3GPP TSG-RAN WG2 Meeting #118 electronic R2-220xxxx  
Online, May 9 – 20, 2022

Agenda Item: 8.8

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**

* [POST118-e][713][V2X/SL] RRC CR (Huawei)

**Scope:** Prepare RRC CR capturing the agreements made this meeting. Note endorsed CR/TP will be merged.

**Intended outcome:** Agree 38.331 CR in R2-2206318. Email approval.

**Deadline:** Short email discussion

* [POST118-e][714][V2X/SL] MAC CR (LG)

**Scope:** Prepare MAC CR capturing the agreements made this meeting. Note endorsed CR/TP will be merged.

**Intended outcome:** Agree 38.321 CR in R2-2206319. Email approval.

**Deadline:** Short email discussion

* [POST118-e][715][V2X/SL] Stage 2 CR (InterDigital)

**Scope:** Prepare stage 2 CR capturing the agreements made this meeting. Note corrections in R2-2205952 and R2-2205269 can be also discussed.

**Intended outcome:** Agree 38.300 CR in R2-2206320. Email approval.

**Deadline:** Short email discussion

* [POST118-e][716][V2X/SL] LS related to P10 in R2-2206310 (Vivo)

**Scope:** Prepare LS to RAN1.

**Intended outcome:** Approve LS in R2-2206316. Email approval.

**Deadline:** Short email discussion

**[AT] Email discussion**

* [AT118-e][701][V2X/SL] Miscellaneous corrections (OPPO)

**Scope:** Discuss corrections in R2-2204856, R2-2204857, R2-2205109, R2-2206043, R2-2204572, R2-2204573, R2-2204645, R2-2204646, R2-2205947 and R2-2205953. Prepare a merged 38.331/36.331 CR for agreeable corrections.

**Intended outcome:** Agree 38.331 CR in R2-2206281 and R2-2206282. Agree 36.331 CR in R2-2206283 and R2-2206284. Discussion summary in R2-2206285 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][702][V2X/SL] Maintenance of SL-SRBs (CATT)

**Scope:** Discuss whether we have normative text or note for proposal 6 and corrections in R2-2204775, R2-2205126, R2-2205127, R2-2204776, and R2-2204777. Prepare agreeable CRs.

**Intended outcome:** Agree 38.321 CR in R2-2206286 and R2-2206287. Agree 38.322 CR in R2-2206288 and R2-2206289. Agree 38.323 CR in R2-2206290 and R2-2206291. Discussion summary in R2-2206292 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][703][V2X/SL] MAC corrections (ASUSTeK)

**Scope:** Discuss the correction in R2-2205125. Prepare agreeable CRs (if correction is needed).

**Intended outcome:** Agree 38.321 CR in R2-2206293 and R2-2206294. Discussion summary in R2-2206295 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][704][V2X/SL] PDCP corrections (Samsung)

**Scope:** Discuss the corrections in R2-2205602 and R2-2205603. Prepare agreeable CRs (if corrections are needed).

**Intended outcome:** Agree 38.323 CR in R2-2206296 and R2-2206297 (if a revision is needed). Discussion summary in R2-2206298 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][705][V2X/SL] Response LS on TX profile (Vivo)

**Scope:** Inform SA2 of RAN2 agreements on TX profile

**Intended outcome:** Approve the LS in R2-2206299. Email approval.

**Deadline:** 5/20 10:00am UTC => Completed

* [AT118-e][706][V2X/SL] RRC corrections (Huawei)

**Scope:** 1st round: Discuss proposals/corrections (including the need of proposals/corrections) proposed in R2-2204643, R2-2205106, R2-2205317, R2-2205347, R2-2205782, R2-2206136, R2-2206137, R2-2204639, R2-2204640, R2-2205183, R2-2205184, R2-2205316, R2-2205318, R2-2205620, R2-2205642, R2-2205644, R2-2204566, R2-2204567, R2-2204577, R2-2204582, R2-2204641 and R2-2205102. Prepare a merged CR for the agreeable proposals/corrections. Note rapporteur can add additional ones if it has higher priority issue from ASN.1 point of view. => 2nd round: Discuss residual RIL issues, prepare LS (LS as output of 1st round discussion), and endorse draft CR (if there is further agreement and change).

**Intended outcome:** 1st round: Discussion summsary in R2-2206300 and 38.331 CR in R2-2206301. Email approval. => 2nd round: Discussion summary in R2-2206310, 38.331 draft CR in R2-2206311 and LS in R2-2206312. Email approval.

**Deadline:** 1st round: 5/16 10:00am UTC => 2nd round: 5/20 10am UTC => Completed

* [AT118-e][707][V2X/SL] MAC corrections (LG)

**Scope:** Discuss proposals/corrections in AI 6.15.2.3 (except the pre-selected issues for online discussion). Prepare a merged CR for the agreeable proposals/corrections.

**Intended outcome:** Summary discussion in R2-2206302 and 38.321 CR in R2-2206303. Email approval.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][708][V2X/SL] Inter-UE coordination (Apple)

**Scope:** 1st round: Discuss proposals/corrections in AI 6.15.2.4 (except the pre-selected issues for online discussion). => 2nd round: Discuss residual issues from the 1st round discussion and prepare LS (if needed)

**Intended outcome:** 1st round: Discussion summary in R2-2206304. Email approval. => 2nd round: Discussion summary in R2-2206313 and LS in R2-2206314. Email approval.

**Deadline:** 1st round: 5/16 10:00am UTC => 2nd round: 5/20 10:00am UTC => Completed

* [AT118-e][709][V2X/SL] SL DRX and L2 relay in Rel-17 (Ericsson)

**Scope:** Discuss whether there are real technical blocking issues that cannot apply SL DRX into L2 relay. Companies not supporting SL DRX should identify the technical blocking issues and companies supporting SL DRX can argue why they’re not real technical blocking issues (or if they can be easily solved by CR implementation). Based on each side arguments and analysis, check companies’ views whether there is real technical blocking issue or not.

**Intended outcome:** Summary discussion in R2-2206305.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][710][V2X/SL] Misc corrections (Huawei)

**Scope:** Discuss R2-2206133 and R2-2206134. Prepare an agreeable CR.

**Intended outcome:** Agree 38.331 CR in R2-2206306. Email approval.

**Deadline:** 5/16 10:00am UTC => Completed

* [AT118-e][711][V2X/SL] UE capability (OPPO)

**Scope:** 1st round: Discuss R2-2204644 and R2-2204673. Prepare an agreeable CR (with category F). => 2nd round: Continue the discussion for R2-2204673 and prepare the CR (if needed)

**Intended outcome:** 1st round: Agree 36.331 CR in R2-2206307 (if revision is needed) and discussion summary in R2-2206308 (if needed). Email approval. => 2nd round: Discussion summary in R2-2206316, 36.331 CR in R2-2206317 and 38.331 CR in R2-2206641 (if needed). Note companies’ inputs on the discussion of the filter in R2-2206308 will be inherited to R2-2206316 (unless companies changes them). Email approval.

**Deadline:** 1st round: 5/18 10:00am UTC => 2nd round: 5/20 10:00am UTC => Completed

* [AT118-e][712][V2X/SL] User plane discussion (OPPO)

**Scope:** Discuss and conclude pre-selected issues for online discussion above.

**Intended outcome:** Discussion summary in R2-2206309. Email approval.

**Deadline:** 5/20 10:00am UTC => Completed

## Approved outgoing LSs

R2-2206299 Reply LS on Tx Profile (R2-2204525/ S2-2203595) LS out Rel-17 NR\_SL\_enh-Core, 5G\_ProSe, eV2XARC\_Ph2 To:SA2 Cc:CT1

R2-2206312 LS on RRC parameters for IUC Scheme 1 and default CBR configuration LS out Rel-17 NR\_SL\_enh-Core To:RAN1

R2-2206314 LS on IUC with non-preferred resource set LS out Rel-17 NR\_SL\_enh-Core To:RAN1

Note: LS in R2-2206316 is supposed to be approved from [POST] email discussion [716].

## 4.3 V2X and Side-link corrections Rel-15 and earlier

REL-15 and Earlier WIs are in scope but not listed explicitly (long list).

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

## 5.2 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 5

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.).

### 5.2.1 General and Stage-2 corrections

Including incoming LSs, rapporteur inputs, etc.

R2-2204454 Reply LS to RAN4 on PEMAX for NR-V2X (R1-2202816; contact: Huawei) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN4 Cc:RAN2

* Noted.

R2-2204513 LS on V2X PC5 link for unicast communication with null security algorithm (R5-222035; contact: HiSilicon) RAN5 LS in To:SA3, CT1, RAN2

* Noted.

R2-2204516 Reply LS on how to receive the first PC5-S unicast message during PC5-S connection setup procedure (S2-2203024; contact: CATT) SA2 LS in Rel-16 eV2XARC, 5G\_V2X\_NRSL-Core To:RAN2

* Noted.

### 5.2.2 Control plane corrections

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

* [AT118-e][701][V2X/SL] Miscellaneous corrections (OPPO)

**Scope:** Discuss corrections in R2-2204856, R2-2204857, R2-2205109, R2-2206043, R2-2204572, R2-2204573, R2-2204645, R2-2204646, R2-2205947 and R2-2205953. Prepare a merged 38.331/36.331 CR for agreeable corrections.

**Intended outcome:** Agree 38.331 CR in R2-2206281 and R2-2206282. Agree 36.331 CR in R2-2206283 and R2-2206284. Discussion summary in R2-2206285 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC

R2-2206285 Summary [AT118-e][701][V2X/SL] Miscellaneous corrections (OPPO) OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1. The change on “Delete the radio bearer constraint for the T400 startup.” in R2-2204856/ R2-2204857 is agreed in R2-2206281/ R2-2206282.

Proposal 2. The change on “Adding a reference for the value offset00 in SL-PTRS-Config field descriptions.” in R2-2204856/ R2-2204857 is agreed in R2-2206281/ R2-2206282.

Proposal 3. The change on “Correction on name of IE SL-RLC-BearerConfigIndex.” in R2-2204856/ R2-2204857 is agreed in R2-2206281/ R2-2206282.

Proposal 4. The change on “Change sl-Tx-ConfigIndexList in the field description of sl-DefaultTxConfigIndex to sl-Tx-ConfigIndexList.” in R2-2204572/ R2-2204573 is agreed in R2-2206281/ R2-2206282.

Proposal 5. The change on “Correct that v2x-BandParametersNR, which refer to BandParametersSidelink-r16 is a per-band per-band-combination feature.” in R2-2204645/ R2-2204646 is agreed in R2-2206283/ R2-2204646.

Proposal 6. The change on “Correction on the format of the names to “-r16-IEs”.” in R2-2205947/ R2-2205953 is agreed in R2-2206281/ R2-2206282.

* All proposals above are agreed.

R2-2204855 Summary of Rel-16 control plane corrections Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core Late

* Noted.

R2-2204856 Miscelleneous corrections Huawei, HiSilicon CR Rel-16 38.331 16.8.0 3002 - F 5G\_V2X\_NRSL-Core

* Treated in offline discussion [AT118-e][701]

R2-2204857 Miscelleneous corrections Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3003 - A 5G\_V2X\_NRSL-Core

* Treated in offline discussion [AT118-e][701]

R2-2205109 Clarification on power control parameter ZTE Corporation, Sanechips,vivo CR Rel-16 38.331 16.8.0 3050 - F 5G\_V2X\_NRSL-Core

* Treated in offline discussion [AT118-e][701]

R2-2206043 Correction on SUI message OPPO CR Rel-16 38.331 16.8.0 3153 F 5G\_V2X\_NRSL-Core

* Treated in offline discussion [AT118-e][701]

R2-2204572 Correction on field description of sl-DefaultTxConfigIndex OPPO CR Rel-16 38.331 16.8.0 2973 - F 5G\_V2X\_NRSL-Core

R2-2206281 Miscellaneous corrections on TS 38.331 for NR V2X OPPO, Huawei, HiSilicon, Lenovo CR Rel-16 38.331 16.8.0 2973 1 F 5G\_V2X\_NRSL-Core

* Agreed in R2-2206630 (with new CR number).

