3GPP TSG-RAN WG2 Meeting #116-e electronic R2-21xxxxx
Online, November 1 – 12, 2021

Agenda Item: 10.8

Source: Session Chair (Samsung)

Title: Report from session on LTE V2X and NR SL

Document for: Approval

Time Schedule
Please refer to the latest schedule in the RAN2 inbox on the public 3GPP servers.

## List and Status of Offline Email Discussions

**[POST] Email discussion**

* [POST116-e][7xx][V2X/SL]

**[AT] Email discussion**

* [AT116-e][701][V2X/SL] 38.331 running CR (Huawei)

 **Scope:** Continue the discussion on the issues in R2-2109607 and prepare 38.331 running CR for endorsement.

 **Intended outcome:** Discussion summary in R2-2111416 and 38.331 running CR in R2-2111417. Proposals and CR will be approved by email.

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][702][V2X/SL] 38.321 running CR (LG)

 **Scope:** Continue the discussion on the issues in R2-2110157 and prepare 38.321 running CR for endorsement.

 **Intended outcome:** Discussion summary in R2-2111418 and 38.321 running CR in R2-2111419 (if needed). Proposals and CR will be approved by email.

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][703][V2X/SL] SL-DRX for ProSe (LG)

 **Scope:** See whether any specification efforts are needed to support SL DRX in relay-related ProSe communication/discovery (including assessments in R2-2110106 and R2-2109908). L2 relay and L3 relay can be discussed in separate.

 **Intended outcome:** Discussion summary in R2-2111420.

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][704][V2X/SL] Need of additional new considerations (NEC)

 **Scope:** Discuss the need of additional new aspects proposed in P1/R2-2109722, P4/R2-2109812, P1/R2-2109937, P1/R2-2110062, P12/R2-2110155, P5/R2-2110938, P1-P2/R2-2111119, and possible solutions if the need is agreed.

 **Intended outcome:** Discussion summary in R2-2111421

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][705][V2X/SL] SL DRX for SL-CSI reception (Xiaomi)

 **Scope:** Discuss SL DRX for SL-CSI reception covering the proposals in P10-P11/R2-2109907, P6/R2-2109937, P3-P4/R2-2110119, P4-P6/R2-2110273, P11-P13/R2-2110650, P1-P2/R2-2111008, P4 and P10/R2-2111065, P12/R2-2111204.

 **Intended outcome:** Discussion summary in R2-2111422

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][706][V2X/SL] Candidate resource selection (including related HARQ RTT issues) (Huawei)

 **Scope:** Discuss candidate resource selection aspects (including related HARQ RTT issues) covering the proposals in P9-P11/R2-2111204, P3/R2-2110225, P1-P5 and P9/R2-2110155, P2/R2-2110119, P4-P9/R2-2110062, P2-P4/R2-2109937, P1-P6/R2-2109936, P12-P15 and P17-P18/R2-2109907, P1-P3/R2-2109724.

 **Intended outcome:** Discussion summary in R2-2111423

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][707][V2X/SL] Miscellaneous CR on 38.331 (Huawei)

 **Scope:** Discuss CRs in R2-2109596, R2-2109630/R2-2109629, R2-2109806/R2-2109804, R2-2110269, R2-2110611, R2-2110795, and R2-2110831, and merge the agreeable changes.

 **Intended outcome:** 38.331 CR in R2-2111424 and discussion summary in R2-211425 (if need)

 **Deadline:** 11/9, 10:00am UTC

* [AT116-e][708][V2X/SL] Miscellaneous CR on 38.321 (LG)

 **Scope:** Discuss CRs in R2-2110159, R2-2109597, R2-2110058, R2-2110829, R2-2109534, R2-2111138, and R2-2110832, and merge the agreeable changes. Note agreements from discussion in R2-2109417, R2-2109418/R2-2109598, and R2-2110152 are also captured.

 **Intended outcome:** 38.321 CR in R2-2111426 and discussion summary in R2-211427 (if need)

 **Deadline:** 11/9, 10:00am UTC

* [AT116-e][709][V2X/SL] PDCP/RLC Entity Maintenance for SL-SRBs (CATT)

 **Scope:** Discuss the issue raised in R2-2110610 and also discuss the possible solutions if the problem is agreed.

 **Intended outcome:** Discussion summary in R2-2111429

 **Deadline:** 11/9, 10:00am UTC

## Approved outgoing LSs

## 4.3 V2X and Sidelink corrections Rel-15 and earlier

Documents in this agenda item will be handled in a break out session.

## 6.2 NR V2X

(5G\_V2X\_NRSL-Core; leading WG: RAN1; REL-16; started: Mar 19; target; Aug 20; WID: RP-200129).

Documents in this agenda item will be handled in a break out session

Tdoc Limitation: See tdoc limitation for Agenda Item 6

CR rapporteurs will take care of miscellaneous CRs to collect small changes. Please contact / coordinate with CR rapporteur company first for small changes (e.g. non-controversial clarification/correction, editorial correction, etc.).

### 6.2.1 General and Stage-2 corrections

Including incoming LSs, rapporteur inputs, etc.

R2-2109311 LS to RAN2 on mode 2 resource reservation period (R1-2108393; contact: Huawei) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN2

* Noted.

R2-2109315 Reply LS on Resource Reselection Trigger sl-reselectAfter (R1-2108438; contact: Apple) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN2

* Noted.

### 6.2.2 Control plane corrections

This agenda item may utilize a summary document on RRC (Huawei).

