**3GPP TSG RAN Meeting #93-e RP-21xxxx**

**Electronic Meeting, September 13 - 17, 2021**

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**Source:** LG Electronics (moderator)

**Title:** Email discussion [93e-14-Sidelink-Progress] on the progress of Rel-17 NR sidelink enhancement WI

**Document for:** Report

# **Introduction**

This contribution summarizes the email discussion [93e-14-Sidelink-Progress] on the progress of Rel-17 NR sidelink enhancement WI. Input contributions covered: RP-211782, 1783, 1790, 1807, 2034.

# **Discussion: Initial round**

2.1. SL-DRX applicability to ProSe service

Q1: [RP-211782, OPPO] proposed to confirm that the R17 SL-DRX design does not exclude ProSe direct communication, discovery, and UE-to-Network relay parts. It also proposed to send an informative LS to SA2 and CT1. A WID revision was proposed in RP-211783.

Please provide your view on this.

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| Company | Comment |
| OPPO | In R17, according to SA/CT spec, ProSe can be divided into **relay**-related and **non-relay**-related parts, for both **communication** and **discovery**. 1. For **non-relay-**related ProSe **communication**, we understand it is straightforward to be included in R17 since no additional work is needed. Otherwise, it means **no support of SL-DRX for public safety and commercial use case** at all in R17.
2. For **relay**-related ProSe **communication**, we understand it is straightforward to be included in R17 since no additional work is needed. Otherwise, we wonder how one can exclude it from the support of SL-DRX, i.e., for a UE which is involved in both relay and non-relay related ProSe communication, since the two can happen in the same resource pool, **if there is no DRX support for relay-related communication, the power saving gain for non-relay-related ProSe communication will disappear as well**.
3. For **relay**-related ProSe **discovery**, the only additional work is to agree on the usage of **default SLDRX configuration** for ProSe discovery. Otherwise, we wonder how one can exclude it from the support of SL-DRX, i.e., for a UE which is involved in both relay-related discovery and non-relay related ProSe communication, since the two can happen in the same resource pool, **if there is no DRX support for relay-related discovery, the power saving gain for non-relay-related ProSe communication will disappear as well**.
4. For **non-relay-**related ProSe **discovery**, the same logic as described above in 3) holds. But surely, it is pending the conclusion of [93e-23-SLRelay-WI], i.e., whether it is to be supported in R17.

After RAN conclude on each aspect of the four above, an informative LS is helpful for SA2/CT1 to know the RAN decision for alignment on normative work in R17. |
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2.2. RAN guidance to finalize the WI

Q1: [RP-211790, Samsung] proposed to confirm that any part not completely specified by RAN#94-e will be down scoped by default.

Please provide your view on this.

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| Company | Comment |
| OPPO | While we think this approach is possible for the inter-UE coordination objective (i.e., scheme1 with option 1 and option 2, scheme 2 with option 1), but this principle may not be applicable for the power saving RA and SL-DRX objectives, as currently for these two objectives the WGs are working on only the essential functionalities. If some of these essential functionalities are not included, then the whole feature will not function properly. We can review the progress of R17 SL enhancement WI in December again and make appropriate action based on the latest status then. |
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Q2: [RP-211807, OPPO] proposed to recommend RAN1 and RAN2 to adopt simple solution whenever possible. In addition, it proposed to increase the TU for this WI in Q4 by 0.5 – 1 while minimizing Rel-16 sidelink maintenance in Q4.

Please provide your view on this.

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| Company | Comment |
| OPPO | It is always recommended to adopt simple solution whenever possible in the technical design to complete basic/essential functionalities in this work item, and not to spend time on enhancements that are “nice to have” or features that provides minimal gains or flexibility that does not have obvious technical benefits.It is noticed that RAN1 chair has announced no maintenance discussion in October. We think this is a good idea / practice also for the November WG meeting and RAN2 as well, at least for this R17 WI. If it is too much hassle to increase to the TU in RAN for a R17 WI, then it can be up to WG chair’s best judgement to flexibly increase the amount of online and offline discussion time for this WI to speed up the progress. |
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Q3: For inter-UE coordination, [RP-211790, Samsung], [RP-212034, LGE] proposed specify/prioritize only a single solution for each of scheme 1 with preferred resources, scheme 1 with non-preferred resources, and scheme 2, respectively.

Please provide your view on this.

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| Company | Comment |
| OPPO | Generally, OK. We also would like to stop discussing FFS points on “other topics” or “other values” in both power saving RA and inter-UE coordination agendas in RAN1. |
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Q4: For power efficient resource allocation, [RP-212034, LGE] proposed to focus on introducing the baseline in the WID (i.e., “the principle of Rel-14 LTE sidelink random resource selection and partial sensing”) and deprioritize other enhancements beyond this. It also proposed to minimize RAN1 discussion time for the relation between partial sensing and sidelink DRX and strive for defining resource allocation solutions that are commonly applicable to a TX UE configured with sidelink DRX for its own data reception and a TX UE not performing its own data reception.

Please provide your view on this.

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| Company | Comment |
| OPPO | In the power saving RA agenda in RAN1, we followed closely the R14 LTE-V based random selection and partial sensing schemes for NR sidelink, and incorporated some enhancements (as needed and allowed by the WID) to take into account of small reservation periodicities and aperiodic transmissions. In this sense, we don’t need to remind RAN1 that R14 principle should be used as the baseline. From LGE’s proposal, we should focus on the sidelink DRX part only.For the topic on relation between partial sensing and sidelink DRX, it can be categorized in two technical aspects. Firstly, the relation between the actual monitoring of slots (including RSRP measurement) and SL-DRX has been discussed for many meetings due to the LS from RAN2. In the last meeting, RAN1 finally reached the following agreement and replied to RAN2.***Agreement***A UE can perform SL reception of PSCCH and RSRP measurement for sensing during its SL DRX inactive time.* FFS: When such reception and measurement is performed, whether it is subject to specification, or is up to UE implementation
* FFS: Other details

For this first technical aspect, it seems to adopt the rule that “the monitoring of slots is commonly applicable to a TX UE configured with sidelink DRX for its own data reception and a TX UE not performing its own data reception.” That is, when the reception and measurement is performed, it is up to UE implementation, to close the first FFS bullet. And there is no need to treat the second FFS bullet.The second technical aspect is related to determination of the candidate resource set *SA* and its relation to RX UE sidelink DRX. While it is possible to leave everything to UE implementation to align with SL-DRX on duration, but a specific question / action has been asked by RAN2 in an LS R2-2108997 for which RAN1 should provide a response LS. We think at least for this issue, we should have a technical discussion in the next RAN1 meeting. If a simple agreement can be reached, this issue can be closed. If not, everything is leave it to UE implementation regarding partial sensing in sidelink DRX.If the intention is to completely decouple the relationship between partial sensing and sidelink DRX, then we suggest to remove the following bullet from the WID objective and instruct RAN1 not to spend time in finding solution and replying to RAN2’s LS in R2-2108997.This work should consider the impact of sidelink DRX, if any. |
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Q5: If you think there are any other topics to discuss, please specify them.

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