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][713][V2X/SL] Response LS to R2-2111232 (ZTE)

**Scope:** Inform the related RAN2 agreement (TX profile from the discussion in R2-2109478) and ask to take it into account in SA2 works.

**Intended outcome:** LS to SA2 in R2-2111432 to be approved via email.

**Deadline:** Short email discussion

* [POST116-e][714][V2X/SL] Response LS to R2-2111237 (Vivo)

**Scope:** Inform the related RAN2 agreements (SL DRX for ProSe from the discussion in R2-2109397 and R2-2111420) and ask to take it into account in SA2 works.

**Intended outcome:** LS to SA2 in R2-2111433 to be approved via email.

**Deadline:** Short email discussion

* [POST116-e][717][V2X/SL] 38.300 running CR (IDT)

**Scope:** Update 38.300 running CR to capture the agreements made this meeting.

**Intended outcome:** 38.300 running CR in R2-2111434 to be endorsed via email.

**Deadline:** Short email discussion

* [POST116-e][710][V2X/SL] PDCP/RLC Entity Maintenance for SL-SRBs (CATT)

**Scope:** Clarify the issue and discuss solution (if the issue is confirmed).

**Intended outcome:** Discussion summary and CR (if needed)

**Deadline:** Long email discussion. Recommend to have short intermediate phase to check if you list all options/solutions companies mind when to discuss solution.

* [POST116-e][715][V2X/SL] RRC open issues (Huawei)

**Scope:** Address and solve further stage 3 open issues (including details of UE assistance information to TX UE or network, e.g. triggering condition for transmission, parameters and value ranges to be included, and UE behaviours)

**Intended outcome:** Discussion summary and updated 38.331 running CR (if needed)

**Deadline:** Long email discussion. Recommend to have short intermediate phase to check if you list all options/solutions companies mind when to discuss solution.

* [POST116-e][716][V2X/SL] MAC open issues (LG)

**Scope:** Address and solve further stage 3 open issues (including details of LCP, SL DRX command, need of further considerations on SL impacting on Uu, and selection of SL DRX start offset for GC between option1 and option5)

**Intended outcome:** Discussion summary and updated 38.321 running CR (if needed)

**Deadline:** Long email discussion. Recommend to have short intermediate phase to check if you list all options/solutions companies mind when to discuss solution.

* [POST116-e][718][V2X/SL] SL DRX configuration (Ericsson)

**Scope:** Address and solve the remaining aspects based on P25 to P30 in R2-2109907, P11 to P13 in R2-2110062, and P12 in R2-2109801.

**Intended outcome:** Discussion summary

**Deadline:** Long email discussion

**[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 => completed

* [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 => completed

* [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 => completed

* [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 => completed

* [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 => completed

* [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 => extended to 11/9 10:00am UTC => completed

* [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 R2-2111425 (if need). Proposals and CR will be approved by email.

**Deadline:** 11/9, 10:00am UTC => completed

* [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 R2-2111427 (if need). Proposals and CR will be approved by email.

**Deadline:** 11/9, 10:00am UTC => completed

* [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 => completed

* [AT116-e][711][V2X/SL] Response LS to R2-2109324 (OPPO)

**Scope:** Inform the related RAN2 agreements (HARQ RTT based on SCI from the discussion in R2-2109938, R2-2109415, and R2-2111423) and ask to take it into account in RAN1 works.

**Intended outcome:** LS to RAN1 in R2-2111430 to be approved via email.

**Deadline:** 11/12, 10:00am UTC

* [AT116-e][712][V2X/SL] Response LS to R2-2111220 (Lenovo)

**Scope:** Inform the related RAN2 agreements (candidate resource selection from the discussion on R2-2111423) and ask to take it into account in RAN1 works.

**Intended outcome:** LS to RAN1 in R2-2111431 to be approved via email.

**Deadline:** 11/12, 10:00am UTC

## Approved outgoing LSs

LS to RAN1 in R2-2111430 and R2-2111431 are to be approved at 11/12

LS to SA2 in R2-2111432 and R2-2111433 are to be approved via short email discussion

## 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 R2-2111425 (if need)

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

R2-2111425 Summary [AT116-e][707][V2X/SL] Miscellaneous CR on 38.331 Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1: Add change based on LS in R1-2108393 as “The value ms0 is always configured.”

Proposal 2: Editorial changes in R2-2109596 are agreed.

Proposal 3: For change in R2-2109806, agree to capture in RRC spec as “Network always includes this field”.

Proposal 4: Changes in R2-2110269 are agreed.

* All proposals are agreed.

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

R2-2111424 Miscellaneous corrections on TS 38.331 Huawei, HiSilicon, Qualcomm, CATT, MediaTek, ZTE, Sanechips, Nokia, Nokia Shanghai Bell, vivo CR Rel-16 38.331 16.6.0 2815 1 F 5G\_V2X\_NRSL-Core

* Agreed.

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 R2-2111427 (if need)

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

R2-2111427 Summary [AT116-e][708][V2X/SL] Miscellaneous CR on 38.321 LG Electronics France discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1. Regarding the Correction CRs: R2-2111138, 2nd change is agreed.

Proposal 2. Regarding the Correction CRs: R2-2109597, proposed change is not agreed.

Proposal 3. Regarding the Correction CRs: R2-2110058, proposed change is agreed.

Proposal 4. Regarding the Correction CRs: R2-2110829, proposed change is agreed.