R2-2111230 Review report for CP contributions Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core

* Noted.
* [AT116-e][707][V2X/SL] Miscellaneous CR on 38.331 (Huawei)

 **Scope:** Discuss CRs in R2-2109596, R2-2109630/R2-2109629, R2-2109806/R2-2109804, R2-2110269, R2-2110611, R2-2110795, and R2-2110831, and merge the agreeable changes.

 **Intended outcome:** 38.331 CR in R2-2111424 and discussion summary in R2-211425 (if need)

 **Deadline:** 11/9, 10:00am UTC

R2-2109596 Miscelleneous CR on 38.331 Huawei, HiSilicon CR Rel-16 38.331 16.6.0 2815 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2109629 Discussion on mode 2 resource reservation period Qualcomm Finland RFFE Oy discussion Rel-16 38.331

* Treated in [AT116-e][707]

R2-2109630 CR to 38.331 on ResourceReservationPeriodList Qualcomm Finland RFFE Oy draftCR Rel-16 38.331 16.6.0 F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2109804 Further issues on multiplexing sidelink logical channels with HARQ feedback enabled vs. disabled Nokia, Nokia Shanghai Bell discussion Rel-16 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2109806 Correction of IE sl-HARQ-FeedbackEnabled Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.6.0 2818 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2110269 Correction on SL RLC parameter configuration vivo CR Rel-16 38.331 16.6.0 2827 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2110611 Corrections on RRC parameter sl-ResourceReservePeriodList CATT CR Rel-16 38.331 16.6.0 2839 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2110795 Inclusion of 0 ms resource reservation period in sl-ResourceReservePeriodList MediaTek Inc. CR Rel-16 38.331 16.6.0 2850 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2110831 Correction on TS 38.331 from the latest RAN1 decision ZTE Corporation, Sanechips CR Rel-16 38.331 16.6.0 2852 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][707]

R2-2110830 Correction on power control parameter ZTE Corporation, Sanechips CR Rel-16 38.331 16.6.0 2851 - F 5G\_V2X\_NRSL-Core

* Revisit it next meeting to provide more time to check RAN1/4.

[ZTE]: RAN4 also does not use this parameter. [Huawei]: Have different understanding on RAN4 status. RAN4 will discuss to use this parameter. [OPPO]: Want to have more time to check RAN4. It would be safer before the removal of parameter. [Ericsson, Qualcomm, Vivo, Intel, Nokia]: Agree with Huawei. [Ericsson]: We should get incoming LS from RAN1 if RAN1 does not use it anymore.

R2-2109628 Mode 2 Resource Reservation Period Qualcomm Finland RFFE Oy discussion Rel-16 38.331 Withdrawn

### 6.2.3 User plane corrections

This agenda item may utilize a summary document on MAC (LG).

R2-2110154 Review Report on MAC CRs LG Electronics France discussion Rel-16 5G\_V2X\_NRSL-Core Late

* Noted.
* [AT116-e][708][V2X/SL] Miscellaneous CR on 38.321 (LG)

 **Scope:** Discuss CRs in R2-2110159, R2-2109597, R2-2110058, R2-2110829, R2-2109534, R2-2111138, and R2-2110832, and merge the agreeable changes. Note agreements from discussion in R2-2109417, R2-2109418/R2-2109598, and R2-2110152 are also captured.

 **Intended outcome:** 38.321 CR in R2-2111426 and discussion summary in R2-211427 (if need)

 **Deadline:** 11/9, 10:00am UTC

R2-2110159 Miscelleneous CR on 38.321 LG Electronics France CR Rel-16 38.321 16.6.0 1168 - F 5G\_V2X\_NRSL-Core Late

* Treated in [AT116-e][708]

R2-2109597 Correction on the dynamic sidelink grants Huawei, HiSilicon CR Rel-16 38.321 16.6.0 1162 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][708]

R2-2110058 Correction on the usage of sl-ReselectAfter Apple, OPPO, Qualcomm Incorporated, Huawei, HiSilicon CR Rel-16 38.321 16.6.0 1167 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][708]

R2-2110829 Correction on TX parameters selection ZTE Corporation, Sanechips CR Rel-16 38.321 16.6.0 1173 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][708]

R2-2109534 Corrections to Sidelink BWP operation Samsung Electronics Co., Ltd CR Rel-16 38.321 16.6.0 1161 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][708]

R2-2111138 Corrections on Parameter Definition of the Formula for Computing CG slots CATT CR Rel-16 38.321 16.6.0 1176 - F 5G\_V2X\_NRSL-Core

* Treated in [AT116-e][708]

R2-2109402 Correction on resource reselection behavior and MCS selection OPPO CR Rel-16 38.321 16.6.0 1158 - F 5G\_V2X\_NRSL-Core

* For the second change, intention is correct but no essential need for correction.
* Agreed with the first change only in R2-2111428.

[LG]: To the current MAC, it is not clear if MCS selection is done before MAC PDU is made. [OPPO]: What is MAC rapporteur view? [LG]: Technically it is correct that MCS selection is done before MAC PDU is made, but MAC specification doesn’t clearly specify that restriction. [Vivo, Qualcomm]: With the current specification, there is nothing wrong. Also note we had same discussion and text in LTE. Consider it is not essential CR. [ZTE, Intel, Nokia]: Support the CR.

R2-2109417 Left issue on maxTransNum OPPO, Apple, Ericsson, Lenovo, Motorola Mobility discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1 RAN2 confirm the revised WA that “UE assumes that next retransmission(s) of the MAC PDU is required when FB is disabled (and PUCCH is configured), for CG, if sl-CG-MaxTransNumList is configured with a value not larger than the number of CG resources available, when sl-CG-MaxTransNum is not reached”.

