1a: Do you agree RAN2 to confirm the SA2 assumption that “Direct Discovery message will be transmitted in PC5 communication channel”?**

* **Yes;**
* **No;**

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| Company | Yes/No | Comments |
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And also the following question

*- SA2 has agreed “Destination L2 ID, Source L2 ID; Discovery Group ID” will be included in discovery messages, RAN2 is kindly ask whether they can be included in an AS layer, e.g. in MAC header.*

If following the R16 design, source L2 ID and Desination L2 ID are carried jointly by SCI and MAC header

* 8 bit in SCI and 16 bit in MAC header, for source L2 ID
* 16 bit in SCI and 8 bit for MAC header, for destination L2 ID

And group ID is reflected as the destination L2 ID for group-cast.

So to respond SA2 on the question above, considering RAN1 is not involved in this sidelink relay, rapporteur understand it is not preferred to go for a different MAC PDU format which may impact RAN1 as well.

**Q1b: For SA2 question on whether the “Destination L2 ID, Source L2 ID; Discovery Group ID” can be included in an AS layer, e.g., in MAC header:**

* **Option-1: RAN2 assume reusing the R16 MAC PDU design as above;**
* **Option-2: Other (please explain the option);**

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| Company | Option | Comments |
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Then for the following question from SA2

*SA2 kindly requests RAN2 to provide the progress and work plan if any to help SA2 evaluation and conclusion.*

Firstly, to provide the *work plan* in a general level, a drafted version has been provided in R2-2010676

*RAN2 is studying Direct Discovery procedure, UE-to-Network Relay and UE-to-UE Relay solutions in the study on NR Sidelink Relay (FS\_NR\_SL\_Relay). In this study, both Layer-2 based solution and Layer-3 based solutions are discussed in RAN2, for which the latest study progress is summarized in TR 38.836. The study phase is to be completed at RAN2#113-E.*

**Q2a: To provide SA2 with the RAN2 work plan, do you agree with the text above?**

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| Company | Comments |
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Furthermore, for the detailed progress, before reaching for an agreeable text, rapporteur would like to consult companies view on the point that needs to be put into the LS.

**Q2b: To provide SA2 with more detailed information on RAN2 study progress, which aspect(s) do you think should be included in the LS?**

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| Company | Comments |
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Finally, in order to address the following aspect for this discussion

* *Capture any points where we assume SA2 will resolve an issue*

It is good to sync with SA2 on the aspects that RAN2 assumes to rely on SA2 decision.

By checking the TR 38.836 V0.1.1, rapporteur understands there are in general the following aspects for which RAN2 relies on SA2 decision:

1. Achiecture/Protocol stack decision for L3 relay (i.e., 4.6.1 for U2N relay, and 5.6.1 for U2U relay);
2. QoS mechanism decision for L3 relay (i.e., 4.6.2 for U2N relay, and possibly 5.6.2 for U2U relay, although empty so far)
3. Security mechanism decision for L3 relay (i.e., 4.6.3 for U2N relay, and possibly 5.6.3 for U2U relay, although empty so far)
4. PC5-S layer procedure design (although now only in 4.6.5, rapporteur assume it is a valid assumption for both L2/3 and U2N/U2U Relay)

**Q2c: To provide SA2 with more detailed information on RAN2 assumption on SA2 decision, which aspect(s) do you think should be included in the LS?**

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| Company | Aspect 1/2/3/4 above, or others | Comments |
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1. xxx.

# Conclusion

We have the following proposals:

[Proposal 1 xxx.](#_Toc55254145)

# Reference

1. R2-2008760 LS on Direct Discovery and Relay in SA2 (S2-2006587; contact: Oppo) SA2 LS in Rel-17 FS\_5G\_ProSe To:RAN2 Cc:RAN1
2. R2-2010693 LS on SA2 progress on UE-to-Network Relay and UE-to-UE Relay (S2-2007945; contact: OPPO) SA2 LS in Rel-17 FS\_5G\_ProSe To:RAN2, SA3
3. R2-2008926 [Draft] Reply LS on Direct Discovery and Relay CATT LS out Rel-17 5G\_V2X\_NRSL-Core To:SA2 Cc:RAN1
4. R2-2010676 [Draft] Reply LS on Direct Discovery and Relay OPPO LS out Rel-17 FS\_NR\_SL\_relay To:SA2 Cc:RAN1