3GPP TSG-RAN WG2 Meeting #117 electronic R2-220xxxx
Online, Febuary 21 – March 3, 2022

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**

**[AT] Email discussion**

## Approved outgoing LSs

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

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

## 6.2 NR V2X

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

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

Tdoc Limitation: See tdoc limitation for Agenda Item 6

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

### 6.2.1 General and Stage-2 corrections

Including incoming LSs, rapporteur inputs, etc.

R2-2202147 LS on Signalling of PC2 V2X intra-band concurrent operation (R4-2119992; contact: Xiaomi) RAN4 LS in Rel-16 To:RAN2

R2-2202148 LS on PEMAX for NR-V2X (R4-2120047; contact: Huawei, CATT) RAN4 LS in Rel-16 To:RAN1, RAN2

R2-2202196 Discussion on RAN4 LS on power class capability (R4-2119992) OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2202197 Introduction of NR V2X power class OPPO CR Rel-16 38.306 16.7.0 0673 - B 5G\_V2X\_NRSL-Core

R2-2202198 Introduction of NR V2X power class OPPO CR Rel-16 38.331 16.7.0 2876 - B 5G\_V2X\_NRSL-Core

R2-2202199 Discussion on RAN4 LS on P\_EMAX (R4-2120047) OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2202470 Draft reply LS on PEMAX for NR-V2X Qualcomm Finland RFFE Oy LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN4

R2-2202715 Draft reply LS on Pemax for NR-V2X Huawei, HiSilicon, CATT LS out Rel-16 5G\_V2X\_NRSL-Core To:RAN4 Cc:RAN1

R2-2202837 Draft Reply LS on new power class capability for NR-V2X Xiaomi LS out To:RAN4

R2-2202838 Introduction of sidelink power class capability Xiaomi, Ericsson CR Rel-16 38.331 16.7.0 2912 - B 5G\_V2X\_NRSL-Core

R2-2202839 Introduction of sidelink power class capability Xiaomi, Ericsson CR Rel-16 38.306 16.7.0 0688 - B 5G\_V2X\_NRSL-Core

R2-2203146 Discussion on RAN4 LS on new power class capability for NR-V2X Xiaomi discussion

R2-2203173 Draft reply LS on PEMAX for NR-V2X vivo LS out Rel-16 To:RAN4 Cc:RAN1

R2-2203175 PEMAX for NR-V2X vivo discussion Rel-16

### 6.2.2 Control plane corrections

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

R2-2202723 Summary of RRC corrections Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core Late

R2-2202714 Miscelleneous CR on 38.331 Huawei, HiSilicon CR Rel-16 38.331 16.7.0 2903 - F 5G\_V2X\_NRSL-Core

R2-2203290 Discussion on HARQ attribute of SL SRB ZTE Corporation, Sanechips,vivo discussion Rel-16

R2-2203286 Correction on HARQ attribute of SL SRB option1 ZTE Corporation, Sanechips, OPPO CR Rel-16 38.331 16.7.0 2935 - F 5G\_V2X\_NRSL-Core

R2-2203287 Correction on HARQ attribute of SL SRB option2b ZTE Corporation, Sanechips,vivo CR Rel-16 38.331 16.7.0 2936 - F 5G\_V2X\_NRSL-Core

R2-2203288 Correction on HARQ attribute of SL SRB option2a ZTE Corporation, Sanechips CR Rel-16 38.321 16.7.0 1213 - F 5G\_V2X\_NRSL-Core

R2-2203289 Corrections on TS 38.304 ZTE Corporation, Sanechips CR Rel-16 38.304 16.7.0 0231 - F 5G\_V2X\_NRSL-Core

* [AT117-e][707][V2X/SL] Control plane corrections (Huawei)

 **Scope:** Discuss whether the proposed change in R2-2202714, R2-2203290, R2-2203286, R2-2203287, R2-2203288 and R2-2203289 are acceptable or not (including which proposed change is most acceptable to the companies if there are multiple candidate changes) and merge all acceptable changes.

 **Intended outcome:** Agree 38.331 rapporteur CR in R2-2203680 and individual 38.304 CR. Discussion summary in R2-2203681. Email approval.

**Deadline:** 2/28 13:00 UTC for discussion, 3/1 09:00 UTC for rapporteur’s CR and summary.

R2-2203174 Clarification on SL power control parameter vivo CR Rel-16 38.331 16.7.0 2932 - F 5G\_V2X\_NRSL-Core

### 6.2.3 User plane corrections

Including [Post116-e][710][V2X/SL]. This agenda item may utilize a summary document on MAC (LG).