* Agreed. Will be captured as normative text and wordings will be discussed in [AT116-e][708].

[LG]: It is ok to confirm it but want to add NOTE proposed in R2-2110153 (instead of normative text). [Ericsson, Apple, Intel]: Normative text is preferred for clearer UE behaviour.

Proposal 2 When FB is disabled (and PUCCH is configured), if sl-CG-MaxTransNumList is configured with a value larger than the number of CG resources available, when CG resource is exhausted and sl-CG-MaxTransNum is not reached, UE assumes that next retransmission(s) of the MAC PDU is required and thus reporting NACK.

* Agreed. Will be captured as normative text and wordings will be discussed in [AT116-e][708].

[Vivo, Qualcomm, Huawei]: “CG resource is exhausted and sl-CG-MaxTransNum is not reached” is common to proposal 2 and proposal 3. Why we need to consider each case in separate? We can handle cases in proposal 2 and 3 in common by adding single note. [Ericsson, Lenovo, Apple, Intel, LG]: P2 follows the same principle as P1, we need to specify both cases in P1 and P2. [Apple]: At least P2 is natural to be agreed considering P1 is agreed now. For P3, we just follow what is specified for DG case (not new one). [LG]: Proposal 3 is not so aligned with RAN1 status. In RAN1, it is not up to UE implementation. Do not support the proposal.

Proposal 3 When FB is disabled, if sl-CG-MaxTransNumList is configured with a value larger than the number of CG resources, for DG resource allocated when CG resource is exhausted, it is up to UE implementation to report ACK or NACK.

* Noted.

R2-2110153 Discussion on left issue related to sl-CG-MaxTransNumList LG Electronics France discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1. RAN2 should not confirm the WA at the #116-e meeting without any feedback or reply LS from RAN1.

Proposal 2. If RAN2 attempts to confirm WA at #116-e meeting, it is excessive to have the mode 1 TX UE always transmit the NACK according to the WA, and we can consider adding the following sentence as a NOTE to the MAC specification as a compromised solution:

- NOTE: The MAC entity may determine that the next retransmission(s) of the MAC PDU is required when HARQ feedback is disabled, for CG, if sl-CG-MaxTransNumList is configured with a value not larger than the number of CG resources, when sl-CG-MaxTransNum is not reached.

R2-2110652 Remaining issues on sl-MaxTransNum configuration and UE behaviour vivo discussion Rel-16

* Covered by the discussion on R2-2109417.

R2-2109418 Correction on UL-SL prioritization OPPO, Apple, MediaTek, CATT CR Rel-16 38.321 16.6.0 1159 - F 5G\_V2X\_NRSL-Core

* Noted

R2-2109598 Clarification on the UL and NR SL prioritization Huawei, HiSilicon CR Rel-16 38.321 16.6.0 1163 - F 5G\_V2X\_NRSL-Core

* Noted.

[LG]: Don’t see actual problem from UE point of view (although technically it is correct observation with circular reference). Huawei approach may bring more changes in MAC. [Qualcomm]: Agree with LG. [OPPO]: UL comparison is not used for inter-RAT prioritization. If follow Huawei CR, it is not correct since for inter-RAT prioritization, it refers 5.22.1.3.1a then UL comparison is also used. [Lenovo]: For intra-NR prioritization, if we follow OPPO CR, it is not aligned with RAN2 agreement (SL is prioritized when both UL comparison AND SL comparison are met) since UL comparison is missed. [Session chair]: Can we agree with the principle that we’ll remove the cross reference issue? Then for wordings/actual changes, LG can have further discussion in [AT116-e][708]. [Intel, OPPO, Huawei, Vivo, Lenovo]: Agree with session chair.

* Cross reference issue needs to be removed.
* Detailed wording/update will be further discussed in [AT116-e][708].

R2-2110161 Corrections to prioritization for NR sidelink communication LG Electronics France CR Rel-16 38.321 16.6.0 1169 - F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2110152 Clarification on exceptional pool configuration LG Electronics France discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1. RAN2 has to clarify and decide whether sl-TxPoolExceptional is always a resource pool in which PSFCH is configured or maybe a resource pool in which PSFCH is not configured.

Proposal 2. RAN2 can discuss the following options with respect to proposal 1.

Option 1. If sl-TxPoolExceptional may be a resource pool in which PSFCH is not configured, when the Tx UE transmits HARQ Feedback Enabled MAC PDU using sl-TxPoolExceptional, the switching to HARQ Feedback Disabled MAC PDU transmission shall be supported.

Option 2. If sl-TxPoolExceptional is always a resource pool in which PSFCH is configured, modify the NOTE of MAC specification to specify that sl-TxPoolExceptional is always a resource pool in which PSFCH is configured.

“NOTE 2: The MAC entity expects that PSFCH is always configured by RRC for at least one for each sl-TxPoolSelectedNormal and sl-TxPoolExceptional pool of resources in case that at least a logical channel configured with sl-HARQ-FeedbackEnabled is set to enabled.

[Ericsson]: Can we leave it to network? [OPPO]: MAC rapporteur prefers option2 because it can avoid further discussion and simpler? [LG]: Yes. [OPPO]: Ok with option2, but not sure if we really need to specify it. It may be ok to capture it in the session minutes. [Session chair]: Do we have such a Note for normal resource pool? [LG]: Yes. [Apple, CATT, Qualcomm, Xiaomi, OPPO, Intel]: Support option2. [Vivo, Nokia, IDT, Ericsson]: Assume the time duration to use exceptional resource pool is short. Without any change, the UE may still survive.

* At least one sl-TxPoolExceptional pool is always a resource pool in which PSFCH is configured
* Will be captured as the note in MAC. Detailed wordings will be discussed in [AT116-e][708].