Proposal 5. Regarding the Correction CRs: R2-2109534, 1st change is agreed.

Proposal 6. Regarding the Correction CRs: R2-2110832, proposed change without NOTE is agreed.

Proposal 7. Regarding the contribution: R2-2109417, rapporteur’s suggested text (in the 5.22.1.3.2) is agreed.

(modified) Proposal 8. Regarding the contribution: R2-2109418, correction is not agreed. RAN2 needs more time to check whether removing the cross-reference is valid or not.

Proposal 9. Regarding the contribution: R2-2110152, Rapporteur’s suggested text is agreed.

* All proposals are agreed.

P8 in R2-2111427 (at online comeback session):

[Session chair]: Wonder if P8 is really aligned with RAN2 agreement? [OPPO]: With the removal of “over uplink transmissions of the MAC entity or the other MAC entity”, now it only specifies when SL MAC PDU is prioritized (not over UL MAC PDU). [Lenovo]: Share the concern with session chair. Even with removal of “over uplink transmissions of the MAC entity or the other MAC entity”, it still means SL MAC PDU is prioritized only based on SL threshold. [Session chair]: Propose to have more time to check whether we capture RAN2 agreement well or otherwise to think of better change/wording (although it was supported by majority companies at email discussion). [Lenovo, ASUSTek]: Agree with session chair.

* Correction in original P8 is not agreed this meeting.

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

R2-2111426 Miscelleneous CR on 38.321 (Rapporteur CR) LG Electronics France CR Rel-16 38.321 16.6.0 1168 1 F 5G\_V2X\_NRSL-Core

* Agreed.

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

[Session chair]: Work item code should be corrected to “5G\_V2X\_NRSL-Core”

* Agreed with the WI code correction in R2-2111283.

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

R2-2111429 Summary [AT116-e][709][V2X/SL] PDCP/RLC Entity Maintenance for SL-SRBs (CATT) CATT discussion 5G\_V2X\_NRSL-Core

Proposal 1: Suggest RAN2 to further discuss whether MAC layer can handle the reception of first unicast PC5-S message correctly and whether the receiving PDCP/RLC entity can be established for SL-SRB0/1 using unicast.

[ZTE]: If we need to update the CR to solve this issue, prefer to change PDCP (rather than MAC). [Samsung]: Not clear on the problem yet. [Apple]: Agree with problem observation and the easy way out would be not to allow UC for Direct Link Establishment REQ. [Ericsson]: For PDCP entity establishment, it is natural to establish PDCP entity when it receives Direct Link Establishment REQ by the upper layer. [Ericsson]: What is the use case where UC should be used for Direct Link Establishment REQ. We may need to ask SA2. [Session chair]: If not urgent, let’s continue the discussion until next meeting since some companies are not sure on the issues. [MediaTek, Qualcomm, OPPO]: We should not interfere SA2/CT1, if problem is agreed, we should consider RAN2 based solution.

* Noted.
* [POST116-e][710][V2X/SL] PDCP/RLC Entity Maintenance for SL-SRBs (CATT)

**Scope:** Clarify the issue and discuss solution (if the issue is confirmed).

**Intended outcome:** Discussion summary and CR (if needed)

**Deadline:** Long email discussion. Recommend to have short intermediate phase to check if you list all options/solutions companies mind when to discuss solution.

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.

Agreement on SL DRX design:

1: 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.

[Session chair]: Do we need response LS to RAN1 to inform RAN2 WA is dropped? [Intel, Apple, Vivo, Lenovo, Ericsson, Huawei]: Not really needed.

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.
* [AT116-e][711][V2X/SL] Response LS to R2-2109324 (OPPO)

**Scope:** Inform the related RAN2 agreements (HARQ RTT based on SCI from the discussion in R2-2109938, R2-2109415, and R2-2111423) and ask to take it into account in RAN1 works.

**Intended outcome:** LS to RAN1 in R2-2111430 to be approved via email.

**Deadline:** 11/12, 10:00am UTC

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.

* [AT116-e][712][V2X/SL] Response LS to R2-2111220 (Lenovo)

**Scope:** Inform the related RAN2 agreements (candidate resource selection from the discussion on R2-2111423) and ask to take it into account in RAN1 works.

**Intended outcome:** LS to RAN1 in R2-2111431 to be approved via email.

**Deadline:** 11/12, 10:00am UTC

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.

* [POST116-e][713][V2X/SL] Response LS to R2-2111232 (ZTE)

**Scope:** Inform the related RAN2 agreement (TX profile from the discussion in R2-2109478) and ask to take it into account in SA2 works.

**Intended outcome:** LS to SA2 in R2-2111432 to be approved via email.

**Deadline:** Short email discussion

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.
* [POST116-e][714][V2X/SL] Response LS to R2-2111237 (Vivo)

**Scope:** Inform the related RAN2 agreements (SL DRX for ProSe from the discussion in R2-2109397 and R2-2111420) and ask to take it into account in SA2 works.

**Intended outcome:** LS to SA2 in R2-2111433 to be approved via email.

**Deadline:** Short email discussion

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

R2-2111416 Summary of open issues for 38.331 running CR Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

[Proposal 1]: To remove implementations in clause 5.8.9.1.3[5] and clause 5.8.9.1.9[5].