R2-2204573 Correction on field description of sl-DefaultTxConfigIndex OPPO CR Rel-17 38.331 17.0.0 2974 - A 5G\_V2X\_NRSL-Core

R2-2206282 Miscellaneous corrections on TS 38.331 for NR V2X OPPO, Huawei, HiSilicon, Lenovo CR Rel-17 38.331 17.0.0 2974 1 A 5G\_V2X\_NRSL-Core

* Agreed in R2-2206631 (with new CR number).

R2-2204645 Correction on per-FS capability OPPO CR Rel-16 36.331 16.8.0 4782 - F 5G\_V2X\_NRSL-Core

R2-2206283 Correction on per-FS capability OPPO CR Rel-16 36.331 16.8.0 4782 1 F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2204646 Correction on per-FS capability OPPO CR Rel-17 36.331 17.0.0 4783 - A 5G\_V2X\_NRSL-Core

* Agreed.

R2-2205947 Miscellaneous corrections         Lenovo            draftCR            Rel-16   38.331 16.8.0  F          5G\_V2X\_NRSL-Core, TEI16

* Treated in offline discussion [AT118-e][701]

R2-2205953 Miscellaneous corrections         Lenovo            draftCR            Rel-17   38.331 17.0.0  A          TEI16, 5G\_V2X\_NRSL-Core

* Treated in offline discussion [AT118-e][701]

R2-2204844 Discussion on null security algorithm ZTE Corporation, Sanechips discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2205108 (draft)reply LS on null security algorithm ZTE Corporation, Sanechips LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN5 Cc:SA3,CT1

R2-2204859 Clarification on PC5 AS security Huawei, HiSilicon CR Rel-16 38.331 16.8.0 3004 - F 5G\_V2X\_NRSL-Core

R2-2204860 Clarification on PC5 AS security Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3005 - A 5G\_V2X\_NRSL-Core

R2-2204858 [Draft] Reply LS on V2X PC5 link for unicast communication with NULL security algorithm Huawei, HiSilicon LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN5 Cc:SA3, CT1

R2-2205577 Clarifying support of null security algorithm for SL-SRB2 and SL-SRB3 MediaTek Inc. CR Rel-16 38.331 16.8.0 3101 - F 5G\_V2X\_NRSL-Core

R2-2205578 Clarifying support of null security algorithm for SL-SRB2 and SL-SRB3 MediaTek Inc. CR Rel-17 38.331 17.0.0 3102 - A 5G\_V2X\_NRSL-Core

[Session chair]: Should we wait for SA3 response LS or correct RAN2 specification now? [ZTE, Ericsson]: We should wait for SA3 since it’s SA3 scope. In case we correct RAN2 spec now and if we have different SA3 opinion, we should correct it again. [Huawei]: Prefer changing RAN2 spec now.

* We should wait for SA3 response LS before updating RAN2 spec.

[Session chair]: Do we need any response LS? [Huawei]: We can just wait.

* No response LS is needed now.

### 5.2.3 User plane corrections

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

R2-2204774 PDCPRLC Entity Maintenance for SL-SRBs CATT discussion Rel-16 5G\_V2X\_NRSL-Core

[Session chair]: Confirm the following working assumptions as agreements?

Proposal 2: RAN2 confirmed that the Rx UE will not deliver the decoded MAC PDU to the disassembly and demultiplexing entity if it doesn’t know the source layer-2 ID used by the Tx UE.

Proposal 3: RAN2 confirmed that the current description for the PDCP/RLC entities

establishment is unclear, some further clarification is needed.

Proposal 4: RAN2 agree to resolve the mac filtering issue and PDCP/RLC entity establishment issue in AS layer.

Proposal 5: RAN2 agree to add one note in MAC spec to solve the mac filtering issue for at least scenario2/3. The below content can be further discussed during phase-III and submitted one CR to the incoming RAN2 meeting.

(38.321)NOTE: If this TB is associated to unicast and this TB is the first TB of a logical channel which associated LCID is equal to 0 or 1, and the DST field of the decoded MAC PDU subheader is equal to the 8 MSB of any of the Source Layer-2 ID(s) of the UE for which the 16 LSB are equal to the Destination ID in the corresponding SCI, deliver the decoded MAC PDU to the disassembly and demultiplexing entity.

Proposal 6: RAN2 agree to add one note in PDCP/RLC spec to solve the PDCP/RLC entity establishment issue for scenario2/3. The below content can be further discussed during phase-III and submitted one CR to the incoming RAN2 meeting.

(38.323)NOTE: The PDCP entity for NR sidelink communication for SL-SRB0 and SL-SRB1 is established as NR sidelink communication for groupcast and broadcast.

(38.322)NOTE: The RLC entity for NR sidelink communication for SL-SRB0 and SL-SRB1 is established as NR sidelink communication for groupcast and broadcast.

* (From RAN2#117-e) Working assumption for proposal 2, 3, 4, 5 and 6 for the case if SA2 confirms the problem. For proposal 6, it is FFS whether we will have normative text or note.
* Confirmed the working assumptions above as agreements.
* [AT118-e][702][V2X/SL] Maintenance of SL-SRBs (CATT)

**Scope:** Discuss whether we have normative text or note for proposal 6 and corrections in R2-2204775, R2-2205126, R2-2205127, R2-2204776, and R2-2204777. Prepare agreeable CRs.

**Intended outcome:** Agree 38.321 CR in R2-2206286 and R2-2206287. Agree 38.322 CR in R2-2206288 and R2-2206289. Agree 38.323 CR in R2-2206290 and R2-2206291. Discussion summary in R2-2206292 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC

R2-2204775 Corrections on MAC filtering issue for the first unicast PC5-S signalling CATT CR Rel-16 38.321 16.8.0 1259 - F 5G\_V2X\_NRSL-Core

R2-2206286 Corrections on the MAC filtering for SL-SRB0/SL-SRB1 CATT CR Rel-16 38.321 16.8.0 1259 1 F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2206287 Corrections on the MAC filtering for SL-SRB0/SL-SRB1 CATT CR Rel-17 38.321 17.0.0 1293 - A 5G\_V2X\_NRSL-Core

* Agreed.

R2-2205126 TB filtering in MAC ASUSTeK CR Rel-16 38.321 16.8.0 1256 - F 5G\_V2X\_NRSL-Core

R2-2205127 TB filtering in MAC ASUSTeK CR Rel-17 38.321 17.0.0 1257 - A 5G\_V2X\_NRSL-Core

R2-2204776 Corrections on RLC entity establishment issue for the first unicast PC5-S signalling CATT CR Rel-16 38.322 16.2.0 0047 - F 5G\_V2X\_NRSL-Core

R2-2206288 Corrections on the receiving RLC entity establishment for SL-SRB0/SL-SRB1 CATT CR Rel-16 38.322 16.2.0 0047 1 F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2206289 Corrections on the receiving RLC entity establishment for SL-SRB0/SL-SRB1 CATT CR Rel-17 38.322 17.0.0 0049 - A 5G\_V2X\_NRSL-Core

* Agreed.

R2-2204777 Corrections on PDCP entity establishment issue for the first unicast PC5-S signalling CATT CR Rel-16 38.323 16.6.0 0089 - F 5G\_V2X\_NRSL-Core

R2-2206290 Corrections on receiving PDCP entity establishment for SL-SRB0/SL-SRB1 CATT CR Rel-16 38.323 16.6.0 0089 1 F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2206291 Corrections on receiving PDCP entity establishment for SL-SRB0/SL-SRB1 CATT CR Rel-17 38.323 17.0.0 0095 - A 5G\_V2X\_NRSL-Core

* Agreed.
* [AT118-e][703][V2X/SL] MAC corrections (ASUSTeK)

**Scope:** Discuss the correction in R2-2205125. Prepare agreeable CRs (if correction is needed).

**Intended outcome:** Agree 38.321 CR in R2-2206293 and R2-2206294. Discussion summary in R2-2206295 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC

R2-2206295 [AT118-e][703][V2X/SL] MAC corrections (ASUSTeK) ASUSTeK discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal 1: The first change in R2-2205125 is postponed. RAN2 to discuss whether UL grant skipping can be supported with sidelink UE in the next meeting.

Proposal 2: The second change in R2-2205125 is not agreed.

Proposal 3: The third change in R2-2205125 is not agreed.

Proposal 4: The fourth change in R2-2205125 is not agreed.

Proposal 5: The fifth change in R2-2205125 is agreed in R2-2206293.

* All proposals above are agreed.

R2-2205125 Corrections on SL configured grant and SL BSR ASUSTeK CR Rel-16 38.321 16.8.0 1255 - F 5G\_V2X\_NRSL-Core

R2-2206293 Corrections on SL BSR ASUSTeK CR Rel-16 38.321 16.8.0 1255 1 F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2206294 Corrections on SL BSR ASUSTeK CR Rel-17 38.321 17.0.0 1299 - A 5G\_V2X\_NRSL-Core

* Agreed.

R2-2205602 Correction on PDCP SN setting for SLRB transmit operation Samsung CR Rel-16 38.323 16.6.0 0091 - F 5G\_V2X\_NRSL-Core

* Agreed.

R2-2205603 Correction on PDCP SN setting for SLRB transmit operation Samsung CR Rel-17 38.323 17.0.0 0092 - A 5G\_V2X\_NRSL-Core

* Agreed.

[ZTE, Apple, Vivo]: Agree with the CRs now [CATT]: The CR is not essential (although the intention is correct) since RRC spec already specifies it. [Samsung]: Not sure what/where RRC spec specifies.

* [AT118-e][704][V2X/SL] PDCP corrections (Samsung)

**Scope:** Discuss the corrections in R2-2205602 and R2-2205603. Prepare agreeable CRs (if corrections are needed).

**Intended outcome:** Agree 38.323 CR in R2-2206296 and R2-2206297 (if a revision is needed). Discussion summary in R2-2206298 (if needed). Email approval.

**Deadline:** 5/16 10:00am UTC

R2-2206298 [AT118-e][704][V2X/SL] PDCP corrections Samsung discussion Rel-16 5G\_V2X\_NRSL-Core

Proposal: RAN2 is to agree R2-2205602 and R2-2205603.

* Agreed.

R2-2204778 Correction on user plane aspects (Rapporteur CR) LG Electronics France CR Rel-16 38.321 16.8.0 1234 - F 5G\_V2X\_NRSL-Core Late

=> Withdrawn

R2-2205144 Summary of MAC corrections (Rapporteur) LG Electronics France discussion Rel-16 38.321 5G\_V2X\_NRSL-Core Late

=> Withdrawn

## 6.15 NR Sidelink enhancements

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

WI has been declared 100% complete

Note some agenda item(s) may use pre-meeting discussion based on a summary document.

### 6.15.1 Organizational

Including incoming LSs, rapporteur inputs, etc.