R2-2110832 Correction on HARQ information indication ZTE Corporation, Sanechips CR Rel-16 38.321 16.6.0 1174 - F 5G\_V2X\_NRSL-Core

[OPPO]: Intention is correct. However, we don’t need Note. [LG]: We don’t specify all parameters that are provided to PHY. [ZTE]: Note provides clearer UE behaviour.

* Will be further discussed in [AT116-e][708]

R2-2110446 Correction to Window\_Size for SLRB Samsung CR Rel-16 38.323 16.5.0 0082 - F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2110610 PDCP/RLC Entity Maintenance for SL-SRBs CATT, APPLE, vivo, Huawei, HiSilicon, OPPO discussion 5G\_V2X\_NRSL-Core

* [AT116-e][709][V2X/SL] PDCP/RLC Entity Maintenance for SL-SRBs (CATT)

 **Scope:** Discuss the issue raised in R2-2110610 and also discuss the possible solutions if the problem is agreed.

 **Intended outcome:** Discussion summary in R2-2111429

 **Deadline:** 11/9, 10:00am UTC

R2-2110160 Miscelleneous CR on 36.321 LG Electronics France CR Rel-16 36.321 16.6.0 1527 - F 5G\_V2X\_NRSL-Core Late

=> Withdrawn

## 8.15 NR Sidelink enhancements

(NR\_SL\_enh-Core; leading WG: RAN1; REL-17; WID: RP-202846)

Time budget: 1.5 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 6 threads

### 8.15.1 Organizational

Including incoming LSs, rapporteur inputs, [POST115-e][712], [POST115-e][713], etc.

R2-2109323 Reply LS on SL DRX design (R1-2108580; contact: ZTE) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2 Cc:RAN4

* Previous RAN2 WA “SL DRX should take PSCCH monitoring also for sensing (in addition to data reception) into account if SL DRX is used” is dropped.
* Noted.

R2-2109324 Reply LS on time gap information in SCI (R1-2108622; contact: OPPO) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2

* Will be further discussed based on contributions.
* Noted.

R2-2111220 Reply LS on SL resource selection with DRX (R1-2110662; contact: InterDigital) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2

* Will be further discussed based on contributions.
* Noted.

[Vivo]: Will RAN1 agree with one of three options or can RAN1 agree with none of three options? [IDT]: RAN will agree with one of three options. [Lenovo, Vivo]: RAN2 also needs further discussion, e.g. what the future active time is. [Intel]: We need to wait for more RAN1 progress. [Ericsson, LG]: RAN2 still needs some further discussion, e.g. how MAC provides timing information to PHY. [ZTE, IDT, Huawei]: We can also provide pros and cons from RAN2 point of view. [Qualcomm]: Common part from all three options is PHY provides enough candidate resources corresponding to active time to MAC, however details are different for each option.

R2-2111232 Reply LS on Tx Profile (S2-2107840; contact: LGE) SA2 LS in Rel-17 NR\_SL\_enh-Core, eV2XARC\_Ph2 To:RAN2 Cc:CT1

* Will be discussed in email discussion [POST115-e][716]
* Noted.

[CATT]: The LS indicates RAN2 should make a decision on the information included in TX profile. [Huawei]: One FFS (whether DRX information in TX profile is provided to L2 based on L2 id or service type) is now solved in SA2. We understand TX profile is provided with L2 id.

R2-2111237 LS on PC5 DRX for ProSe (S2-2107979; contact: LGE) SA2 LS in Rel-17 5G\_ProSe To:RAN2 Cc:CT1, RAN1

* Will be further discussed based on contributions.
* Noted.

R2-2109606 RRC running CR for NR Sidelink enhancements Huawei, HiSilicon draftCR Rel-17 38.331 16.6.0 F NR\_SL\_enh-Core Late

* Noted.

[OPPO]: Isn’t the contents in the CR related to open issues in R2-2109607, which actually were not concluded? [Huawei]: Yes, for some. [Ericsson]: We need to keep in mind that undecided open issues should not be included into the CR to be endorsed. [Huawei]: We can note the CR now and continue the discussion on open issues until next week.

R2-2109607 Summary of [POST115-e][713][V2X/SL] 38.331 running CR Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core Late

* Continue the discussion
* [AT116-e][701][V2X/SL] 38.331 running CR (Huawei)

 **Scope:** Continue the discussion on the issues in R2-2109607 and prepare 38.331 running CR for endorsement.

 **Intended outcome:** Discussion summary in R2-2111416 and 38.331 running CR in R2-2111417. Proposals and CR will be approved by email.

 **Deadline:** 11/8, 17:00 UTC

R2-2110158 Running CR of TS 38.321 for Sidelink enhancement LG Electronics France draftCR Rel-17 38.321 16.6.0 B NR\_SL\_enh-Core

* Endorsed and will be baseline for further updates.

R2-2110157 Summary of [POST115-e][712][SL] Discussion on stage 3 open issues in 38.321 running CR LG Electronics France discussion Rel-17 NR\_SL\_enh-Core

* [AT116-e][702][V2X/SL] 38.321 running CR (LG)

 **Scope:** Continue the discussion on the issues in R2-2110157 and prepare 38.321 running CR for endorsement.

 **Intended outcome:** Discussion summary in R2-2111418 and 38.321 running CR in R2-2111419 (if needed). Proposals and CR will be approved by email.

 **Deadline:** 11/8, 17:00 UTC

R2-2111177 Draft Reply LS on PC5 DRX for ProSe LG Electronics France LS out NR\_SL\_enh-Core To:SA2 Cc:CT1, RAN1 Late

### 8.15.2 SL DRX

Including [POST115-e][714], [POST115-e][715][V2X/SL], [POST115-e][716], etc.