[Proposal 2]: Remove the current 5.8.X and EN in 5.2.2.4.13. The behaviour description is revised as “2>if sl-DRX-Config-GC-BC is included in SIB12-IE: 3> store the NR sidelink DRX configuration and perform sidelink DRX operation”.

[Proposal 3]: Use one specific configuration which is not associated with QoS or L2 ID, for HARQ RTT timer and Retransmission timer of groupcast.

[Proposal 4]: Remove the current implementation in clause 5.7.4.3 regarding UE behaviour triggered by E-UTRA RRC message [5].

[Proposal 5] Remove the current implementation and EN in Clause 5.3.5.9 Other configuration.

[Proposal 6] Remove the current implementation in clause 5.7.4.1/2/3[5].

[Proposal 7] RAN2 to decide related UE behaviour including using either UAI or SUI, for reporting DRX configuration or sidelink assistance information to its serving gNB.

[Proposal 8] Change “SL-QoS-Profile-r17” to “SL-QoS-Profile-r16” and “maxNrofSL-QFIs-r17” to maxNrofSL-QFIs-r16” (clause 6.3.5[5]). Remove “Editor’s note 4: FFS how to implement SL-QoS-Profile-r17.”

[Proposal 9] Put IE “sl-DRX-Config” under a new IE of SL-PHY-MAC-RLC-Config-v17xy, further put this new IE of SL-PHY-MAC-RLC-Config-v17xy under SL-ConfigDedicatedNR; add one EN “FFS extension marker for SL-PHY-MAC-RLC-Config-v17xy is needed or not”.

[Proposal 10]: To place default DRX Configuration for GC/BC outside the “SL-DRX-GC-BC-PerQoS-List-r17. Remove the current Boolean indicator “sl-DefaultDRX-GC-BC-r17” from the current version.

* All proposals are agreed.

Agreements on stage 3 open issues for RRC running CR:

1: To remove implementations in clause 5.8.9.1.3[5] and clause 5.8.9.1.9[5].

2: Remove the current 5.8.X and EN in 5.2.2.4.13. The behaviour description is revised as “2>if sl-DRX-Config-GC-BC is included in SIB12-IE: 3> store the NR sidelink DRX configuration and perform sidelink DRX operation”.

3: Use one specific configuration which is not associated with QoS or L2 ID, for HARQ RTT timer and Retransmission timer of groupcast.

4: Remove the current implementation in clause 5.7.4.3 regarding UE behaviour triggered by E-UTRA RRC message [5].

5: Remove the current implementation and EN in Clause 5.3.5.9 Other configuration.

6: Remove the current implementation in clause 5.7.4.1/2/3[5].

7: RAN2 to decide related UE behaviour including using either UAI or SUI, for reporting DRX configuration or sidelink assistance information to its serving gNB.

8: Change “SL-QoS-Profile-r17” to “SL-QoS-Profile-r16” and “maxNrofSL-QFIs-r17” to maxNrofSL-QFIs-r16” (clause 6.3.5[5]). Remove “Editor’s note 4: FFS how to implement SL-QoS-Profile-r17.”

9: Put IE “sl-DRX-Config” under a new IE of SL-PHY-MAC-RLC-Config-v17xy, further put this new IE of SL-PHY-MAC-RLC-Config-v17xy under SL-ConfigDedicatedNR; add one EN “FFS extension marker for SL-PHY-MAC-RLC-Config-v17xy is needed or not”.

10: To place default DRX Configuration for GC/BC outside the “SL-DRX-GC-BC-PerQoS-List-r17. Remove the current Boolean indicator “sl-DefaultDRX-GC-BC-r17” from the current version.

R2-2111417 RRC running CR for NR Sidelink enhancement Huawei, HiSilicon draftCR Rel-17 38.331 16.6.0 B NR\_SL\_enh-Core

* Endorsed.
* [POST116-e][715][V2X/SL] RRC open issues (Huawei)

**Scope:** Address and solve further stage 3 open issues (including details of UE assistance information to TX UE or network, e.g. triggering condition for transmission, parameters and value ranges to be included, and UE behaviours)

**Intended outcome:** Discussion summary and updated 38.331 running CR (if needed)

**Deadline:** Long email discussion. Recommend to have short intermediate phase to check if you list all options/solutions companies mind when to discuss solution.

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

* Noted 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

R2-2111418 Summary of open issues for 38.321 running CR LG Electronics France discussion Rel-17 NR\_SL\_enh-Core

Proposal 1. Regarding the issue 1 (i.e., Priority order of SL DRX Command MAC CE), it needs further discussion.

Proposal 2. Priority value of sidelink DRX Command MAC CE is a fixed value (i.e., “1”).

* All proposals are agreed.

Agreements on stage 3 open issues for MAC running CR:

1: Priority value of sidelink DRX Command MAC CE is a fixed value (i.e., “1”).

R2-2111419 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.
* [POST116-e][716][V2X/SL] MAC open issues (LG)

**Scope:** Address and solve further stage 3 open issues (including details of LCP, SL DRX command, need of further considerations on SL impacting on Uu, and selection of SL DRX start offset for GC between option1 and option5)

**Intended outcome:** Discussion summary and updated 38.321 running CR (if needed)

**Deadline:** Long email discussion. Recommend to have short intermediate phase to check if you list all options/solutions companies mind when to discuss solution.

* [POST116-e][717][V2X/SL] 38.300 running CR (IDT)

**Scope:** Update 38.300 running CR to capture the agreements made this meeting.

**Intended outcome:** 38.300 running CR in R2-2111434 to be endorsed via email.

**Deadline:** Short email discussion

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.