R2-2204525 Reply LS on Tx Profile (S2-2203595; contact: LGE) SA2 LS in Rel-17 NR\_SL\_enh-Core, 5G\_ProSe, eV2XARC\_Ph2 To:RAN2 Cc:CT1

* Noted.
* [AT118-e][705][V2X/SL] Response LS on TX profile (Vivo)

**Scope:** Inform SA2 of RAN2 agreements on TX profile

**Intended outcome:** Approve the LS in R2-2206299. Email approval.

**Deadline:** 5/20 10:00am UTC

R2-2206299 Reply LS on Tx Profile (R2-2204525/ S2-2203595) LS out Rel-17 NR\_SL\_enh-Core, 5G\_ProSe, eV2XARC\_Ph2 To:SA2 Cc:CT1

* Approved.
* [AT118-e][710][V2X/SL] Misc corrections (Huawei)

**Scope:** Discuss R2-2206133 and R2-2206134. Prepare an agreeable CR.

**Intended outcome:** Agree 38.331 CR in R2-2206306. Email approval.

**Deadline:** 5/16 10:00am UTC

R2-2206133 Misc Class 0 corrections on TS 38.331 for SL enhancement Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3174 - D NR\_SL\_enh-Core

* Changes as output of [AT118-e][710] are merged into R2-2206301

R2-2206134 Misc Class 1 Class 2 corrections on TS 38.331 for SL enhancement Huawei, HiSilicon CR Rel-17 38.331 17.0.0 3175 - F NR\_SL\_enh-Core

* Changes as output of [AT118-e][710] are merged into R2-2206301

R2-2206135 Summary of pre-discussion on RIL issues Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2206138 Rapporteur resolution for various RILs Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

* [AT118-e][711][V2X/SL] UE capability (OPPO)

**Scope:** 1st round: Discuss R2-2204644 and R2-2204673. Prepare an agreeable CR (with category F). => 2nd round: Continue the discussion for R2-2204673 and prepare the CR (if needed)

**Intended outcome:** 1st round: Agree 36.331 CR in R2-2206307 (if revision is needed) and discussion summary in R2-2206308 (if needed). Email approval. => 2nd round: Discussion summary in R2-2206316 and CR in R2-2206317 (if needed). Note companies’ inputs on the discussion of the filter in R2-2206308 will be inherited to R2-2206316 (unless companies changes them). Email approval.

**Deadline:** 1st round: 5/18 10:00am UTC => 2nd round: 5/20 10:00am UTC

R2-2204644 Introduction of UE capability for Rel-17 sidelink OPPO CR Rel-17 36.331 17.0.0 4781 - B NR\_SL\_enh-Core

[Apple]: Category should be changed to “F”. [Ericsson]: Is it related to SL relay? [OPPO]: It has nothing to do with SL relay.

R2-2206307 Introduction of UE capability for Rel-17 sidelink OPPO CR Rel-17 36.331 17.0.0 4781 - F NR\_SL\_enh-Core

[Session chair]: Revision number is missed.

* Revision number should be added.
* Agreed in R2-2206315 with the above change.

R2-2206308 Summary of [AT118-e][711][V2X/SL] UE capability (OPPO) OPPO discussion Rel-17 NR\_SL\_enh-Core

Proposal 1 Introduce a filter in NR to enable / disable the report of supportedBandCombinationListSidelinkEUTRA-NR-v17xy, and a filter in LTE to enable / disable the report of v2x-SupportedBandCombinationListEUTRA-NR-v17xy.

* Agreed.

R2-2206317 Introduction of capability filter for Rel-17 sidelink OPPO CR Rel-17 36.331 17.0.0 4824 - F NR\_SL\_enh-Core

* Agreed.

R2-2206641 Introduction of capability filter for Rel-17 sidelink OPPO DraftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

* Endorsed.
* [AT118-e][706][V2X/SL] RRC corrections (Huawei)

**Scope:** 1st round: Discuss proposals/corrections (including the need of proposals/corrections) proposed in R2-2204643, R2-2205106, R2-2205317, R2-2205347, R2-2205782, R2-2206136, R2-2206137, R2-2204639, R2-2204640, R2-2205183, R2-2205184, R2-2205316, R2-2205318, R2-2205620, R2-2205642, R2-2205644, R2-2204566, R2-2204567, R2-2204577, R2-2204582, R2-2204641 and R2-2205102. Prepare a merged CR for the agreeable proposals/corrections. Note rapporteur can add additional ones if it has higher priority issue from ASN.1 point of view. => 2nd round: Discuss residual RIL issues, prepare LS (LS as output of 1st round discussion), and endorse draft CR (if there is further agreement and change).

**Intended outcome:** 1st round: Discussion summsary in R2-2206300 and 38.331 CR in R2-2206301. Email approval. => 2nd round: Discussion summary in R2-2206310, 38.331 draft CR in R2-2206311 and LS in R2-2206312. Email approval.

**Deadline:** 1st round: 5/16 10:00am UTC => 2nd round: 5/20 10am UTC

R2-2206300 Summary of [AT118-e][706][V2X/SL] RRC corrections (Huawei) Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

Based on the companies input and further discussion on RAN2 email reflector, the following proposals to be agreed via email, together with CR in R2-2206301 based on those proposals:

[Proposal 1] TP in R2-2204643 for RILO099 is accepted, except “2> configure lower layers to perform sidelink DRX operation according to sl-DRX-ConfigUC-PC5 for the associated destination as defined in TS 38.321 [3];” is to be used instead of “2> apply the configured sidelink DRX configuration”. (12/12)

[Proposal 2] On RX UE reporting to its gNB, TP in R2-2205317 is adopted (except RX UE reporting destination for received SL DRX from UC).

[Proposal 3] Cast type is not needed in RX UE reporting to its gNB. (9/12)

[Proposal 4] Revise NOTE 3 as:

NOTE 3: It is up to UE implementation to determine, in accordance with TS 38.321[3], which resource pool to use if multiple resource pools are configured, and which resource allocation scheme is used in the AS based on UE capability (for a UE in RRC\_IDLE/RRC\_INACTIVE) and the allowed resource schemes sl-allowedResourceSelectionConfig in the resource pool configuration. (10/11)

[Proposal 5] Remove the duplicated IEs related to power saving resource pool. (7/12)

[Proposal 6] Add transmission/reception after "NR sidelink communication" instead of changing to "NR sidelink transmission/reception". (5/12)

[Proposal 7] Place the condition “if sl-DRX-ConfigCommon-GC-BC is included in SIB12-IEs:” in both 5.8.3.2 and 5.8.3.3 as in R2-2204640. (6/12)

[Proposal 8] Send LS, based on R2-2204582, to ask RAN1 on how to handle the duplicated defined R16/R17 default CBR parameters. (8/12)

(modified) [Proposal 9] Regarding RILs A914, A918, A919, ask RAN1 with LS, based on R2-2205643 except Q1. (8/12)

[Proposal 10] RILs X209, X210 are rejected. (10/12)

[Proposal 11] RIL O074 is rejected. (10/11)

[Proposal 12] Agree TP in Annex D for clause 5.8.9.6.3 description. (11/11). Remove " based on UE implementation" in the last sentence above NOTE.

[Proposal 13] RIL Z684 is rejected. (8/11)

* All proposals from proposal 1 to proposal 13 are agreed.

The following proposals need further discussion, corresponding TP will be further discussed accordingly:

[Proposal 2a] RX UE includes destination in reporting to its gNB.

[Proposal 4a] RAN2 to confirm and revise field description of sl-AllowedResourceSelectionConfig accordingly: when sl-AllowedResourceSelectionConfig is absent in sl-TxPoolSelectedNormal or sl-TxPoolSelectedNormalPS, only full sensing is allowed in the corresponding resource pool. Discuss whether to ask RAN1 via LS.

[Proposal 4b] RAN2 to confirm that UE first selects a resource pool, then selects RA scheme configured for the selected resource pool. Further revise NOTE 3 as:

NOTE 3: It is up to UE implementation to determine, in accordance with TS 38.321[3], which resource pool to use if multiple resource pools are configured, and which resource allocation scheme is finally used in the AS based on UE capability (for a UE in RRC\_IDLE/RRC\_INACTIVE) and the allowed resource schemes sl-allowedResourceSelectionConfig in the selected resource pool.

R2-2206301 Corrections for SL enhancements Huawei, HiSilicon DraftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

* Endorsed and will be merged with further agreements made this meeting.

R2-2206310 Summary of 2nd round [AT118-e][706][V2X/SL] RRC corrections (Huawei) Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

[Proposal 1] RIL E107 is rejected.

[Proposal 2] RIL V401 is agreed with following change: for TX UE reporting assistance information to its gNB, add condition "when the UE is configured with sl-ScheduledConfig ".

[Proposal 3] RIL Z676 is rejected.

[Proposal 4] RIL E096 is rejected.

[Proposal 5] RIL O098 is rejected.

[Proposal 6] RIL N035 is agreed, change "Need M" to "Need R".

[Proposal 7] RIL B203 is rejected.

[Proposal 8] RIL O029 is agreed and to remove the current "empty" sentence.

[Proposal 9] Not to support that RX UE includes destination in reporting to its gNB, for received SL DRX from UC.

[(revised) P10]: Ask RAN1 in LS: "When sl-AllowedResourceSelectionConfig is absent in the configuration of sl-TxPoolSelectedNormal within sl-BWP-PoolConfig-r16 or sl-TxPoolSelectedNormal within sl-BWP-PoolConfigPS-r17, RAN2 understands the default UE behavior is full sensing in the corresponding resource pool. RAN2 respectfully ask RAN1 to confirm and feedback if any concern.” [Proposal 11] Not to specify in RRC on the UE order of selection, e.g. that UE first selects a resource pool, then selects RA scheme configured for the selected resource pool.

* All proposals above are agreed.

R2-2206311 Corrections for SL enhancements Huawei, HiSilicon DraftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

* Endorsed and will be merged with further agreements made this meeting.

R2-2206312 LS on RRC parameters for IUC Scheme 1 and default CBR configuration LS out Rel-17 NR\_SL\_enh-Core To:RAN1

* Approved.
* [POST118-e][716][V2X/SL] LS related to P10 in R2-2206310 (Vivo)

**Scope:** Prepare LS to RAN1.

**Intended outcome:** Approve LS in R2-2206316. Email approval.

**Deadline:** Short email discussion

R2-2205952 Miscellaneous Corrections to eSL InterDigital (Rapporteur) CR Rel-17 38.300 17.0.0 0469 - D NR\_SL\_enh-Core

* [POST118-e][713][V2X/SL] RRC CR (Huawei)

**Scope:** Prepare RRC CR capturing the agreements made this meeting. Note endorsed CR/TP will be merged.

**Intended outcome:** Agree 38.331 CR in R2-2206318. Email approval.

**Deadline:** Short email discussion

* [POST118-e][714][V2X/SL] MAC CR (LG)

**Scope:** Prepare MAC CR capturing the agreements made this meeting. Note endorsed CR/TP will be merged.

**Intended outcome:** Agree 38.321 CR in R2-2206319. Email approval.

**Deadline:** Short email discussion

* [POST118-e][715][V2X/SL] Stage 2 CR (InterDigital)

**Scope:** Prepare stage 2 CR capturing the agreements made this meeting. Note corrections in R2-2205952 and R2-2205269 can be also discussed.

**Intended outcome:** Agree 38.300 CR in R2-2206320. Email approval.

**Deadline:** Short email discussion

### 6.15.2 Essential corrections

No documents should be submitted to 6.15.2. Please submit to 6.15.2.x.