R2-2109397 SL-DRX for ProSe OPPO, ZTE, Apple, MediaTek, China Telecom, Spreadtrum, China Mobile, Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core Late

Proposal 1: RAN2 confirm R17 SL-DRX design can support non-relay-related ProSe communication directly without additional specific solution discussion / specification effort.

* Agreed.

[LG]: Understand SA2 does not want to support SL DRX for ProSe. [Xiaomi]: It is RAN2 decision whether to support SL DRX for ProSe [OPPO]: There was no agreement that SA2 does not want to support SL DRX for ProSe. [Intel, Ericsson, Vivo]: Support the proposal.

Proposal 2: RAN2 confirm the R17 SL-DRX design can support non-relay-related ProSe discovery by reusing SL default-DRX configuration used for communication without further additional specific solution discussion / specification effort.

* Agreed.

[Vivo]: Think the proposal is correct in technical point of view. Still question if AS can know whether ProSe discovery is non-relay-related ProSe discovery or relay-related ProSe discovery (although upper layer can indicate that information to L2)? Prefer the joint discussion/conclusion with P3.

Proposal 3: RAN confirm the R17 SL-DRX design can support relay-related ProSe communication / discovery without additional specific solution discussion / specification effortcompared with non-relay-related case.

R2-2110106 Discussion on SL-DRX for ProSe vivo, Ericsson, InterDigital Inc, Lenovo, Motorola Mobility, CATT, ASUSTek discussion

Proposal 3: RAN2 concludes that SL-DRX for ProSe relay discovery and communication is not supported in this release.

[OPPO]: Do other side companies want to exclude all relay scenarios? Probably L3 relay could be supported more easily than L2 relay. [Vivo]: Want to stop the additional discussion/specification efforts for all relay scenarios (including both L2 relay and L3 relay) in Rel-17 due to lack of time. [CATT]: Agree with Vivo. [Qualcomm]: At least L2 relay is excluded in Rel-17 due to more additional specification efforts and lack of time. [Session chair]: Need clear understanding on the specification efforts to support SL DRX in relay-related ProSe communication/discovery. Once the assessment is done by the offline discussion, let’s check the final companies’ views. Unless majority companies want to support SL DRX in relay related ProSe communication/discovery, RAN2 will keep the previous agreement.

* [AT116-e][703][V2X/SL] SL-DRX for ProSe (LG)

 **Scope:** See whether any specification efforts are needed to support SL DRX in relay-related ProSe communication/discovery (including assessments in R2-2110106 and R2-2109908). L2 relay and L3 relay can be discussed in separate.

 **Intended outcome:** Discussion summary in R2-2111420.

 **Deadline:** 11/8, 17:00 UTC

R2-2109938 Confirmation of WA on HARQ RTT Based on SCI InterDigital, Apple, Ericsson, Nokia, MediaTek, Fujitsu, Samsung, Sharp, vivo, Huawei, HiSilicon, Qualcomm, Convida, ZTE discussion Rel-17 NR\_SL\_enh-Core

Proposal 1: RAN2 confirms the working assumption: “SL HARQ RTT timer can be derived from the retransmission resource timing when the SCI indicates a retransmission resource”

* Agreed.

R2-2109415 Discussion on DRX left issues OPPO discussion Rel-17 NR\_SL\_enh-Core

Proposal 3: In case RAN2 pursue the SCI based RTT timer, RAN2 confirm that one-to-one mapping between Tx and Rx resource pools is mandatory for SL DRX.

* One-to-one mapping is needed between Tx and Rx resource pools for derivation of SCI-based RTT timer. We don’t need to specify it.

[Session chair]: We can confirm it in session minutes, but we don’t need to specify it. It’s not new requirement, e.g. one-to-one mapping is already applied for some scenarios (e.g. PSFCH is configured) [Qualcomm, IDT, Ericsson]: Agree with session chair.

Proposal 4: In case RAN2 pursue the SCI based RTT timer, UE only use the immediately next retransmission resource indicated in SCI to derive a single RTT value.

* Agreed.

[IDT]: Does proposal 4 mean, e.g. when SCI contains two retransmission resources in future, HARQ RTT is derived from the first retransmission resource in SCI but for the second retransmission resource, the UE needs to wait for the next SCI? [OPPO]: Yes.

Proposal 5: RAN2 do not confirm the WA until issues in Proposal 3 and Proposal 4 are discussed and solved.

R2-2109396 Summary of [POST115-e][714] OPPO report Rel-17 NR\_SL\_enh-Core

Proposal 1: For the issue that a mode-1 SL grant being provided by network to Tx-UE yet it is not in SL active time of any destination that has data to be sent, for initial transmission, drop the grant. FFS if any spec change.

* Agreed.

[Ericsson]: We can leave it to NW implementation, e.g. NW only schedules during on-duration period. [Lenovo, Huawei]: Agree with the proposal 1 and we need to specify it in MAC. [LG]: If proposal 1 is agreed, we need to specify it in MAC. We can discuss the details later.

Proposal 2: (modified)For the issue that a mode-1 SL grant being provided by network to Tx-UE yet it is not in SL active time of any destination that has data to be sent, for retransmission, drop the grant.

* Agreed.

[Session chair]: Can we have same format as proposal 1? [OPPO, Lenovo, LG, Xiaomi, Huawei, Intel, ZTE]: Agree with session chair. [Ericsson, Apple]: Still think it is good to leave it to NW.