Agreements on SL-DRX for ProSe:

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

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.

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

R2-2111420 [Draft] [AT116-e][703][V2X/SL] SL-DRX for ProSe (LG) LG Rel-17 NR\_SL\_enh-Core

Proposal 2: RAN2 confirms Rel-17 SL-DRX design can be reused for relay-related ProSe communication in layer-3 relay without additional specific solution discussion/specification effort

* Agreed.

Proposal 1: RAN2 confirms Rel-17 SL-DRX design can be reused for relay-related ProSe communication in layer-2 relay without additional specific solution discussion/specification effort.

[Ericsson]: During offline discussion, many companies also supported not to consider relay-related ProSe communication. Open issue such as paging reception (e.g. paging will be delayed due to SL DRX since SL DRX and Uu DRX alignment for idle is not supported) was also raised during offline discussion. [IDT]: It is premature to conclude it can be supported. [OPPO]: Support of SL DRX for relay-related ProSe communication is really market demand. Also in Uu case, we do not have a restriction that Uu DRX is not applied to XR or URLLC. Why we need such a restriction for SL case? It should not be forbidden artificially in Rel-17. [Session chair]: Considering previous RAN2 agreement and email discussion status, we can keep RAN2 previous agreement (prioritize the non-relay case without consideration of relay specific optimization in Rel-17), but we’re not going to make any conclusion if it is supported or not. [Qualcomm, Ericsson, IDT, OPPO, CATT]: Agree with session chair.

* Keep RAN2 previous agreement (prioritize the non-relay case without consideration of relay specific optimization in Rel-17) but we’re not going to make any conclusion if L2 relay-related ProSe communication is supported or not in Rel-17 now.
* Will include the agreement above in addition to all other related agreements made last week and from this offline discussion into the response LS to SA2.

Proposal 3: RAN2 confirms Rel-17 SL-DRX design can be reused for relay-related ProSe discovery by applying SL default-DRX configuration used for communication without further additional specific solution discussion/specification effort.

[Ericsson]: Prefer to handle P3 as similar manner as P2. [OPPO]: For L3 relay-related ProSe discovery it should be better to be aligned with P1 while L2 relay-related ProSe discovery is better to be aligned with P2. [Apple, ZTE]: Support the proposal. [Intel, Qualcomm]: Agree with OPPO.

* RAN2 confirms Rel-17 SL-DRX design can be reused for L3 relay-related ProSe discovery without additional specific solution discussion/specification effort (by applying SL default-DRX configuration). No conclusion if L2 relay-related ProSe discovery is supported or not in Rel-17 now.

At comeback session 2nd week:

[OPPO]: “by applying SL default-DRX configuration” in the original proposal was missed in the agreement for L3 relay-related ProSe discovery. [OPPO, ZTE]: Understand supporting L2 relay-related ProSe discovery is not restricted now, i.e. we do not specify this restriction since no conclusion was made. [Ericsson, IDT]: We should stick to the original agreements without any addition. [OPPO]: Key point of the question is whether we specify the restriction for L2 relay-related ProSe discovery. [Session chair]: Guess not since no conclusion was made whether it is supported or not in Rel-17 now. [IDT]: Conclusion can be discussed in relay WI. Note this conclusion may impact other WGs. [OPPO]: Understand so there is no concern from not specifying any restriction now from SL enhancement WI.

* RAN2 does not specify any restriction now.

Agreements on SL-DRX for ProSe:

1: RAN2 confirms Rel-17 SL-DRX design can be reused for relay-related ProSe communication in layer-3 relay without additional specific solution discussion/specification effort.

2: Keep RAN2 previous agreement (prioritize the non-relay case without consideration of relay specific optimization in Rel-17) but we’re not going to make any conclusion if L2 relay-related ProSe communication is supported or not in Rel-17 now.

3: RAN2 confirms Rel-17 SL-DRX design can be reused for L3 relay-related ProSe discovery without additional specific solution discussion/specification effort (by applying SL default-DRX configuration). No conclusion if L2 relay-related ProSe discovery is supported or not in Rel-17 now. RAN2 does not specify any restriction now.

4: Will include the agreement above in addition to all other related agreements made last week and from this offline discussion into the response LS to SA2.

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.

Agreements on HARQ RTT:

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”

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 do not 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.

Agreements on HARQ RTT:

1: One-to-one mapping is needed between Tx and Rx resource pools for derivation of SCI-based RTT timer. We do not need to specify it.

2: 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.

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)

Agreements on SL DRX for mode 1:

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.

2: 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.

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 proposal 11, 12 and 13.

[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.

* Agreed.

[Session chair]: What about UC? It seems initial message can also be sent via UC. [Ericsson]: It will be good to put FFS on UC (at least for the initial message).

Proposal 24: [19/22] The default SL DRX configuration for BC/GC can be used for the DCR message. FFS for UC (at least for the initial message).

* Agreed.

[Vivo]: Is there any difference between default SL DRX configuration in P23 and the default SL DRX configuration in P24? Assume different SL DRX configuration is applied to P23 and P24. [OPPO, Ericsson, Qualcomm, Lenovo, ZTE]: Understand same default DRX configuration to P23 and P24.

Proposal 26: (modified) [16/17] RAN2 confirms that DRX configuration for V2X group management signaling is out of RAN2 scope. No additional new mechanism is needed.