#### 6.15.2.1 Control plane procedure for UC DRX

Including whether Rx-UE use the message of RRCReconfigurationCompleteSidelink or RRCReconfigurationFailureSidelink to reject a DRX configuration, default SL DRX configuration for non-initial SL DRX configuration when reject happens, whether the TX UE should keep in active time after sending RRCReconfigurationSL, detailed (configuration) information included into each PC5-RRC, etc.

Need of inactivity timer in assistance information from RX UE?

* Yes (e.g. in R2-2205099)
* No (e.g. in R2-2204578)
* No inactivity timer in assistance information from RX UE.

[Session chair]: Most companies supported “No” based on contributions. Can we go “No”? [Apple, ZTE]: Prefer having inactivity timer in assistance information. [Session chair]: Check company view:

* Yes: Apple, ZTE (2)
* No: Ericsson, Xiaomi, Nokia, Qualcomm, OPPO, LG, IDT, Lenovo, Huawei, Samsung, Intel (11)

How to signal multiple DRX settings in assistance information?

* Option1: List of SL-PreferredDRXConfig-r17 w/o signalling optimization (e.g. in R2-2205537):
* Option2: W/ signalling optimization (e.g. to use value range of each timer in R2-2204578):
* List of SL-PreferredDRXConfig-r17 w/o signalling optimization is included in assistance information from RX UE (e.g. in R2-2205537)

[Session chair]: Check company view:

* Option 1: LGE, CATT, Xiaomi, IDT, Samsung, Vivo, Lenovo, Huawei, Qualcomm (9)
* Option 2: Ericsson, Apple, ZTE, OPPO, Nokia, OPPO (6)

Which SL RRC message is used to reject SL DRX configuration (assuming all other configurations in RRC reconfiguration sidelink (e.g. SL radio bearer configurations, etc.) are ok)?

* RRC reconfiguration complete sidelink (e.g. in R2-2204578)
  + Option 1: W/ partial success/failure (only SL DRX configuration fails and others are configured)
* RRC reconfiguration failure sidelink (e.g. in R2-2204954)
  + Option 2: W/ partial success/failure
  + Option 3: W/o partial success/failure
* Option 1 with an indication

[OPPO]: RRC reconfiguration complete is preferred. It seems more aligned with Uu case. [Session chair]: If we use RRC reconfiguration failure, SL communication itself will be delayed until RX UE likes it. Is it critical? [Apple]: Either way is ok, but key point is that we need an indication. Slightly prefer RRC reconfiguration complete sidelink. [LG]: We need to include an indication into both messages, e.g. when both SL RB configuration and SL DRX configuration fail, we still need an indication in RRC reconfiguration failure sidelink to inform SL DRX configuration is rejected. [Ericsson]: We don’t have any partial success/failure in Uu. Prefer RRC reconfiguration failure in that sense (whole SL configurations will fail although only SL DRX configuration fails while other configurations are ok) [Session chair]: Check company view:

* Option 1: OPPO, Huawei, Apple, Xiaomi, IDT, NEC, Intel, Samsung (8)
* Option 2: ZTE, Qualcomm, Lenovo, IDT, LGE, CATT (6)
* Option 3: Qualcomm, Nokia, Ericsson, CATT (4)

Which UL RRC Msg is used to forward SL DRX configuration reject (e.g. in case of mode 1) to the gNB?

* Sidelink UE Information NR (w/ indication) (e.g. in R2-2205097)
* Sidelink UE Information NR with an indication.

Default SL DRX configuration for non-initial SL DRX configuration if rejected?

* Option1: No SL DRX (e.g. in R2-2204578)
* Option2: Latest applied SL DRX configuration (e.g. in R2-2204861)
* Option3: Default SL DRX configuration for GC/BC (e.g. in R2-2204578)
* Option 1 is agreed.

[OPPO]: Critical issue for option 2 is how gNB/TX UE is aware of previously applied SL DRX configuration (e.g. in mode change). We need to discuss additional mechanism for the gNB/TX UE to be aware of it. [Qualcomm, Ericsson]: Previous SL DRX configuration should be informed to the gNB/TX UE. [IDT]: Another critical issue for option2 is it makes more difficult for the gNB/TX UE can reconfigure SL DRX configuration even though it is needed for some reasons in TX side.

* Option 1: OPPO, Vivo, IDT, Samsung, ASUSTek, NEC, CATT, Nokia, Ericsson (9)
* Option 2: Lenovo, LGE, Huawei, ZTE, Apple, Qualcomm, Intel (7)
* Option 3: None

[Ericsson]: We should maximize power saving gain, so prefer option 2. [IDT]: System operation should be prioritized over power saving. Power saving operation is done in the best-effort manner when it is ok to be applied in overall system point of view. [OPPO]: gNB/TX UE should be able to release SL DRX configuration. In this case, anyway option1 should be applied. We may consider option 1 for SL DRX configuration release/reset case and otherwise option 2 as compromise. [Huawei]: What about option 3 as compromise? The UE still can have power saving gain and some issue of option 2 will not exist. [Session chair]: Check companies’ views.

* Option 3: OPPO, Qualcomm, Huawei, IDT, ZTE, LGE (6)

[Ericsson]: To make a progress, we are ok to support option 1.

Whether TX UE remains active for RRC reconfiguration complete/failure sidelink reception?

* Yes (e.g. in R2-2204862)
* No (e.g. in R2-2204578)
* TX UE remains active for RRC reconfiguration complete/failure sidelink reception (only for initial RRC reconfiguration sidelink case). If TX UE already applies SL DRX configuration in the direction (RX UE -> TX UE), TX UE follows the current SL DRX configuration.

[Session chair]: To R2-2204578, we already agreed SL DRX for UC is per direction, which means “No” should be. [Qualcomm]: It may depend on how far two SL DRX configuration procedure are. If far away, the timer T400 may expire and it brings SL DRX configuration failure. [Vivo]: Agree with Qualcomm. Yes, SL DRX configuration failure can happen if T400 is too short. [OPPO]: WI is completed and if we go “No”, we don’t have any additional issues, but if we go “Yes”, we need to spend time for additional issues. For concerns from Qualcomm, we do not consider it is a critical issue to be handled in Rel-17. Prefers “No”. [Session chair]: Check companies’ views.

* Yes: Lenovo, Huawei, IDT, LG, Ericsson, Nokia, Apple, Intel, Vivo, Qualcomm (9)
* No: OPPO, Samsung, Xiaomi, CATT, ZTE (5)

[OPPO]: Does TX UE always remains active for all RRC reconfiguration complete/failure sidelink or only for initial one where SL DRX is not configured for the direction (RX UE -> TX UE)? Do we need to define stop condition assuming waiting for RRC reconfiguration complete/failure sidelink in active time is considered as entering condition? [LG]: We may need to define which SL DRX configuration (between already configured one according to the direction (RX UE -> TX UE) or remaining active for RRC reconfiguration complete/failure sidelink reception) will be used when SL DRX is already configured for the direction (RX UE -> TX UE)? [Lenovo, Ericsson, Xiaomi, ZTE, Qualcomm, IDT]: Nothing special needs to be added. Only for initial RRC reconfiguration case, TX UE remains active. If TX UE already applies SL DRX configuration for the direction (RX UE -> TX UE), it uses the current SL DRX configuration for RRC reconfiguration complete/failure sidelink reception. [Vivo]: It would be simpler to apply it to all case regardless of SL DRX configuration for the direction (RX UE -> TX UE). [OPPO, Vivo, Lenovo, Ericsson]: Ok with the modified proposal.

R2-2204578 Discussion on left issues on control plane procedure for UC DRX OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2204643 Correction on [O099] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

R2-2204861 Discussion and TP for correction on RX UE reject behaviour Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2204862 Consideration on active time during uincast connection establishment Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2204954 Consideration for Control Plane Procedure for UC DRX CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2204955 Correction on the SL Active Time CATT draftCR Rel-17 38.321 17.0.0 NR\_SL\_enh-Core

R2-2204970 Remaining issues on SL DRX UC CP aspects for UC procedure Lenovo discussion Rel-17

R2-2204971 Remaining issues for user plane of sidelink enhancement Lenovo discussion Rel-17

R2-2205096 Discussion on the case that no SL DRX configuration is received from TX UE ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205097 Discussion on remaining issues for SL DRX rejection ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205106 [Z684]Correction on Destination ID list ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3049 - F NR\_SL\_enh-Core

R2-2205116 remaining issues for control plane procedure for UC DRX LG Electronics France discussion

R2-2205148 Discussion on Rx UE’s rejection for SL DRX configuration NEC Corporation discussion

R2-2205178 Remaining control procedure of SL DRX Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2205263 Remaining issues on CP procedure for UC DRX vivo discussion Rel-17

R2-2205264 Uu RRC impact by SL-DRX rejection from RX UE vivo discussion Rel-17

R2-2205315 Discussion on UC sidelink DRX reject procedure Xiaomi discussion

R2-2205317 [X202][H663] Discussion on how RX UE to report accepted SL DRX and interested QoS Xiaomi discussion

R2-2205346 Correction on control plane ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3069 - F NR\_SL\_enh-Core Late

R2-2205347 Correction on [Z677,Z680] ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3070 - F NR\_SL\_enh-Core

R2-2205534 DRX configuration reject Samsung discussion

R2-2205605 Correction of SL DRX for SL discovery Samsung discussion Rel-17 NR\_SL\_enh-Core

R2-2205606 Correction of SL DRX for L2 U2N Relay Samsung discussion Rel-17 NR\_SL\_enh-Core

R2-2205706 Discussion on Procedure for UC SL DRX Qualcomm India Pvt Ltd discussion

R2-2205782 [E101] Correction on resource pool handling Ericsson draftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

R2-2205790 Open issues for SL DRX Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2205913 Open Issues on Signaling for Unicast DRX Configuration InterDigital discussion Rel-17 NR\_SL\_enh-Core

R2-2205914 Handling DRX Following DCR Message InterDigital, Ericsson, Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2206136 [H660][V402][V403] Discussion on actions related to reception of UEAssistanceInformationSidelink message Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2206137 [H663] [Z679] [X202] Discussion on implementation of RX UE reporting information related to SL DRX Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

#### 6.15.2.2 Configuration aspects

Including TX profile for GC/BC, detailed configuration aspects, value ranges of timers/offsets (including other SL DRX related parameters), etc.

Do not confirm the previous WAs

* “No additional RAN2 work if SA2 confirms it’s feasible for Rel-17 SL DRX operation, L2 id is only associated with either DRX-based TX profile(s) or non-DRX based TX profile(s)”.
* “For GC, we will check with SA2 whether the mapping from L2 id to TX profile is feasible in the gNB (like what we did in LTE). Working assumption: no additional RAN2 work if SA2 confirms it’s feasible.”
* Working assumptions are not confirmed.
* RAN2 assumption: For a given L2 id, all TX and RX UEs should be configured with the same set of TX profile(s) (including DRX on/off). We need to check with SA2.

[Apple]: For the first WA, we may still keep “no additional RAN2 work” if the upper layer provides the indication whether SL DRX is applied or not when multiple TX profiles are associated with a L2 id. [IDT, Vivo, Lenovo]: Many companies proposed a solution SL DRX is applied only when all TX profiles for a L2 id support SL DRX. Considering WI is completed, we should avoid further interactions with SA2 to make a decision. [Ericsson, Huawei, Qualcomm]: We should avoid complicated solution. Simple solution is ok. [LG]: Since QoS information is already provided in SUI, the information whether SL DRX is applied or not should be informed. [Apple]: For a L2 id, is it possible each group UE(s) has different TX profiles (e.g. UE#1 has 1st set of TX profiles and UE#2 has 2nd set of TX profiles that has different to the 1st set of TX profiles)? If allowed, we’re not sure how SL DRX can be supported. [Vivo, IDT, ZTE, Qualcomm, Ericsson, Xiaomi]: Assumption is for a given L2 id, all member UEs should be configured with the same set of TX profiles. [Ericsson, LG]: It should be for a given service type. [Lenovo, Apple]: From RAN2 point of view, it is for a L2 id. [OPPO]: We should also consider BC in addition to GC.