R2-2202361 Summary [POST116-e][710][V2X/SL] PDCP/RLC Entity Maintenance for SL-SRBs (CATT) CATT report Rel-16 5G\_V2X\_NRSL-Core

R2-2202362 Corrections on MAC filtering issue for the first unicast PC5-S signalling CATT draftCR Rel-16 38.321 16.7.0 F 5G\_V2X\_NRSL-Core

R2-2202363 Corrections on RLC entity establishment issue for the first unicast PC5-S signalling CATT draftCR Rel-16 38.322 16.2.0 F 5G\_V2X\_NRSL-Core

R2-2202364 Corrections on PDCP entity establishment issue for the first unicast PC5-S signalling CATT draftCR Rel-16 38.323 16.6.0 F 5G\_V2X\_NRSL-Core

R2-2202956 Summary of MAC corrections LG Electronics France discussion 5G\_V2X\_NRSL-Core Late

R2-2202360 Corrections on Unexpected SL-BSR Trigger for SL-CSI MAC CE CATT CR Rel-16 38.321 16.7.0 1189 - F 5G\_V2X\_NRSL-Core

R2-2202534 Correction on the PDB derivation from LCH priority Apple, OPPO CR Rel-16 38.321 16.7.0 1193 - F 5G\_V2X\_NRSL-Core

R2-2202843 Correction on SL HARQ feedback indicator ASUSTeK CR Rel-17 38.321 16.7.0 1202 - F 5G\_V2X\_NRSL-Core

R2-2202947 Rapporteur CR on 38.321 LG Electronics France (Rapporteur) CR Rel-16 38.321 16.7.0 1205 - F NR\_SL\_enh-Core Late

R2-2202949 Correction of RV indication Samsung CR Rel-16 38.321 16.7.0 1207 - F 5G\_V2X\_NRSL-Core

R2-2203451 Correction on NACK reporting on PUCCH for NR SL Huawei, HiSilicon, OPPO CR Rel-16 38.321 16.7.0 1217 - F 5G\_V2X\_NRSL-Core

R2-2203479 Correction on NACK reporting on PUCCH for NR SL Huawei, HiSilicon, OPPO CR Rel-16 38.321 16.7.0 1218 - F 5G\_V2X\_NRSL-Core

R2-2202211 Clarification on SDU type field usage for SL-SRB Samsung, Apple CR Rel-16 38.323 16.6.0 0084 - F 5G\_V2X\_NRSL-Core

* [AT117-e][708][V2X/SL] User plane corrections (LG)

 **Scope:** Discuss whether the proposed change in R2-2202360, R2-2202534, R2-2202843, R2-2202947, R2-2202949, R2-2203479/R2-2203451, and R2-2202211 are acceptable or not (including which proposed change is most acceptable to the companies if there are multiple candidate changes), identify which changes can be merged into rapporteur CR (e.g. simple clarification, small error corrections, etc.) and merge them.

 **Intended outcome:** Agree 38.321 rapporteur CR in R2-2203682 and individual MAC/PDCP CR. Discussion summary in R2-2203683. Email approval.

**Deadline:** 2/28 13:00 UTC for discussion, 3/1 09:00 UTC for rapporteur’s CR and summary.

R2-2202193 Correction on UL-SL prioritization\_option1 OPPO CR Rel-16 38.321 16.7.0 1187 - F 5G\_V2X\_NRSL-Core

R2-2202299 Correction on UL-SL prioritization\_option2 OPPO CR Rel-16 38.321 16.7.0 1188 - F 5G\_V2X\_NRSL-Core

R2-2202716 Clarification on the UL and NR SL prioritization Huawei, HiSilicon, Lenovo, Motorola Mobility CR Rel-16 38.321 16.7.0 1201 - F 5G\_V2X\_NRSL-Core

## 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

### 8.15.1 Organizational

Including incoming LSs, rapporteur inputs (e.g. running CR and/or open issues that were not covered by [POST] email discussion and need to be addressed), etc.