* Agreed.

[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.

* Agreed with option 2 (a Tx profile identifies one or more sidelink feature groups)

[Session chair]: Based on the latest LS from SA2/CT1, RAN2 should discuss and make a decision. It seems more companies supported option2 during email discussion. Can we go for option 2 (one or more SL feature groups)? [OPPO]: Besides SL DRX, partial sensing and random selection does not need to be considered as a feature in TX profile since it is only TX UE related feature and there is no need of coordination between TX UE and RX UE. For inter-UE coordination, we may need coordination between TX UE and RX UE, however it is not crystal clear now. We can include SL DRX feature at least in TX profile (if we need to inform SA2) and for others we should wait for more RAN1 progress. [Ericsson]: With option2, also we can easily extend it for future release [LG]: Agree with OPPO that it is not clear besides SL DRX, whether there is any other feature to be included. [Qualcomm]: We don’t know whether SL DRX is mandatory or not in Rel-17, so option2 is preferred.

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.

* Skipped (based on the latest LS from SA2)

Proposal 3: [13/17] When sl-PUCCH-Config is configured but the PUCCH is not transmitted e.g. 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.

* Agreed with proposal 3, 4 and 5.

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 6 and 7 are skipped (since they are related to ongoing offline discussion).

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 8 and proposal 9 are discussed with R2-2109608.

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

* Agreed.

[ZTE]: Does “desired SL DRX configuration” mean single one or multiple ones? [Session chair]: No direct relation to the proposal 10. [CATT]: Confirm chair’s understanding.

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]: Is 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 14, 15, 16 and 19 are skipped.

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.

[Session chair]: For proposal 21 and 22, we need to make a decision at least on the need of down-selection considering we already have discussed in the past. It seems more companies supported the need of down-selection. [IDT]: We already agreed down-selection for inactivity timer so we should have common approach for on-duration timer and DRX cycle length. [LG, Ericsson]: do not support down-selection. [Lenovo]: For a given DST L2 id, it would be not often to have different QoS. [Session chair]: Suggest to check companies’ views to see if any change.

Option1: No need of down-selection for DRX cycle and on-duration

Option2: Need of down-selection for DRX cycle and on-duration

Companies supporting option1: Ericsson, OPPO, Lenovo, LG, Nokia, ZTE, Intel (7)

Companies supporting option2: Xiaomi, Huawei, IDT, Convida, Apple, MediaTek, Qualcomm, Vivo, Franhofer, CATT (10)

[Session chair]: Option2 seems ok to go towards considering i) aligned with agreement on inactivity timer handling, ii) aligned with agreement that inactivity timer for each DST L2 id, and iii) more companies support? [Lenovo]: For ii), the agreement was about DRX start time, not about DRX timer running per DST L2 id. [LG]: Inactivity timer and other timers (including on-duration timer and DRX cycle) has a different characteristic and purpose, so there is no need to align among them. [IDT]: With option2, it would make MAC spec simpler otherwise we need to specify all active times and relationships for a DST L2 id. [Session chair]: Seems we cannot make an agreement. What about to set option2 as working assumption now? [Qualcomm, Lenovo]: Agree with chair. [LG]: 10 vs 7 does not show clear majority so prefer not to set option2 as working assumption. [Session chair]: We discussed this issue multiple times so it is time to make some progress. Still think it is good to set working assumption at least now and final decision will be made next meeting.

* Working assumption: Option2 (Need of down-selection for DRX cycle and on-duration)

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.

* Skipped.

Agreements on identified FFSs:

1: The onduration timer should be included in the RX UE’s desired SL DRX configuration.

2: The DRX start offset should be included in the RX UE’s desired SL DRX configuration.

3: The DRX cycle should be included in the RX UE’s desired SL DRX configuration.

4: 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).

5: 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.

6: Common default SL DRX configuration should be used for BC/GC.

7: The default SL DRX configuration for BC/GC can be used for the DCR message. FFS for UC (at least for the initial message).

8: RAN2 confirms that DRX configuration for V2X group management signaling is out of RAN2 scope. No additional new mechanism is needed.

9: A Tx profile identifies one or more sidelink feature groups.

10: When sl-PUCCH-Config is configured but the PUCCH is not transmitted e.g. due to UL/SL prioritization, the starting timing of SL-specific drx-HARQ-RTT-Timer is referring to symbol.

11: 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.”

12: 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.

13: It is up to Rx UE’s implementation to determine its desired SL DRX configuration.

14: The SL DRX assistance information request from Tx UE to Rx UE is not supported in the current release.

15: Working assumption: Option2 (Need of down-selection for DRX cycle and on-duration) for GC/BC when multiple QoS profiles are associated with the same DST L2 ID.

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

[Session chair]: Only P4 needs to be discussed (related to P8/P9 in R2-2109478)

Proposal 4: TX-UE can only schedule the retransmission of the SL process (es) whose retransmission timer(s) is/are running, when neither onduration timer nor inactivity timer for the related groupcast Destination (maintained at the TX UE side) is running.