How can the gNB know L2 id and the corresponding TX profile?

* UE reports L2 id and the corresponding TX profile information (e.g. in R2-2204863)
  + What information for TX profile?
    - QoS information?
    - SL DRX on/off?
* For GC, UE reports L2 id and SL DRX on/off indication to the gNB.

[Vivo]: Why we need QoS information? [Apple, Huawei]: QoS information is already reported in current SUI. [Ericsson]: QoS information is not part of TX profile information. [Session chair] Seems multiple companies assume L2 id and DRX on/off indication should be reported considering QoS information is already included in SUI. Can we go that direction? [Ericsson]: Why not simply agree with L2 id and the corresponding TX profile information? [Session chair]: Any difference between L2 id & DRX on/off and L2 id & TX profile information? [Ericsson]: No real difference based on the current TX profile. Ok with it.

How to handle the case that multiple TX profiles (w/ SL DRX and w/o SL DRX) are mapped to a L2 id?

* SL DRX is supported only when all TX profiles support SL DRX (e.g. in R2-2204579)
* Agreed.

How to handle the case that no TX profile is mapped to a L2 id?

* No SL DRX is applied (e.g. in R2-2204863)
* Agreed.

Need of TX profile for a default SL DRX operation (e.g. for DCR)?

* Yes (e.g. in R2-2204863)
* No (e.g. in R2-2204953)
* For default SL DRX operation, SL DRX needs to be supported in the TX profile associated with service type(s)/L2 id which the UE is interested to receive. No need of special TX profile only for a default SL DRX operation.

[CATT]: Want to understand how it works if two TX profiles are configured for a given L2 id. [OPPO]: It is not an issue. Whether SL DRX is applied or not will be determined based on whether all TX profiles support SL DRX or not. If SL DRX is applied, a default SL DRX operates for DCR reception. [Qualcomm]: Not prefer AS layer generates default TX profile. [OPPO]: Within a DCR message, we have service id information. It means when a DCR message is sent, service id is already known. No need of differentiation with other cases. [IDT]: Agree with OPPO. [Session chair]: SL DRX on/off is included in TX profile, and default SL DRX operation is applied only when SL DRX is on in the TX profile for the service type/L2 id which the UE is interested to receive. In that sense, shouldn’t TX profile be required for a default SL DRX operation? [Ericsson, Huawei, OPPO, ZTE, IDT, Lenovo]: Agree with session chair [Lenovo]: Note that TX profile is for the service type/L2 id which the UE is interested to receive so we don’t need special TX profile only for a default SL DRX operation. [Qualcomm]: Is the Service Type/L2 ID based Tx Profile also appliable to DCR in unicast? As we concluded earlier that Tx Profile is needed for broadcast and groupcast to address the backward compatibility issue. [ZTE]: DCR message can be transmitted via BC/UC manner. When DCR message is transmitted via BC manner, it means this may be the first time TX UE try to connect with the RX  UE. In this case, a configured L2 ID (not the L2 ID of RX UE) will be used. And also in this case, TX UE does not know whether RX UE is R16 UE or R17 UE and whether RX UE supports SL DRX or not. Therefore, NAS layer should provide the tx profile for this "configured L2 ID" for DCR message. [Ericsson]: Not clear how it works. [Session chair]: Before the reception of initial DCR message and UE capability message, RX UE doesn’t know whether TX UE is Rel-16 or Rel-17 UE. Whether default SL DRX operation is applied or not to for initial DCR message is based on TX profile associated with service type RX UE is interested. [OPPO]: Agree with session chair [LG]: Default SL DRX configuration can be different per service type? [Session chair]: No, we’re discussing here how RX UE determines if default SL DRX operation is applied or not for initial DCR message reception. Once determines to apply default SL DRX operation for initial DCR message reception, common SL DRX configuration is applied regardless of what service type is (as RAN2 agreed before).

R2-2204579 Discussion on DRX left issues for configuration aspects OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2204639 Discussion on Tx profile implementation [O074] OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2204640 Correction on [O027, O028, O030, O031, O034-O046] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

R2-2204863 Discussion on TX profile for broadcast and groupcast Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2204953 Issues corresponding to TX Profile CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2205098 Discussion on Sidelink UE information ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205099 Discussion on SL DRX remaining issues for IE design ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205100 Discussion on TX profile issues for SL DRX ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205117 remaining issues related to the TX profile LG Electronics France discussion

R2-2205176 Configuration aspects of SL DRX Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2205183 Correction on RIL issue E042 Ericsson draftCR Rel-17 38.331 17.0.0 NR\_SL\_enh-Core

R2-2205184 Correction on RIL issue E046 Ericsson draftCR Rel-17 38.331 17.0.0 NR\_SL\_enh-Core

R2-2205185 Correction on RIL issue E047 Ericsson draftCR Rel-17 38.331 17.0.0 NR\_SL\_enh-Core

R2-2205316 [X209] Discussion on preconfigured GC/BC SL DRX usage Xiaomi discussion

R2-2205318 [X210] Discussion on GC/BC sidelink DRX operation in partial coverage Xiaomi discussion

R2-2205335 Reply LS to SA2 on Tx Profile LG Electronics France LS out Rel-17 To:SA2 Late

R2-2205537 Preferred DRX configuration Samsung discussion

R2-2205538 TX profile for GC/BC Samsung discussion

R2-2205620 [B200][B201][B202][B203]Some correction for SL DRX Configuration Lenovo discussion NR\_SL\_enh-Core

R2-2205642 [A914][A918][A919] Discussion on corrections of IUC Scheme 1 configurations in RRC Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2205643 [Draft] LS on RRC parameters for IUC Scheme 1 Apple LS out Rel-17 NR\_SL\_enh-Core To:RAN1

R2-2205644 [A904][A905][V380] Discussion on RRC configuration for power-saving resource pools Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2205707 Discussion on Configuration Aspects Qualcomm India Pvt Ltd discussion

R2-2206048 On corrections of TX UE reporting reject related to [H654] Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2205101 (draft)Reply LS to SA2 on Tx Profile ZTE Corporation, Sanechips LS out Rel-17 NR\_SL\_enh-Core To:SA2

R2-2205175 Discussion on SA2 LS (S2-2203595) Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2205262 Discussion on SA2 reply LS about TX profile associated with L2 ID(s) vivo discussion Rel-17

R2-2205265 Draft reply LS to SA2 on TX profile associated with L2 ID(s) vivo LS out Rel-17 To:SA2 Cc:CT1

R2-2206079 (draft)Reply LS to SA2 on Tx Profile ZTE Corporation, Sanechips LS out Rel-17 NR\_SL\_enh-Core

#### 6.15.2.3 User plane aspects

Including detailed behavior for timers/offsets, resource reselection, HARQ A/N when grant is dropped due to no RX-UE in activet time, etc.

Confirm the previous WAs?

* “If there is no SL grant in the SL DRX active time of the destination that has data to be sent, trigger resource reselection.”.
* “For mode-1 re-transmission grant, if the re-transmission grant is dropped due to no Rx-UE in active time, Tx-UE report NACK to network via PUCCH.”

Number of configured HARQ RTTs? (e.g. 2 timers in R2-2206138 (same timer value for timer#2 and timer#3), 3 timers in R2-2204579, 1 timer in R2-2205185 (timer#1 only))

* Timer#1: HARQ enabled w/ PSFCH
* Timer#2: HARQ disabled w/ PSFCH
* Timer#3: HARQ disabled w/o PSFCH

Calculation of sl-drx-SlotOffset (e.g. in R2-2205136)?

SL triggering for SL DRX command indication (e.g. in R2-2205136)?

Need of active time extension after the announced periodic resource (e.g. in R2-2205833)?

* [AT118-e][712][V2X/SL] User plane discussion (OPPO)

**Scope:** Discuss and conclude pre-selected issues for online discussion above.

**Intended outcome:** Discussion summary in R2-2206309. Email approval.

**Deadline:** 5/20 10:00am UTC

R2-2206309 Summary of [AT118-e][712][V2X/SL] User plane discussion (OPPO) OPPO discussion Rel-17 NR\_SL\_enh-Core

Proposal 1 Confirm the WA “if there is no SL grant in the SL DRX active time of the destination that has data to be sent, trigger resource reselection.”.

Proposal 2 Confirm the WA “For mode-1 re-transmission grant, if the re-transmission grant is dropped due to no Rx-UE in active time, Tx-UE report NACK to network via PUCCH.”.

Proposal 3a RAN2 is to agree on 2 configured RTT timers for the following 2 cases:

• RTT-timer1 for HARQ enabled case;

• RTT-timer2 for HARQ disabled and resource pool with PSFCH case;

Proposal 3b RAN2 to discuss RTT timer for pools without PSFCH in the next meeting, via e.g., 1) configured time length, 2) fixing it to 0 without a configured timer.

Proposal 4 sl-drx-SlotOffset is calculated as DST layer-2 ID modulo the number of slots in one subframe.

Proposal 5 RAN2 confirm SL DRX Command indication can trigger a Scheduling Request.

Proposal 5a RAN2 aims at down-selection of SR configuration for SL DRX Command MAC CE between the following 2 options in next meeting:

• Option 1: Reuse the SR configuration for SL logical channel, and which logical channel triggered a Scheduling Request for SL DRX command indication is up to UE implementation.

• Option 2: Reuse the SR configuration for CSI report.

Proposal 6 RAN2 not pursue extending the active time of SL DRX after the announced periodic transmission for pre-emption.

* All proposals above are agreed.
* [AT118-e][707][V2X/SL] MAC corrections (LG)

**Scope:** Discuss proposals/corrections in AI 6.15.2.3 (except the pre-selected issues for online discussion). Prepare a merged CR for the agreeable proposals/corrections.

**Intended outcome:** Summary discussion in R2-2206302 and 38.321 CR in R2-2206303. Email approval.

**Deadline:** 5/16 10:00am UTC

R2-2206302 [AT118-e][707][V2X/SL] MAC corrections (LG) LG (Rapporteur) discussion Rel-17 NR\_SL\_enh-Core

 Proposals

(4, 6) Proposal 1: RAN2 is to agree on the intention of the proposal 1 (“For resource re-selection of the pre-emption check in SL DRX, the time gap between the re-selected resource and the reported pre-empted resource is not larger than the duration of SL HARQ Retransmission timer.”) in the R2-2204552, FFS on the detailed shape of the change.

(13, 0) Proposal 2: RAN2 is to agree on proposal 3 (“Add the starting condition of drx-RetransmissionTimerSL upon expiry of drx-HARQ-RTT-TimerSL in case both PSFCH and PUCCH are not configured.”) in the R2-2204580.

(1, 12) Proposal 3: RAN2 is not to agree on proposal 1 (“TX UE should not multiplex between DRX SDU and non-DRX SDU associated with the same destination layer-2 ID.”) in the R2-2204782.

(4, 7) Proposal 4: RAN2 is not to agree on proposal 1 (“In SL groupcast, TX UE selects the resources for retransmission of a SL process within the assumed time when onduration timer, inactivity timer, or the retransmission timer of this SL process is running.”) in the R2-2204864.