“For the issue that a mode-1 SL grant being provided by network to Tx-UE yet it is not in SL active time of any destination that has data to be sent, for retransmission, drop the grant.”

* Supporting companies: OPPO, Xiaomi, Vivo, Lenovo, Nokia, Huawei, LG, MediaTek, AsusTek, IDT, ZTE, CATT, Convida, Kyocera, Intel, Qualcomm (16)
* Not supporting companies: Ericsson, Apple (2)

R2-2109478 [POST115-e][716][V2X/SL] Identified FFS and open issues (CATT) CATT discussion Rel-17 NR\_SL\_enh-Core

[Easy]:

Proposal 11: [18/19] The onduration timer should be included in the RX UE’s desired SL DRX configuration.

Proposal 12: [19/19] The DRX start offset should be included in the RX UE’s desired SL DRX configuration.

Proposal 13: [19/19] The DRX cycle should be included in the RX UE’s desired SL DRX configuration.

* Agreed with P11 to P13

[Xiaomi]: Do we have single information for multiple SL links? [Session chair]: It may need to be further discussed since P11-P13 don’t propose anything related to the question.

Proposal 18: [17/19] When TX UE doesn’t receive any assistance information from RX UE, TX UE considers that RX UE is ok with any DRX configuration (including no DRX configuration).

* Agreed.

[ZTE]: “with any DRX configuration” includes no DRX configuration also? [CATT]: Yes, it can be up to TX UE. [Apple]: We should decide first if TX UE’s REQ is needed or not. [Session chair]: Let’s discuss P17 first and come back.

Proposal 20: [17/18] For GC, when performing the down-selection of the inactivity timer, select the inactivity timer whose inactivity timer length is the largest one (among multiple ones for the corresponding L2 id) as the selected inactivity timer.

* Agreed.

Proposal 23: [18/18]Common default SL DRX configuration should be used for BC/GC.

Proposal 24: [19/22] The default SL DRX configuration for BC/GC can be used for the DCR message.

Proposal 26: [16/17] RAN2 confirms that DRX configuration for V2X group management signaling is out of RAN2 scope.

[Need further discussion]:

Proposal 1: [8/15] Regarding the mapping relation between TX profiles and releases or feature groups, RAN2 can wait for SA2/CT1 LS reply before further discussion on it.

Proposal 2: [14/18] Regarding How upper layer can provide a TX profile to AS layer via service type or L2 ID, RAN2 can wait for SA2/CT1 LS reply before further discussion on it.

Proposal 3: [13/17] When sl-PUCCH-Config is configured but the PUCCH is not transmitted due to UL/SL prioritization, the starting timing of SL-specific drx-HARQ-RTT-Timer is referring to symbol.

Proposal 4: [13/17] RAN2 agree to revise the agreement made in RAN2#114-e as below:

“When sl-PUCCH-Config is configured (and the PUCCH is transmitted), the UE should start the SL-specific drx-HARQ-RTT-Timer in Uu for the corresponding SL HARQ process in the first slot symbol after the end of the corresponding transmission carrying the SL HARQ feedback via the PUCCH.”

Proposal 5: [13/17] In case of SL-specific drx-HARQ-RTT-Timer is not supported but to support SL-specific drx-RetransmissionTimer, the starting timing of SL-specific drx-RetransmissionTimer is referring to symbol.

Proposal 6: [14/18] The values of both zero and non-zero can be used for the HARQ RTT timer when HARQ feedback is disabled. The further details on configuration of values are FFS.

Proposal 7: [13/19]For sidelink unicast, RAN2 can wait for RAN1 LS reply before RAN2 discuss how to handle the cases that when a transmission may cause these timers (inactivity timer or retransmission timer) to be running at the RX UE when mode 2 Tx UE performs resource selection.

Proposal 8: [15/19]For groupcast, the TX UE selects the resources for the initial transmission associated with any active time (e.g. on duration timer or inactivity timer, or retransmission timer) at the RX UE.

Proposal 9: [15/19]For groupcast, the TX UE selects the resources for the retransmission associated with any active time (e.g. on duration timer or inactivity timer, or retransmission timer) at the RX UE.

Proposal 10: [13/19] It is up to Rx UE’s implementation to determine its desired SL DRX configuration.

Proposal 17: [15/19] The SL DRX assistance information request from Tx UE to Rx UE is not supported in the current release.

* Agreed.

[Huawei]: Reluctant to support P17 now. [Apple]: TX UE’s REQ is helpful for RX UE to know whether TX UE supports DRX or not. [Lenovo]: RX and TX UE would have exchanged capability beforehand. [LG]: Without TX UE’s REQ (possibly including traffic pattern information), how RX UE defines the value of assistance information. [Session chair]: Share the observation with LG, however it seems majority companies consider it is not really required and probably assistance information can be generated with non-optimized way (without TX UE’s traffic pattern information).

[Low priority for online session]:

Proposal 14: RAN2 to further discuss whether the drx-inactivity timer should be included in the RX UE’s desired SL DRX configuration.

Proposal 15: RAN2 to further discuss whether the HARQ RTT timer should be included in the RX UE’s desired SL DRX configuration.

Proposal 16: RAN2 to further discuss whether the HARQ retransmission timer should be included in the RX UE’s desired SL DRX configuration.

Proposal 19: RAN2 to further discuss when the Rx UE rejects the SL DRX configuration included in the RRCReconfigurationSidelink, which PC5-RRC signaling should be sent from Rx UE to Tx.

Proposal 21: RAN2 further discuss whether down-selection of the DRX cycle for BG/CG is necessary when multiple QoS profiles are associated with the same DST L2 ID.