[Lenovo, Ericsson, IDT]: Agree with the observation and proposal. [OPPO]: Is the proposal only for GC? Prefer common UE behavior for all timers. [Huawei]: Only for GC. Proposal is not for optimization. It’s for correction to avoid the problem. [Ericsson]: Do we have same issue for inactivity timer since inactivity timer can be mismatched between TX and RX UEs? Shouldn’t we allow initial transmission only for the time when on-duration timer runs? [Session chair]: We agreed that we are not going to specify a mechanism to synchronize inactivity timer between TX and RX UEs based on HARQ feedback. Am not sure if it means initial transmission is not allowed during the time when inactivity timer runs. If not allowed, what is the purpose of inactivity timer for GC? Note the issue raised in the contribution is about initial transmission during the time when retransmission timer only runs. First let’s discuss on the concerned scenario. [LG, Intel, Nokia, ZTE]: Not support the proposal. [Session chair]: Let’s check companies’ views to see if any change.

For GC:

* Option1: Initial transmission is allowed during the time when on-duration and inactivity timer run.
* Option2: Initial transmission is allowed during any active time.

Option 1: Qualcomm, Lenovo, IDT, Huawei, Ericsson (5)

Option 2: LG, OPPO, Nokia, Intel, Apple, MediaTek, NEC, ZTE, Fraunhofer, ASUSTek (10)

[Session chair]: Seems more companies support option 2. Then with option2, how to avoid the problem? [OPPO]: Observation is technically correct. However, it should be left to TX UE implementation. [Qualcomm]: RX UE behavior after sending ACK is not decided yet, we may need to see this RX UE behavior first. [Lenovo]: Consequence is packet loss, which is not acceptable to leave it to UE implementation.

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.

* Proposal 1, 2, 3, 4, 5, 7, 8 and 9 are agreed.

[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: (modified) 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.

* Noted.

[ZTE]: Intention is understood, however prefer removing of the first sentence. [Ericsson, LG]: Does the proposal provides something meaningful? It is clear that each UE uses its own DFN.

Proposal 10: (modified) RAN2 to select one of the following options 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

* Agreed.

[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).

* Agreed.

Agreements on DRX timer length and start time:

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.

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.

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.

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.

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

6: 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.

7: 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.

8: For groucast and broadcast, an equation is introduced to derive sl-drx-startoffset based on DST L2 ID.

9: RAN2 to select one of the following options 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

10: For groucast and broadcast, sl-drx-SlotOffset is also set based on DST L2 ID (i.e., similar to sl-drx-StartOffset).

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

* [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

R2-2111421 [AT116-e][704][V2X/SL] Need of additional new considerations (NEC) NEC Corporation discussion

On R2-2109722 P1

Proposal 1 [18/19] A new MAC CE to indicate DRX operation suspend/resume is not supported in Rel-17.

* Agreed.

On R2-2109812 P4

Proposal 2 [15/19] SL DRX configuration for SL groupcast including multiple settings for the SL DRX ON duration is not supported in Rel-17.

* Agreed.

On R2-2109937 P1

Proposal 3 [13/18] Inactivity timer maintenance rules for groupcast transmissions with MCR is not supported in Rel-17.

* Agreed.

On R2-2110062 P1

Proposal 4 [15/19] In Rel-17, RX UE filtering based on SL-DRX shall not be specified and enforced. RX UE is allowed to receive and process incoming traffic which does not exactly match SL DRX configurations.

Proposal 5 RAN2 to confirm that no specification change is needed for supporting Proposal 4.

* Proposal 4 and 5 are agreed.

[LG]: Current running CR still check L2 id, which is linked to inactivity timer. [Apple]: No specification impact from proposal 5 and ok with the current running CR. [Session chair]: Propose to agree as they are and we can check if the current running CR is ok or not later.

On R2-2110155 P12

Proposal 6 [12/17] It is not necessary to discuss solutions to avoid the wrong HARQ combining due to DTX case in SL DRX operation.

* Noted.

[LG]: Many companies agree with the problem although the companies do not think we need to discuss solutions. Would like to leave a room for the discussion on this issue (if time allows). [Xiaomi]: Consider the issue can happen even in Rel-16, so it should be discussed with the consideration of Rel-16 correction.

On R2-2110938 P5

Proposal 7 [18/19] For GC, number of group members does not need to be considered in the determination of SL DRX on-duration and inactivity timers in the scenario where the UE knows it in Rel-17.

* Agreed.

On R2-2111119 P1-P2

Proposal 8 [16/17] An SL UE capability, representing the amount of time a UE needs to process SL grant and prepare data transmission, is not needed to be indicated by the UE to its serving gNB.

Proposal 9 RAN2 to confirm that no specification change is needed for indicating SL traffic characteristics and associated QoS requirement to the SL TX UE’s gNB for determining SL DRX On duration.

* Proposal 8 and 9 are agreed.

Agreements on need of additional new considerations:

1: A new MAC CE to indicate DRX operation suspend/resume is not supported in Rel-17 (related to R2-2109722).

2: SL DRX configuration for SL groupcast including multiple settings for the SL DRX ON duration is not supported in Rel-17 (related to R2-2109812).

3: Inactivity timer maintenance rules for groupcast transmissions with MCR is not supported in Rel-17 (related to R2-2109937).

4a: In Rel-17, RX UE filtering based on SL-DRX shall not be specified and enforced. RX UE is allowed to receive and process incoming traffic which does not exactly match SL DRX configurations (related to R2-2110062).

4b: RAN2 to confirm that no specification change is needed for supporting 4a.

5: For GC, number of group members does not need to be considered in the determination of SL DRX on-duration and inactivity timers in the scenario where the UE knows it in Rel-17 (related to R2-2110938).