R2-2202478 Introduction of eSL in TS.38300 InterDigital (Rapporteur) CR Rel-17 38.300 16.8.0 0405 - B NR\_SL\_enh

* [POST117-e][701][V2X/SL] 38.300 CR (InterDigital)

 **Scope:** Capture 38.300 related agreements (including this RAN2 meeting)

 **Intended outcome:** Agree 38.300 CR in R2-2203671 (by email approval)

**Deadline:** Short email discussion

R2-2202712 RRC running CR for NR Sidelink enhancements Huawei, HiSilicon CR Rel-17 38.331 16.7.0 2902 - F NR\_SL\_enh-Core Late

* [POST117-e][702][V2X/SL] 38.331 CR (Huawei)

 **Scope:** Capture 38.331 related agreements (including this RAN2 meeting)

 **Intended outcome:** Agree 38.331 CR in R2-2203672 (by email approval)

**Deadline:** Short email discussion

R2-2202948 Running CR of TS 38.321 for Sidelink enhancement LG Electronics France CR Rel-17 38.321 16.7.0 1206 - F NR\_SL\_enh-Core Late

* [POST117-e][703][V2X/SL] 38.321 CR (LG)

 **Scope:** Capture 38.321 related agreements (including this RAN2 meeting)

 **Intended outcome:** Agree 38.321 CR in R2-2203673 (by email approval)

**Deadline:** Short email discussion

R2-2203674 Introduction of NR Sidelink enhancements ZTE Corporation, Sanechips CR Rel-17 38.304 16.7.0 ???? - B NR\_SL\_enh-Core

* [POST117-e][704][V2X/SL] 38.304 CR (ZTE)

 **Scope:** Capture 38.304 related agreements (including this RAN2 meeting)

 **Intended outcome:** Agree 38.304 CR in R2-2203674 (by email approval)

**Deadline:** Short email discussion

R2-2202204 Introduction of sidelink DRX capability OPPO CR Rel-17 38.331 16.7.0 2877 - B NR\_SL\_enh-Core Late

R2-2202205 Introduction of sidelink DRX capability OPPO CR Rel-17 38.306 16.7.0 0674 - B NR\_SL\_enh-Core Late

R2-2202391 Introduction of sidelink DRX capability OPPO CR Rel-17 36.331 16.7.0 4758 - B NR\_SL\_enh-Core Late

* [AT117-e][705][V2X/SL] Introduction of NR sidelink enhancement capability (OPPO)

 **Scope:** Capture UE capability related agreements (including this RAN2 meeting)

 **Intended outcome:** Endorse 38.331 CR in R2-2203675, 38.306 CR in R2-2203676, and 36.331 CR in R2-2203677. Email approval.

**Deadline:** 3/3 10:00 UTC

R2-2202474 Rapporteur Inputs on Stage 2 Open Issues InterDigital (Rapporteur) discussion Rel-17 NR\_SL\_enh-Core

### 8.15.2 SL DRX

Including [POST116bis-e][705].

R2-2202203 Summary of [POST116bis-e][705][V2X/SL] Open issues on SL DRX (OPPO) OPPO report Rel-17 NR\_SL\_enh-Core Late

Unanimous

Recommendation 2.1.1-1 [15/15]: The default SL DRX configuration for BC/GC [(including at least DRX cycle, start offset and on-duration timer)] can be used for both BC-based and UC-based DCR message.

Recommendation 2.1.2-1a [17/17]: RAN2 needs to handle different scenarios where gNB supports or not supports SL DRX.

Recommendation 2.1.2-2a [17/17]: For gNB supporting SL-DRX, Tx-UE report assistance information only in mode-1.

Recommendation 2.1.2-2d [16/16]: For gNB not supporting SL-DRX, Tx-UE does not report assistance information or DRX configuration reject information, and Rx-UE does not report DRX configuration information for UC or QoS information for GC/BC.

Recommendation 2.1.2-3a [16/16]: For DRX configuration report by Rx-UE, Include DRX parameter(s) of 1) SL DRX cycle length, 2) SL DRX start offset, and 3) SL DRX on-duration timer length.

Recommendation 2.3.2-1: For mode-1 DG [14/14] and mode-2 grant [13/13], if the initial transmission occasion was dropped due to no Rx-UE in DRX active time, TX-UE can use re-transmission occasion for initial transmission.

* All recommendations 2.1.1-1, 2.1.2-1a, 2.1.2-2a, 2.1.2-2d, 2.1.2-3a, and 2.3.2-1 are agreed.

>90% Supporting Ratio (= only 1 objection)

Recommendation 2.1.2-1b [16/17]: gNB notify supporting SL-DRX based on the presence of SL-DRX configuration for GC/BC in SIB12.