(1, 12) Proposal 5: RAN2 is not to agree on proposal 2 (“To avoid the packet loss in RX UE caused by SL HARQ feedback disabled, if RX UE receives a SCI indicating HARQ feedback disabled, RX UE starts SL retransmission timer upon SL HARQ RTT timer expiry regardless of whether the data is decoded successfully or not.”) in the R2-2204864.

(1, 12) Proposal 6: RAN2 is not to agree on proposal 3 (“add a NOTE to specify the TX UE selects the resources for the initial transmission/retransmission associated with any active time (e.g. on duration timer or inactivity timer, or retransmission timer corresponding to received PSFCH) at the RX UE.”) in the R2-2204864.

(8, 5) Proposal 7: RAN2 should discuss whether to agree or disagree with proposal 2 (“Capture in MAC spec, when the PUCCH resource is configured, the start time of drx-HARQ-RTT-TimerSL for configured sidelink grant reuses that for dynamic sidelink grant.”) of R2-2204865.

(5, 7) Proposal 8: RAN2 discuss whether to agree or disagree with proposal 3 (“Capture in MAC spec, when the PUCCH resource is not configured, start the drx-HARQ-RTT-TimerSL for the corresponding HARQ process at the first symbol after end of PSSCH occasion for configured sidelink grant.”) in the R2-2204865.

(0, 13) Proposal 9: RAN2 is not to agree on proposal 3 (“It is suggested to re-use legacy UE behaviour and leave resource selection to UE implementation when SL DRX is configured.”) in the R2-2205105.

Proposal 10. RAN2 discuss whether to agree or disagree with proposal 3 (“The UE should start HARQ RTT timer for the corresponding HARQ process in the first symbol after the end of corresponding PUCCH resource when the PUCCH is not transmitted due to a measurement gap or a LBT failure.”) in the R2-2205136.

(0, 12) Proposal 11: RAN2 is not to agree on proposal 4 (“The UE should start drx-RetransmissionTimerSL in the first symbol after the expiry of drx-HARQ-RTT-TimerSL when the PUCCH is not transmitted due to a measurement gap or a LBT failure.”) in the R2-2205136.

(2, 11) Proposal 12: RAN2 is not to agree on proposal 5 (“The UE does not stop SL DRX timers (i.e. sl-drx-onDurationTimer, sl-drx-InactivityTimer, sl-drx-RetransmissionTimer, sl-drx-HARQ-RTT-Timer) when resetting the MAC entity.”) in the R2-2205136.

 CRs

(13, 0) Proposal 13: RAN2 is to agree on correction 1 (“In section 5.7, remove “and PSFCH is configured” to cover both the resource pool with and without PSFCH cases.”) in the R2-2204574.

(7, 5) Proposal 14: RAN2 is not to agree on correction 2 (“In section 5.22.1.1, remove the text “5> if selected resource for initial transmission occasion is not in the SL DRX Active time as specified in clause 5.28.1 of any destination that has data to be sent: 6> use retransmission occasion(s) for initial transmission of PSCCH and PSSCH.”;”) in the R2-2204574

(4, 8) Proposal 15: RAN2 is not to agree on correction 3 (“In section 5.22.1.3.1, remove the text “when PSCCH duration(s) and 2nd stage SCI on PSSCH of the previous sidelink grant is not in SL DRX Active time as specified in clause 5.x.1 of the destination that has data to be sent””) in the R2-2204574

(3, 10) Proposal 16: RAN2 is not to agree on correction 4 (“In section 5.22.1.3.1, remove the text “2> if all PSCCH duration(s) and PSSCH duration(s) for initial transmission …: 3> ignore the sidelink grant.” in 5.22.1.3.1.”) in the R2-2204574

(12, 0) Proposal 17. RAN2 is to agree on correction 5 (“In section 5.28.2, change “and” to “or””) in the R2-2204574.

(4, 7) Proposal 18: RAN2 is not to agree on correction 6 (“In section 5.28.2, remove the “if the HARQ feedback (i.e., negative acknowledgement) is not transmitted for unicast due to UL/SL prioritization” condition.”) in the R2-2204574.

(9, 1) Proposal 19: RAN2 discuss whether to agree or disagree with correction 7 (“In section 5.28.2, add the inactivity timer start condition when groupcast new data transmission happens.”) in the R2-2204574.

(6, 5) Proposal 20. RAN2 is not to agree on correction for relocating the down-selection of inactivity timer of groupcast in the R2-2204574.

(13, 0) Proposal 21. RAN2 is to agree on miscellaneous correction in the R2-2204575. Some modifications of “active time”-related section are modified to 5.28.3, not 5.28.x.

(7, 6) Proposal 22. RAN2 is not to agree on correction 1 (adding a NOTE: “For unicast, sl-drx-RetransmissionTimer is not started after expiry of sl-drx-HARQ-RTT-Timer when the PSFCH of ACK transmission is dropped.”) in the R2-2204781.

(13, 0) Proposal 23. RAN2 is to agree on correction 2 (“fixing the LSB bit error of Source Layer-2 ID”) in the R2-2204781.

(13, 0) Proposal 24. RAN2 is to agree on correction of section 5.22.1.2 (“Tx resource (re-)selection check”) in the R2-2204922.

(12, 0) Proposal 25. RAN2 is to agree on correction (i.e., “the destination” to “any destination”) of section 5.22.1.3.1 (“Sidelink HARQ Entity”) in the R2-2204922.

(3, 10) Proposal 26. RAN2 is not to agree on correction (“Move of SL DRX retransmission timer description”) in the R2-2204950.

(8, 5) Proposal 27. RAN2 is not to agree on correction (“Modify the destination index description in 6.1.3.33”) in the R2-2205107.

(2, 11) Proposal 28. RAN2 is not to agree on correction 1 (“added to Note 1 in clause 5.7: “If Sidelink resource allocation mode 1 is configured by RRR for a pre-Rel. 17 UE, a DRX functionality is not configured.””) of section 5.7 in the R2-2205180.

(1, 10) Proposal 29. RAN2 is not to agree on correction 2 (“In clause 5.28.2 the text “ of the destination UE selected” is removed in a couple of places.”) in the R2-2205180.

(9, 0) Proposal 30. RAN2 is to agree on correction 3 (“Clause 5.22.1.8 is removed.”) in the R2-2205180.

(7, 6) Proposal 31. RAN2 is not to agree on correction of section 5.7 in the R2-2205181.

(9, 2) Proposal 32. RAN2 is to agree on correction with some modification in the R2-2205622.

(12, 1) Proposal 33. RAN2 is to agree on the intention of the correction in the R2-2205910, FFS on the detailed shape of the change.

(8, 4) Proposal 34. RAN2 is not to agree on correction in the R2-2205912.

* All proposals above (proposal 1 – proposal 34) are agreed.

R2-2206303 Merged CRs on user plane aspects for SL DRX LG Electronics CR Rel-17 38.321 17.0.0 1294 - F NR\_SL\_enh-Core

* Endorsed and will be merged with further agreements made this meeting.

R2-2204552 Clarification on resource re-selection for pre-empted resource with SL DRX SHARP Corporation discussion NR\_SL\_enh-Core

R2-2204574 Correction on user plane aspects for SL DRX OPPO CR Rel-17 38.321 17.0.0 1221 - F NR\_SL\_enh-Core

R2-2204575 Miscellaneous correction on user plane aspects for SL DRX OPPO CR Rel-17 38.321 17.0.0 1222 - F NR\_SL\_enh-Core

R2-2204580 Discussion on DRX left issues for user plane aspect OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2204642 Correction on [O069, O096, O097] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

R2-2204779 Correction on user plane aspects for SL DRX (Rapporteur CR) LG Electronics France CR Rel-17 38.321 17.0.0 1235 - F NR\_SL\_enh-Core Late

R2-2204781 Correction on user plane aspects for SL DRX LG Electronics France CR Rel-17 38.321 17.0.0 1237 - F NR\_SL\_enh-Core

R2-2204782 Discussion on remaining issues for user plane aspect LG Electronics France discussion Rel-17 38.321

R2-2204864 Further consideration on SL DRX with TP for MAC spec corrections Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2204865 Clarification on Uu DRX for SL communication Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2204922 Miscellaneous correction on TS 38.321 for SL DRX Huawei, HiSilicon CR Rel-17 38.321 17.0.0 1242 - F NR\_SL\_enh-Core

R2-2204946 Combination of SL DRX, Discovery and relay-related Communication CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2204947 Discussion on the SL DRX Inactivity Timer Maintenance CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2204948 Correction on the SL DRX Inactivity Timer Maintenance CATT draftCR Rel-17 38.321 17.0.0 NR\_SL\_enh-Core

R2-2204949 Discussion on the SL DRX Retransmission Timer Maintenance CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2204950 Correction on the SL DRX Retransmission Timer Maintenance CATT draftCR Rel-17 38.321 17.0.0 NR\_SL\_enh-Core

R2-2204951 Miscellaneous corrections on SL DRX CATT draftCR Rel-17 38.321 17.0.0 NR\_SL\_enh-Core

R2-2205104 Correction on resource pool selection for IUC ZTE Corporation, Sanechips CR Rel-17 38.321 17.0.0 1252 - F NR\_SL\_enh-Core

R2-2205105 Discussion on user plane FFS issues for SL DRX ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205107 Correction on Destination ID index in SL BSR ZTE Corporation, Sanechips CR Rel-17 38.321 17.0.0 1253 - F NR\_SL\_enh-Core

R2-2205136 Discussion on SL MAC aspects ASUSTeK discussion Rel-17 38.321 NR\_SL\_enh-Core

R2-2205180 Corrections of 38.321 on TX resource selection Ericsson draftCR Rel-17 38.321 17.0.0 F NR\_SL\_enh-Core

R2-2205181 Corrections of 38.321 on SL grant reception Ericsson draftCR Rel-17 38.321 17.0.0 F NR\_SL\_enh-Core

R2-2205182 Corrections of 38.321 on IUC MAC CE Ericsson draftCR Rel-17 38.321 17.0.0 F NR\_SL\_enh-Core

R2-2205536 MAC open issues Samsung discussion

R2-2205622 Aligning Parameter names for UC GC and BC Lenovo CR Rel-17 38.321 17.0.0 1275 - F NR\_SL\_enh-Core

R2-2205833 Discussion on active time of SL DRX for the announced periodic transmissions Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

R2-2205910 Corrections on HARQ RTT Handling in MAC Specification InterDigital, Ericsson, Apple draftCR Rel-17 38.331 17.0.0 NR\_SL\_enh-Core

R2-2205911 Corrections on Inactivity Timer Resetting for Groupcast InterDigital draftCR Rel-17 38.331 17.0.0 NR\_SL\_enh-Core

R2-2205912 Corrections on Active Time Definition at the TX UE InterDigital draftCR Rel-17 38.331 17.0.0 NR\_SL\_enh-Core

R2-2204783 Discussion on remaining issues for user plane aspect LG Electronics France discussion Rel-17 38.321 Withdrawn

#### 6.15.2.4 Inter-UE Coordination

Including priority order between IUC REQ and IUC MAC CEs, need of timer-based latency bound restriction for condition-based IUC (including details if needed), timer value, maximum number of resource combinations that can be included in IUC INFO MAC CE, etc.

Confirm the previous WA “For explicit request based IUC procedure that UE-B sets timer value to UE-A through PC5 RRC signalling” ?