6a: An SL UE capability, representing the amount of time a UE needs to process SL grant and prepare data transmission, is not needed to be indicated by the UE to its serving gNB (related to R2-2111119).

6b: RAN2 to confirm that no specification change is needed for indicating SL traffic characteristics and associated QoS requirement to the SL TX UE’s gNB for determining SL DRX On duration.

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

* [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

R2-2111422 Summary of [AT116-e][705][V2X/SL] SL DRX for SL-CSI reception Xiaomi discussion

Proposal 1: Confirm the WA: The slots when the UE is expected CSI report following a CSI request is considered as SL active time. (19/19)

Proposal 2: Active time for SL-CSI reception is defined with description. Active time includes the time between SL-CSI request is sent and SL-CSI report reception or period of sl-LatencyBound-CSI-Report. (14/19)

Proposal 3: Ambiguous time is not introduced on sidelink for SL-CSI report. (19/19)

* Proposal 1, 2 and 3 are agreed.

[Qualcomm]: Is ambiguous time related to RTT timer? [Xiaomi]: No. [Qualcomm]: Single timer or two timers are required for SL-CSI reception? There was some proposal to have two timers. [Xiaomi]: Based on proposal 2, it is a timer with the description. [Qualcomm]: With proposal 2, how to synchronize between TX UE and RX UE? [Session chair]: Not sure what the concern is. Both TX and RX UE should act according to the description. [OPPO]: Not sure if there is real problem as Qualcomm raised. Is it legacy issue or SL DRX specific issue? [Qualcomm]: It is the issue when active time is defined with SL DRX timers. [Ericsson]: Prefer using explicit timer. Would like to have more time to check if there is no problem with proposal 2. [IDT]: Active time is same for all UEs according to option2. Either to have explicit timer or to have description does not make a real difference. [IDT, ZTE]: Ok with proposal 2.

Agreements on SL DRX for SL CSI reception:

1: Confirm the WA: The slots when the UE is expected CSI report following a CSI request is considered as SL active time.

2: Active time for SL-CSI reception is defined with description. Active time includes the time between SL-CSI request is sent and SL-CSI report reception or period of sl-LatencyBound-CSI-Report.

3: Ambiguous time is not introduced on sidelink for SL-CSI report.

* [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

R2-2111423 [AT116-e][706][V2X/SL] Candidate resource selection (including related HARQ RTT issues) (Huawei) Huawei, HiSilicon discussion

High priority proposals:

(modified) [11/17 Proposal 2] TX UE shall select initial transmission resource only in the RX UE’s active time where SL DRX timers are running now or will be running in future (at least on-duration timer). Further details of active time can be considered later. FFS on spec impact.

* Agreed.

[Lenovo]: Understand RX UE’s current active time means the current active time that SL DRX timers are already running and on-duration timer will be running in future. [OPPO]: Need a clear definition on current active time. Understand it means the time due to the timer based on the transmission that has been performed. [Session chair]: Need same understanding on the definitions. What are companies’ interpretation? See possible interpretations:

* + Current active time: interpretation 1): Time when a SL DRX active timer is already running and on-duration timer will be running, interpretation 2): Time only when a SL DRX active timer is already running.
  + Future active time: interpretation 1): Time when a TX UE’s (re)transmission will trigger start/restart of a SL DRX active timer in future, interpretation 2): Time when a SL DRX active timer will be running in future.

[IDT, OPPO, Session chair]: Understand interpretation 1). [Ericsson]: Current active time and future active time is still confusing. [Session chair]: Not sure if we really need two kinds of terms from MAC point of view, e.g. if retransmission happens and HARQ retransmission starts accordingly, active time will be updated accordingly. Same for inactivity timer. Active time is just active time, why we need differentiation for the current active time and future active time from MAC point of view? [Session chair]: Can we try to agree with the removal of “current” since companies are not sure for the need and the exact definition of “current” and “future” active time? [OPPO, Xiaomi, LG, Intel, Ericsson, CATT, Qualcomm, Huawei]: Agree with session chair. [Vivo]: The modified proposal seems not entirely correct since initial transmission should be also allowed during the time when inactivity timer is running. [OPPO]: Can add “Further details of active time can be considered later.” [Lenovo]: At least we can agree with on-duration timer.

(modified) [14/14 Proposal 3] If RAN 2 agrees that TX UE shall select initial transmission resource only in the RX UE’s active time, it is applied for all cast types.

* Agreed.

(modified) [18/18 Proposal 9] For each SL grant, the grant is used if it is in active time of at least one destination; otherwise the grant is skipped.

* Agreed.

[OPPO, Lenovo, Intel]: Not clear on the need of FFS now.

(added and modified) [14/16 Proposal 10] Regardless whether HARQ feedback is enabled or disabled, the HARQ RTT timer can be derived based on the resource assignment information for retransmission of the same TB in the SCI if the resource assignment information for retransmission of the same TB is present.

* Agreed.

(modified) [11/16 Proposal 11] When HARQ feedback is disabled, either zero value or non-zero value can be configured for the HARQ RTT timer if the resource assignment information is not present. FFS on details of configuration.

* Agreed.

[Ericsson]: It is not clear whether common HARQ RTT value or separate HARQ RTT value is configured for both HARQ enabled and disabled so propose to add “FFS on details of configuration”. [Vivo, Qualcomm]: Which is really correct between “both zero value and non-zero value” or “either zero value or non-zero value”? [Huawei]: Understand “either zero value or non-zero value” is correct. [Intel, LG]: Ok with the modified proposal.