Proposal 22: RAN2 further discuss that whether down-selection of the length of the on-duration timer for BG/CG is necessary when multiple QoS profiles are associated with the same DST L2 ID.

Proposal 25: RAN2 further discuss that whether SL DRX should be applied for the PC5-S messages which are sent after the DCR message and before SL unicast DRX configuration is applied.

R2-2110680 Summary of [Post115-e][715][SL] Determination of DRX timer length and start time(vivo) vivo discussion

[Easy]

[18/18] Proposal 1: For UC/GC/BC, the units of Uu DRX timers are taken as baseline for the following SL-DRX parameters:

- sl-drx-LongCycle and sl-drx-StartOffset in millisecond.

- sl-drx-onDurationTimer in multiples of 1/32 ms (subMilliSeconds) or in ms (milliSecond).

- sl-drx-SlotOffset in multiples of 1/32 ms.

- sl-drx-InactivityTimer in multiple integers of 1 ms.

[18/18] Proposal 2: For unicast/groucast/broadcast, for sl-drx-HARQ-RTT-Timer, the granularity of starting time is at slot-level and the length is also configured in number of slots.

[18/18] Proposal 3: For unicast/groucast/broadcast, for sl-drx-RetransmissionTimer, the granularity of starting time is at slot-level and the length is also configured in number of slots.

[17/18] Proposal 4: The SL DRX timers should be calculated in the unit of physical slot. FFS whether the case may happen that no SL slots are available in UE’s active time and whether/how to solve it.

[18/18] Proposal 5: Similar to Uu, the start of SL-DRX cycle is calculated by the following formula:

[(DFN × 10) + subframe number] modulo (sl-drx-Cycle) = sl-drx-StartOffset

[18/18] Proposal 7: For unicast, for CONNECTED TX UE, RAN2 confirms that sl-drx-StartOffset and sl-drx-SlotOffset are configured to RX UE by TX UE based on gNB configuration.

[18/18] Proposal 8: For unicast, for IDLE/INACTIVE/OOC TX UE, RAN2 confirms that sl-drx-StartOffset and sl-drx-SlotOffset are configured to RX UE by TX UE implementation.

[16/17] Proposal 9: For groucast and broadcast, an equation is introduced to derive sl-drx-startoffset based on DST L2 ID.

[To Be Discussed]

[12/16] Observation 1: the case may happen that TX UE and RX UE can derive different Frame number (SFN/DFN) when calculating SL-DRX start time, if TX UE and RX UE have different synchronization reference source.

Proposal 6: As a consequence of not addressing different synchronization reference source between TX and RX UE, RAN2 confirms the understanding that each UE use its own DFN based on its synchronization reference source when using the formula in Proposal 5 to calculated DRX start time.

Proposal 10: RAN2 to agree one of the following options to conclude the equation used to determine the sl-drx-startoffset :

Option-1:

- n=DST L2 ID MOD N, where N is the total number of sl-drx-startoffset values, and n is an index in the N sl-drx-startoffset values.

Option-5:

- sl-drx-StartOffset (ms) = DST L2 ID MOD sl-drx-LongCycle (ms)

- FFS: sl-drx-SlotOffset

[13/17] Proposal 11: For groucast and broadcast, sl-drx-SlotOffset is also set based on DST L2 ID (i.e., similar to sl-drx-StartOffset).

* [AT116-e][704][V2X/SL] Need of additional new considerations (NEC)

 **Scope:** Discuss the need of additional new aspects proposed in P1/R2-2109722, P4/R2-2109812, P1/R2-2109937, P1/R2-2110062, P12/R2-2110155, P5/R2-2110938, P1-P2/R2-2111119, and possible solutions if the need is agreed.

 **Intended outcome:** Discussion summary in R2-2111421

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][705][V2X/SL] SL DRX for SL-CSI reception (Xiaomi)

 **Scope:** Discuss SL DRX for SL-CSI reception covering the proposals in P10-P11/R2-2109907, P6/R2-2109937, P3-P4/R2-2110119, P4-P6/R2-2110273, P11-P13/R2-2110650, P1-P2/R2-2111008, P4 and P10/R2-2111065, P12/R2-2111204.

 **Intended outcome:** Discussion summary in R2-2111422

 **Deadline:** 11/8, 17:00 UTC

* [AT116-e][706][V2X/SL] Candidate resource selection (including related HARQ RTT issues) (Huawei)

 **Scope:** Discuss candidate resource selection aspects (including related HARQ RTT issues) covering the proposals in P9-P11/R2-2111204, P3/R2-2110225, P1-P5 and P9/R2-2110155, P2/R2-2110119, P4-P9/R2-2110062, P2-P4/R2-2109937, P1-P6/R2-2109936, P12-P15 and P17-P18/R2-2109907, P1-P3/R2-2109724.

 **Intended outcome:** Discussion summary in R2-2111423

 **Deadline:** 11/8, 17:00 UTC

[Session Chair]: What do companies think on the need of 8.15.3 summary (e.g. summarize the proposals and identify/discuss RAN2 issues/scopes that we can make a progress considering the current RAN1 status)? RAN2 can start the discussion based on the summary. Or do companies consider we should still wait for more RAN1 progress? [OPPO, Intel]: For inter-UE coordination, we should wait for more RAN1 progress considering the current RAN1 status. For partial sensing/random selection, we can start discussion. [Ericsson]: RAN1 status on this agenda item is still quite pre-matured and there are many dependencies with RAN1 (including both inter-UE coordination and partial sensing/random selection). We should wait for more RAN1 progress before RAN2 starts the discussion. [LG, Qualcomm, Vivo, Xiaomi, CATT, Lenovo]: Agree with Ericsson. [LG]: As WI rapporteur company, suggest to wait for more RAN1 progress.