* Yes (e.g. in R2-2205177)
* No? (e.g. in R2-2205640)
* Confirm the working assumption “For explicit request based IUC procedure that UE-B sets timer value to UE-A through PC5 RRC signalling” as an agreement.

R2-2205640:

Proposal 2 For IUC INFO triggered by explicit request, set the value of sl-IUC-ReportTimer as the maximum of sl-LatencyBoundIUC-Report and “n+T1”.

[Session chair]: With this proposal, it is not against to confirm WA. [Apple]: We still can confirm WA. [Lenovo]: Share similar understanding with Apple. [Huawei, Ericsson, Vivo, Qualcomm]: There is no conflict between RAN1 and RAN2. In RAN1, there is no restriction that UE-A should perform sensing until the start of resource window in UE-B. [ZTE]: Supports confirmation of WA. [Ericsson]: We can also rely on UE-B’s smart implementation. [LG]: Proposal 2 seems quite RAN1 specific since it is related to resource selection window. It should be discussed in RAN1 first.

Priority order between IUC and IUC REQ?

* Same (e.g. in R2-2204923): Ericsson, Apple, IDT, Samsung, Nokia, Intel, Huawei, ZTE, CATT, Vivo, Qualcomm (11)
* IUC REQ is higher (e.g. in R2-2204784): LG (1)
* IUC is higher (e.g. in R2-2205708): Qualcomm, Xiaomi, Lenovo (3)
* Same priority between IUC and IUC REQ and leave it to UE implementation if both IUC and IUC REQ cannot be fit into the resource.

[Session chair]: Seems any option can work so would like to suggest to go towards majority companies’ views. [Ericsson]: Two messages are for the same purpose, so they should be handled with same priority. [Qualcomm]: Ok with Ericsson view, and we can leave it to UE implementation when two messages cannot fit into the resource.

Max number of resource combination in IUC?

* Fixed (e.g. in R2-2204581)
* Variable with L field (e.g. in R2-2205639)
* Variable with configuration (e.g. in R2-2205103)

R2-2205639:

Proposal 1 Remove the maximal number of resource combination “8” from MAC specification and the number of RC is upper bounded by the “L” field in MAC subheader.

Proposal 2 It is up to UE A implementation to decide whether and how to select a subset of RC(s) to be included in IUC INFO MAC CE

* Proposal 1 and proposal 2 are agreed.

[Session chair]: Main arguments for variable and fixed size

* Variable:
  + 8 RCs are not enough for IUC working well
  + Not easy to set fixed number of RCs in all cases.
  + With multiple MAC CEs, it may bring more spec impact (e.g. cancellation of remaining MAC CEs).
* Fixed:
  + Signalling overhead
  + Multiple MAC CEs can be generated if needed

[LG]: Agree that 8 RCs are not enough, but do not support variable size. UE can transmit multiple MAC CEs if needed. [ZTE]: Cons of variable with L field can be reduced by configured variable option. [OPPO, Lenovo]: Ok with variable with L field. Assume a smart UE implementation will not include too many RCs, otherwise too much resources are required for IUC transmission. [Ericsson, Lenovo]: Prefer not allowing multiple MAC CEs, which will make complicated, e.g. introduction of cancelling of remaining MAC CEs.

Need of specified timer-based latency handling for condition-based IUC?

* Yes (e.g. in R2-2204952): Lenovo, Ericsson, LG, IDT, CATT, Nokia (6)
* No (e.g. in R2-2204581): Huawei, OPPO, ZTE, Vivo, Samsung, Apple, Xiaomi, Qualcomm, NEC, Intel (10)
* No timer-based latency handling for condition-based IUC

[Ericsson, Lenovo, LG]: Do not see real difference between condition-based IUC and REQ-based IUC. [Session chair]: Suggest to go towards majority companies’ views.

IUC-based resource allocation and LCP (e.g. in R2-2204968)?

R2-2204968:

Proposal 4: Destination selection step within the LCP needs to consider the IUC information used for sensing/resource selection. For example, PHY of UE-B indicates to MAC layer, that IUC information from UE-A was taking into account during the sensing/resource selection procedure. Correspondingly MAC would set the destination to the destination ID of UE-A while performing the LCP procedure.

* We can revisit it next meeting.

[Session chair]: Does it propose a kind of LCP restriction considering IUC information (e.g. as part of destination id selection)? [Lenovo]: Could be a one way, but it’s also possible simply to have guideline (e.g. note). [OPPO, ZTE, LG, Qualcomm]: Seems the issue is valid, but not support LCP impact. It will make the current LCP procedure complicated. LCP is key aspect of QoS handling in MAC, so we should be very careful. Instead, we can reuse similar solution as what decided for SL DRX. [ZTE]: We should ask RAN1 to revert back their agreement, otherwise ok with OPPO’s suggestion. [Ericsson]: If MAC indicates IUC information for UE-A, UE-B should have data for UE-A. LCP modification may not be so complicated. [Apple]: It was discussed in [706] email discussion and no conclusion was made. The best way this meeting would be either to follow OPPO’s suggestion or to have more time. [Session chair]: It will be good to see TP/CR for proposed option to help people to see what the specification impacts.

* [AT118-e][708][V2X/SL] Inter-UE coordination (Apple)

**Scope:** 1st round: Discuss proposals/corrections in AI 6.15.2.4 (except the pre-selected issues for online discussion). => 2nd round: Discuss residual issues from the 1st round discussion and prepare LS (if needed)

**Intended outcome:** 1st round: Discussion summary in R2-2206304. Email approval. => 2nd round: Discussion summary in R2-2206313 and LS in R2-2206314. Email approval.

**Deadline:** 1st round: 5/16 10:00am UTC => 2nd round: 5/20 10:00am UTC

R2-2206304 Summary of [AT118-e][708][V2X/SL] Inter-UE coordination (Apple) Apple discussion Rel-17 NR\_SL\_enh-Core

[Easy Proposals for discussion papers]:

Proposal 1[14/17]: When UE-B receives multiple IUC-info from UE A, UE B’s behaviour is based on RAN1 agreements.

Proposal 3 [15/16]: For Scheme 1, when UE-A determines the resources for IUC transmission upon explicit request from UE-B, it shall select the resources according to the latency requirement of the IUC transmission

Proposal 5 (16/18): For IUC scheme-1, for non-preferred resource set, MAC indicates the non-preferred resource set (as carried in MAC CE) to PHY layer (except the no-sensing results case).

Proposal 7 (15/17): standalone SL DRX Command MAC CE or SL Inter-UE Coordination Request MAC CE or SL Inter-UE Coordination Information MAC CE can trigger to create a selected SL grant.

Proposal 8(18/18): Tx resource pool selection shall take the transmission of request MAC CE/IUC MAC CE into consideration. FFS to implement this as normative text or NOTE in the MAC spec.

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

[Easy proposals from CRs]

Proposal 11: For R2-2205137, 1st change is agreed. Second change is modified to use “This field is ignored if the value of sl-DetermineResourceType is set to "uea" “ in the last sentence.

Proposal 12: MAC CR R2-2205604 can be agreed.

Proposal 13: Agree with the intention of first change in R2-2205881. FFS detailed wording.

Proposal 14: Agree with the change for issue 4 and the first change “and->or” in issue 7 in R2-2205182.

* Proposal 11, 12, 13 and 14 are agreed.

[To be discussed proposals]:

Proposal 2[10/17]: RAN2 can wait for RAN1 further discussion on the support of GC/BC in IUC.

Proposal 4 [10/16]: For Scheme 1, RAN2 agree RAN2 agree the intention of first change of R2-2205182 as baseline to address “if no IUC-info received, UE-B shall follow the legacy behavior” scenario, but w/o mixing with DRX configuration. FFS detailed wording.

Proposal 6 (11/17): Send a LS to RAN1 to check whether to support the non-preferred resource set w/o sensing results case in Scheme 1 or not. If yes, whether the exclusion is done in PHY or MAC specification.

Proposal 9(12/16): It is up to PHY layer of UE B to ensure IUC scheme 2 occurs in the right resource pool . FFS a LS to RAN1 is needed to confirm this.

Proposal 10: To further discuss how to handle the issue that destination selection procedure in LCP cannot guarantee the support of RAN1 agreement of “IUC-info from a particular UE A only to be used for select resource for traffic to that UE A.”.

R2-2206313 Phase 2 Summary of [AT118-e][708][V2X/SL] Inter-UE coordination (Apple) Apple discussion Rel-17 NR\_SL\_enh-Core

Proposal 2[Easy]: RAN2 can wait for RAN1 further discussion on the support of GC/BC in IUC.

Proposal 4 (revised)[Easy]: To address “if no IUC-info received, UE-B shall follow the legacy behavior” scenario, adopt the first change of R2-2205182, but place the text under a separate branch to de-couple with SL-DRX.

Proposal 6[Easy]: Send a LS to RAN1 to check whether to support the non-preferred resource set w/o sensing results case in Scheme 1 or not. If yes, whether the exclusion is done in PHY or MAC specification.

* All proposals above are agreed.

R2-2206314 LS on IUC with non-preferred resource set LS out Rel-17 NR\_SL\_enh-Core To:RAN1

* Approved.

R2-2204553 Remaining issues on resource selection for Inter-UE coordination SHARP Corporation discussion NR\_SL\_enh-Core

R2-2204576 Correction on user plane aspects for inter-UE coordination OPPO CR Rel-17 38.321 17.0.0 1223 - F NR\_SL\_enh-Core

R2-2204581 Discussion on left issue of inter-UE coordination OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2204780 Correction on user plane aspects for Inter-UE Coordination (Rapporteur CR) LG Electronics France CR Rel-17 38.321 17.0.0 1236 - F NR\_SL\_enh-Core Late

R2-2204784 Discussion on remaining issues for Inter-UE Coordination LG Electronics France discussion Rel-17 38.321

R2-2204923 Remaining issues on inter-UE coordination MAC CE Huawei, HiSilicon discussion NR\_SL\_enh-Core

R2-2204924 Discussion on latency bound for inter-UE coordination Huawei, HiSilicon discussion NR\_SL\_enh-Core

R2-2204952 Open Issues of Inter-UE Coordination CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2204968 Remaining issues on inter-UE coordination Lenovo discussion Rel-17

R2-2205103 Discussion on inter-UE coordination ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2205137 Correction on inter-UE coordination ASUSTeK CR Rel-17 38.321 17.0.0 1258 - F NR\_SL\_enh-Core

R2-2205141 Discussion on need of timer-based latency bound restriction for condition-based scenario NEC Corporation discussion Rel-17

R2-2205177 Remaing issues of inter-UE coordination Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2205344 Further Issues on Collision Avoidance of IUC messages Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_enh-Core

R2-2205366 Validity of IUCInformation Messages Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_enh-Core

R2-2205535 IUC open issues Samsung discussion

R2-2205604 Correction on SL grant selection procedure for inter UE coordination Samsung CR Rel-17 38.321 17.0.0 1274 - F NR\_SL\_enh-Core

R2-2205639 Discussion on limit of resource combinations in IUC-info MAC CE Apple, Ericsson, InterDigital, vivo discussion Rel-17 NR\_SL\_enh-Core

R2-2205641 Lack of priority information for preferred resource set in IUC INFO Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2205703 Multiple MAC CE handling and remaining PDB related to inter-UE coordination vivo discussion Rel-17

R2-2205708 Discussion on Inter-UE Coordination Qualcomm India Pvt Ltd discussion

R2-2205791 Open issues for Inter-UE coordination Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2205881 Enabling unsolicited transmission of IUC Nokia, Nokia Shanghai Bell draftCR Rel-17 38.321 17.0.0 NR\_SL\_enh-Core

#### 6.15.2.5 Power-saving resource allocation

Including details of resource pool and partial-sensing based resource allocation/random selection.