[14/16 Proposal 14] Always set the value of the retransmission timer to be a configured value regardless how the UE sets the HARQ RTT timer.

* Agreed.

Low priority proposals:

[11/18 Proposal 1] RAN2 assumes, when MAC selects N resources in total for a MAC PDU, at least X (X≤N) resources shall be selected in the current active time. FFS on spec impact. FFS how to determine X for each cast type. FFS for retransmission case.

* Skipped.

[10/18 Proposal 4] RAN2 further discuss, when determining the current active time to provide to PHY layer, active time associated with a selected resource in which transmission has not yet occurred is not included. FFS on spec impact.

* Skipped.

[Proposal 6] Regarding that MAC provides current and/or future active time to PHY, RAN 2 to choose between Option 1 “Current active time only” (11/18) and Option 2 “Current active time and future active time estimated by the MAC layer” (5/18). FFS on spec impact.

[LG]: It will be good to make a decision at least on proposal 6 and to inform RAN1. Note RAN1 needs to make a conclusion next meeting. [Intel]: MAC indicates active time and PHY will follow it regardless current active time and future active time. We could not reach the consensus on future active time. So we can only confirm modelling (MAC indicate active time and PHY will follow it). [Lenovo, OPPO, ZTE, Ericsson, Vivo, Huawei, MedaTek]: We agreed with “in the RX UE’s active time where SL DRX timers are running now or will be running in future (at least on-duration timer). Further details of active time can be considered later.” so we can inform RAN1 of this agreement without mentioning of future active time. [CATT]: Prefer option1 considering it is not clear how MAC knows future active time by itself and future active time term will bring more specification impacts. [IDT]: Do we need to send some RAN2 feedbacks on RAN1 options included in the LS? [Session chair]: In realistic, do not think it is possible to provide RAN2 analysis or feedback on RAN1 options now. [LG]: From RAN1 point of view, the most important feedback is whether MAC will indicate the active information to PHY and whether RAN1 can decide which option. [Lenovo, OPPO, Ericsson, Intel, CATT, Xiaomi, Vivo, Qualcomm, Huawei, Nokia, Apple]: Agree with LG. [Session chair]: Based on LG’s comment, RAN2 can include “MAC indicates the active time information to PHY” and “It is up to RAN1 to select an option” [IDT]: What if RAN1 selects an option that is infeasible for RAN2?

* MAC indicates the active time information to PHY.
* It is up to RAN1 to select an option.
* We will send LS to inform RAN1 of the related agreements from this offline discussion [706].

[Proposal 8] RAN2 to choose among below options for triggering resource (re)selection:

Option 1: If the current reserved resources do not fall into the SL DRX active time of any destination. (10/18)

Option 2: If there is no SL grant in the SL DRX active time of the destination that has data to be sent. (13/18)

Option 3: If the MAC layer cannot find resources in the reported set of resources to be aligned with the active time of any desired Destination. (6/18)

Option 4: No trigger needed. (3/18)

* Skipped.

(added) [11/15 Proposal 12] If the value of the SL HARQ RTT timer can be derived when SL HARQ feedback is disabled, the value is the time gap between a start point and a stop point. FFS the first slot after the end of last PSSCH resource scheduled through SCI as the start point. FFS the start of the first reserved retransmission resource as the stop point.

* Skipped.

[9/16 Proposal 13] RAN2 further discuss, when pre-emption is allowed, TX UE does not reselect a resource earlier than the pre-empted resource.

* Skipped.

Agreements on candidate resource selection and HARQ RTT:

1: TX UE shall select initial transmission resource only in the RX UE’s active time where SL DRX timers are running now or will be running in future (at least on-duration timer). Further details of active time can be considered later. FFS on spec impact.

2: If RAN 2 agrees that TX UE shall select initial transmission resource only in the RX UE’s active time, it is applied for all cast types.

3: For each SL grant, the grant is used if it is in active time of at least one destination; otherwise the grant is skipped.

4: Regardless whether HARQ feedback is enabled or disabled, the HARQ RTT timer can be derived based on the resource assignment information for retransmission of the same TB in the SCI if the resource assignment information for retransmission of the same TB is present.

5: When HARQ feedback is disabled, either zero value or non-zero value can be configured for the HARQ RTT timer if the resource assignment information is not present. FFS on details of configuration.

6: Always set the value of the retransmission timer to be a configured value regardless how the UE sets the HARQ RTT timer.

7: MAC indicates the active time information to PHY.

8: It is up to RAN1 to select an option.

9: We will send LS to inform RAN1 of the related agreements from this offline discussion [706]

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

[Session chair]: Only P25 to P30 need to be presented.

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

[Session chair]: Only P11 to P13 need to be presented.

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

[Session chair]: Only P12 needs to be presented.

* [POST116-e][718][V2X/SL] SL DRX configuration (Ericsson)

**Scope:** Address and solve the remaining aspects based on P25 to P30 in R2-2109907, P11 to P13 in R2-2110062, and P12 in R2-2109801.

**Intended outcome:** Discussion summary

**Deadline:** Long email discussion

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

R2-2109610 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

R2-2109724 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

R2-2109812 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

R2-2109908 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

R2-2110119 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).

[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.

R2-2109416 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