R2-2109476 SL DRX Configuration Reporting Mechanism for GC/BC CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2109477 Left issues for Sidelink Unicast DRX CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2109608 Considerations on sidelink DRX for groupcast and broadcast Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2109609 Remaining issues of the sidelink DRX for unicast Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core Revised

R2-2111204 Remaining issues of the sidelink DRX for unicast Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core R2-2109609

R2-2109610 Remaining issues of SL communication impact on Uu DRX Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2109643 Discussion on SL DRX Command SHARP Corporation discussion NR\_SL\_enh-Core

R2-2109720 Further discussion on identified FFS/ open issues of unicast sidelink DRX overall flow NEC Corporation discussion

R2-2109722 Discussion on DRX suspend/resume mechanism NEC Corporation discussion

R2-2109724 DRX Active time, Sensing and Configuration aspects Lenovo, Motorola Mobility discussion NR\_SL\_enh-Core

R2-2109800 Discussion on remaining issues for SL DRX ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2109801 Further consideration on SL DRX configuration ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2109812 Further issues on SL DRX Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_enh-Core

R2-2109813 Discussion on alignment of mode 1 resource allocation and active time of SL Rx UE in SL DRX Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_enh-Core R2-2108469

R2-2109847 SL-DRX configuration for Unicast, Broadcast and Groupcast Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

R2-2109907 Remaining aspects of SL DRX Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2109908 Impact analysis between SL DRX and SL relay Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2109936 Resource Allocation Considering DRX InterDigital discussion Rel-17 NR\_SL\_enh-Core

R2-2109937 Remaining aspects on SL DRX Timers InterDigital discussion Rel-17 NR\_SL\_enh-Core

R2-2109956 Leftover aspects on SL DRX configuration Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2109957 On SL DRX alignment Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2110061 Discussion on remaining issues on SL Impact of Uu-DRX Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2110062 Discussion on Remaining issues of SL DRX Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2110119 Remaining issues on DRX Timers for SL Unicast Spreadtrum Communications discussion Rel-17

R2-2110155 Discussion on remaining issues and further consideration on SL DRX LG Electronics France discussion Rel-17 NR\_SL\_enh-Core

R2-2110162 Open issues on TX centric SL DRX LG Electronics France discussion Rel-17 5G\_V2X\_NRSL-Core

R2-2110223 Discussion on Uu impact Xiaomi discussion

R2-2110224 Discussion on Sidelink DRX for unicast Xiaomi discussion

R2-2110225 Discussion on Sidelink DRX for broadcast and groupcast Xiaomi discussion

R2-2110273 Remaining issues of SL DRX MediaTek Inc. discussion Rel-17 NR\_SL\_enh-Core

R2-2110650 Remaining issues for sidelink DRX vivo discussion Rel-17

R2-2110747 SL data transmission considering SL DRX active time Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

R2-2110937 Further consideration on SL DRX and Uu DRX alignments Samsung Research America discussion

R2-2110938 Open issues on SL DRX operation in groupcast Samsung Research America discussion

R2-2111008 Discussion on remaining issues on Sidelink DRX ASUSTeK discussion Rel-17 NR\_SL\_enh-Core

R2-2111065 Remaining issues for SL DRX timers Lenovo, Motorola Mobility discussion Rel-17 NR\_SL\_enh-Core

R2-2111119 Discussion on Uu DRX and SL DRX Alignment Qualcomm Finland RFFE Oy discussion

R2-2111120 Discussion on Blind Retransmissions with DRX in Mode 1 Qualcomm Finland RFFE Oy discussion

R2-2111121 Discussion on RLF and PC5 RRC Connection with SL DRX Qualcomm Finland RFFE Oy discussion

R2-2111122 Discussion on pool separation for SL DRX LG Electronics France and ZTE discussion NR\_SL\_enh-Core

R2-2110316 DRX Active time, Sensing and Configuration aspects Lenovo, Motorola Mobility discussion Rel-17 Withdrawn

### 8.15.3 Resource allocation enhancements RAN2 scope

Including RAN2 discussion scope on random selection, partial sensing and inter-UE coordination. This agenda item may utilize a summary document (LG).

R2-2109416 Discussion on resource allocation enhancement OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2109479 Consideration on Resource Allocation Enhancements CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2109719 Discussion on RAN2 impacts for supporting inter-UE coordination Scheme 1 with preferred resource set NEC Corporation discussion

R2-2109958 On resource allocation and inter-UE coordination aspects Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2110063 Discussion on resource allocation enhancements Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2110120 Discussion on resource allocation enhancement for NR sidelink Spreadtrum Communications discussion Rel-17

R2-2110156 Power efficient resource allocation and Inter-UE coordination LG Electronics France discussion Rel-17 NR\_SL\_enh-Core

R2-2110317 Discussion on sidelink resource allocation enhancements Lenovo, Motorola Mobility discussion Rel-17

R2-2110396 Inter-UE Coordination for Sidelink Mode 2 Resource Allocation Fraunhofer IIS, Fraunhofer HHI discussion Rel-17 R2-2107182

R2-2110419 Power Reduction for Sidelink Mode 2 Resource Allocation Fraunhofer IIS, Fraunhofer HHI discussion Rel-17

R2-2110651 Discussion on inter-UE coordination for sidelink mode-2 vivo discussion Rel-17

R2-2110691 General principles for resource allocation enhancements for SL mode 2 Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2110828 Discussion on inter-UE coordination ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2110940 Resource pool configuration and selection of resource selection mechanism Samsung Research America discussion