Power-saving resource allocation can be applied to SL discovery?

* Yes (e.g. in R2-2204565)

R2-2204565:

Proposal 1: RAN2 confirms that power-saving resource allocation schemes apply to NR SL discovery transmission at least for the shared discovery TX pool case.

Proposal 2: RAN2 confirms that power-saving resource allocation schemes apply to NR SL discovery transmission in the dedicated discovery TX pool(s).

* Agree with proposal 1.
* Working assumption: power-saving resource allocation schemes apply to NR SL discovery transmission in the dedicated discovery TX pool(s)

[Huawei]: Ok with proposal 1 and nothing needs to be changed. But for proposal 2, the agreement was for dedicated resource for SL discovery, it should follow Rel-16 resource allocation, which means it excludes power-saving resource allocation. [OPPO]: Do not understand Huawei’s argument for the second proposal. [Huawei]: it is based on the explicit agreement in the session note. [Vivo]: There was a kind of agreement in SL relay session sometimes ago, but it was because power-saving resource allocation was not considered at the moment. Do not see real differentiation between shared pool and dedicated resource pool. [IDT]: Is there any specification impact for proposal 2? [Vivo]: No real specification impact, but we need to consider it in CR implementation to capture the current RAN2 agreements. [Apple]: Supports the proposals. [Session chair]: Seems companies are at least ok with proposal 1 and some concern is expressed only for proposal 2. Let’s check how many companies have concern for proposal 2.

* Agree with proposal 2: ZTE, OPPO, Apple, Vivo, Samsung, LG (6)
* Disagree with proposal 2: Huawei (1)

[Huawei]: Note it may also impact RAN1. Not convinced for specification impact. Also not many companies support the proposal 2. [OPPO]: In RAN1, power-saving resource allocation is applied regardless of what content is transmitted. No RAN1 impact and no blocking issue to stop it. [Huawei]: Still has concern to make a decision now. [Session chair]: What about setting WA now? [Huawei, Vivo, OPPO]: Ok with WA.

R2-2204566 [V351] On corrections to NR SL communication procedure using exceptional pool vivo discussion

R2-2204567 [V350] Corrections on NR SL communication transmission procedures in mode-2 normal pools vivo discussion

R2-2204565 [V380] Discussion on the applicability of power-saving resource allocation to NR SL discovery vivo discussion R2-2204323

R2-2204577 [O092] Correction on default CBR configuration OPPO CR Rel-17 38.331 17.0.0 2975 - F NR\_SL\_enh-Core

R2-2204582 [O092] Discussion on default CBR measurement value OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2204641 Correction on [O066, O067] OPPO draftCR Rel-17 38.331 17.0.0 F NR\_SL\_enh-Core

R2-2205102 correction on exceptional resource pool for power saving ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3048 - F NR\_SL\_enh-Core

R2-2205142 Correction on user plane aspects for power saving (Rapporteur CR) LG Electronics France CR Rel-17 38.321 17.0.0 1260 - F NR\_SL\_enh-Core Late

=> Withdrawn

R2-2204568 [O092] Clarification on the CBR related default parameters vivo discussion Withdrawn

### 6.15.3 Other

Including any other corrections.

Whether SL DRX can be applied to L2 relay (including L2 relay discovery) ?

* Yes (e.g. in R2-2204588)
* No (e.g. in R2-2205179)
* [AT118-e][709][V2X/SL] SL DRX and L2 relay in Rel-17 (Ericsson)

**Scope:** Discuss whether there are real technical blocking issues that cannot apply SL DRX into L2 relay. Companies not supporting SL DRX should identify the technical blocking issues and companies supporting SL DRX can argue why they’re not real technical blocking issues (or if they can be easily solved by CR implementation). Based on each side arguments and analysis, check companies’ views whether there is real technical blocking issue or not.

**Intended outcome:** Summary discussion in R2-2206305.

**Deadline:** 5/16 10:00am UTC

[OPPO, ZTE]: Prefer some neutral company to lead this email discussion. [Ericsson]: Cannot accept any change of offline discussion rapporteur. Declare Ericsson will do this job very well in fair. [Ericsson]: There would be some more related contributions in relay session. [Session chair]: Let me know by email to determine whether it will be added into this session or not. [MediaTek]: This email discussion would be for Rel-17 or Rel-18? [Session chair]: Only for Rel-17.

R2-2206305 Summary of [709][V2X/SL] SL DRX and L2 relay in Rel-17 (Ericsson) Ericsson discussion Rel-17 NR\_SL\_enh-Core

Proposal 1 RAN2 to discuss how to support SL DRX for RRC signalling after the PC5 link established during RRC connection establishment for remote UE (9/15).

[Ericsson, IDT, CATT, Vivo, Qualcomm, Xiaomi]: May have delay issue with the current spec. [OPPO, MediaTek, Apple, Huawei, LG, ZTE, Intel, Vivo, Samsung, Nokia]: Considering SL-DRX setting for UC list does not differentiate between radio bearer(s) / RLC-channels (as in legacy Uu), SL DRX can work w/o new additional mechanism.

Proposal 2 RAN2 to discuss whether it is sufficient that L2 U2N Relay UE configures SL DRX in mode 2 RA only using assistance information from remote UE and the PDB split information from gNB.(9/15)

[Ericsson, IDT, CATT, Vivo, Qualcomm, Xiaomi]: May not have appropriate SL DRX configuration without DL traffic pattern information. [OPPO, MediaTek, Apple, Huawei, LG, ZTE, Intel, Vivo, Samsung, Nokia]: Considering relay UE’s awareness of PDB split and assistance information from remote UE, SL DRX can work w/o new additional mechanism. Not knowing DL traffic pattern is not a blocker for SL DRX with L2 relay.

Proposal 3 RAN2 to discuss whether it is sufficient that L2 U2N Relay UE derives the suitable SL-DRX setting for paging/SI forwarding for Remote UE only based on agreed R17 mechanisms (9/15).

[Ericsson, IDT, CATT, Vivo, Xiaomi]: May not have appropriate SL DRX configuration aligning paging cycle, SL DRX cycle and/or Uu DRX cycle. [OPPO, MediaTek, Apple, Huawei, LG, ZTE, Intel, Vivo, Samsung, Nokia, Qualcomm]: Considering SL-DRX setting for UC list does not differentiate between radio bearer(s) / RLC-channels (as in legacy Uu), SL DRX can work w/o new additional mechanism. Relay UE also can take the received paging cycle information from remote UE into account SL DRX configuration.

Proposal 4 RAN2 to discuss whether the Rel-17 SL DRX applies to L2 U2N Relay.

* R2 discussed whether there is any technical blocking issue for supporting SL-DRX for L2 relay and observed that majority companies (11/17) agree it is feasible to support it and some companies (7/17) disagree it is feasible due to some performance degradation (e.g. delay).

[Ericsson]: RRC messages during RRC connection establishment does not have QoS. How to handle RRC messages w/o QoS is not clear. [OPPO, LG, Apple]: All arguments from opposite side are more about performance aspect, it’s not really about if it’s feasible or not for SL DRX with L2 relay. We should focus the discussion and conclude if SL DRX with L2 relay is feasible w/o breaking the system, which is decoupled with performance level. [LG]: Opposite side often mentions about the delay concern. Is the delay for RRC message transmission or until the optimized SL DRX configuration? We don’t really see the problem if the delay is for RRC message transmission. TX UE can set very conservative SL DRX configuration to reduce the delay (if the delay concern is valid). [OPPO, Apple]: In relay session, it is agreed that a network assigns PDB split and priority for each logical channel so they would be sufficient for QoS enforcement. [Ericsson]: RRC connection setup REQ is before the reception of them from the network. [Vivo]: Based on the current circumstance, it would be difficult to conclude if SL DRX with L2 relay is supported or not in Rel-17. However, it will be good at least to state exact RAN2 status. [Session chair]: Seems two options in the table. One option is to go towards majority companies’ views and another option is to capture exact RAN2 status if the first option is never acceptable to the opposite side. With the second option, the final decision is up to RAN. [ZTE]: Prefer to make a conclusion now based on majority companies’ view. [IDT]: Agree with Vivo. Let’s capture exact RAN2 status and ok to leave the final conclusion to RAN. [Lenovo]: Didn’t provide inputs during the email discussion, but now support that SL DRX with L2 relay is feasible. [Session chair]: Let’s double check if companies change mind after understanding key arguments from each side.

* Feasible (w/ some performance degradation): Nokia, MediaTek, Huawei, OPPO, Lenovo, LGE, Samsung, ZTE, Apple, Intel, Vivo (11)
* Not feasible: Ericsson, CATT, Qualcomm, Xiaomi, IDT, NEC, Vivo (7)

[Session chair]: How to implement the spec for SL-DRX agreements in the relation to relay operation? [OPPO]: For example, CR in R2-2206047.

* Option 1: The agreements are captured only for L3 relay
  + None
* Option 2: The agreements are captured in general not to exclude L2 relay
  + OPPO, MediaTek, Huawei, LG, Lenovo, ZTE, Apple, Intel (8)
* Option 3: The agreements are captured with no relation to any relay
  + Ericsson, Vivo, CATT, Nokia, IDT, Xiaomi, Qualcomm, NEC (8)
* Option 4: Do nothing now and wait for RAN conclusion
  + OPPO, Samsung, Apple, IDT, Nokia, LG, Ericsson, Xiaomi, Qualcomm, Lenovo (10)

[Ericsson]: It was agreed there would be no additional specification impact even for L3 relay, option 3 should be considered. [Vivo]: Prefer option 3 like. We can simply specify whether L2 and/or L3 relay is supported with SL DRX in stage 2 spec, but no detailed differentiation in stage 3. [IDT]: Agree with Vivo. [OPPO]: Without stage 3 spec, we don’t think SL DRX even for L3 relay can work. We need to specify detailed UE behaviours in stage 3 spec. We can wait for RAN conclusion and revisit it once decided in RAN. [Ericsson, Vivo]: Agree to wait for RAN conclusion. We don’t need to make a decision for any related CR now considering this situation. If companies really want to push a related CR in this situation, they should submit it to RAN as company CR. [Huawei]: Can we agree with signalling (e.g. proposed signalling in R2-2206047) with adding it is only applicable for L3 relay in the field description now, and dependent on RAN conclusion we can simply add L2 relay in the field description later. [Qualcomm, Ericsson, Samsung, CATT]: Difficult to agree with signalling now.

* RAN2 cannot reach consensus on whether to agree the CR for the relation between SL DRX and SL relay. Related CRs will be revisited once RAN conclusion is made.

R2-2204588 Discussion on Sidelink DRX for Sidelink Relay MediaTek Inc., APPLE, OPPO discussion Rel-17 NR\_SL\_relay-Core

R2-2204673 Discussion on the need of capability filter OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2205179 Issues of SL DRX for L2 U2N relay Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2205269 Corrections on the Sidelink DRX NEC Corporation CR Rel-17 38.300 17.0.0 0457 - F NR\_SL\_enh-Core

R2-2205272 Way forward for Sidelink DRX configuration report for Relay purpose MediaTek Inc. discussion Rel-17 NR\_SL\_relay-Core Late

R2-2206047 Correction on SL DRX configuration for SL Relay MediaTek Inc., Huawei, ZTE, OPPO draftCR Rel-17 38.331 17.0.0 NR\_SL\_relay-Core