Recommendation 2.3.1-2c [16/17]: For resource pool without PSFCH, sl-drx-HARQ-RTT-Timer starts in the slot following the end of PSSCH transmission (i.e., currently received PSSCH).

Recommendation 2.3.1-5 [6/7]: the conclusion for “sl-PUCCH-Config is not configured” also applied to “sl-PUCCH-Config is configured but PUCCH resource is not scheduled”

Recommendation 2.3.4-2 [15/16]: For Uu-DRX for SL operation, define it as conditionally mandatory per-UE capability, with capability bits in Uu-RRC, with neither FR1-FR2 nor FDD-TDD differentiation.

* All recommendations 2.1.2-1b, 2.3.1-2c, 2.3.1-5, and 2.3.4-2 are agreed.

For recommendation 2.1.2-1b:

[Vivo]: Should we consider the case where the gNB only supports SL DRX for UC? [OPPO, Xiaomi, Ericsson, Nokia, Qualcomm]: It is assumed the gNB needs to support all cast types if supports SL DRX. [Ericsson]: For the UE capability discussion, majority companies supported single capability bit for all cast types. Considering the UE capability discussion, it is reasonable the gNB supports all cast types if supports SL DRX.

> 80% Supporting Ratio (= only 2/3 objections)

Recommendation 2.1.2-2b [16/18]: For gNB supporting SL-DRX, Tx-UE report DRX configuration reject information only in mode-1.

* Agreed.

Recommendation 2.2-2 [14/16]: As in LTE, the mapping from Destination L2 ID to Tx Profile is configured in the gNB, i.e., no need for UE to report the mapping.

* 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).

[Huawei]: For GC, group id is created randomly by the UE when group is established so it is not clear how the gNB can have the mapping information between L2 id and TX profile. For BC, the recommendation is ok. [OPPO]: For GC, group id can be provided by the upper layer or by some kind of hash function. If it is provided by the hash function, we need to check with SA2 whether the recommendation is feasible or not. [Huawei]: If the UE creates group id, there is no common rule that can be shared between the UE and the gNB because it is random hash function. L2 group id is dynamically allocated whenever group is established and there is no preconfigured range of L2 group id to the corresponding service type.

Recommendation 2.3.1-2a [14/17]: (modified) For resource pool with PSFCH, for FB-disabled case, if SCI does not indicate re-transmission resource, sl-drx-HARQ-RTT-Timer starts in the slot following the end of PSFCH resource.

* Agreed.

Recommendation 2.3.1-2b [15/17]: For resource pool with PSFCH, for FB-disabled case, if SCI indicates re-transmission resource, sl-drx-HARQ-RTT-Timer starts in the slot following the end of PSSCH transmission (i.e., currently received PSSCH).

* Agreed.

Recommendation 2.3.1-3a [15/17]: For resource pool without PSFCH, if SCI does not indicate re-transmission resource, allow sl-drx-HARQ-RTT-Timer timer length configuration different from the value for resource pool with PSFCH. The value of the RTT timer length (fixed to be zero, or allow non-zero value configuration as well) is FFS.

* Agreed.

Recommendation 2.3.1-3b [15/17]: For sl-drx-RetransmissionTimer, a single value is sufficient to cover all cases (FB-enable/disable, PSFCH configured/not-configured).

* Agreed.

Recommendation 2.3.1-4 [14/17]: For resource pool without PSFCH, if sl-PUCCH-Config is not configured, support drx-HARQ-RTT-TimerSL with a fixed value as zero.

* Agreed.

[OPPO]: The original question was whether to support RTT or not in that case, then there were some concerns. However, the companies who expressed concern were ok to support RTT with a fixed value as zero as a compromise.

Recommendation 2.3.4-1a/b/c: For SL-DRX over PC5 interface, define a single capability bit covering all cast types [14/16] and both Tx and Rx sides [16/16].

* Agreed.

> 70% Supporting Ratio (= only 4/5 objections)

Recommendation 2.1.1-6 [12/17]: No need to capture in spec the condition for Rx-UE to reject a DRX configuration.

* Agreed.

Recommendation 2.2-1a [13/17]: (modified) Check with SA2 whether a same L2 ID may associate with multiple Tx profiles, and thus may associate with both DRX-based Tx profile and non-DRX based Tx profile in Rel-16. Then also check with SA2 if 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).

* Agreed.
* DCR issue raised by ZTE can be discussed as part of LS preparation. If the question is valid to companies, we’re also adding that question otherwise we’re not adding it.

[Session chair]: From RAN2 point of view, can we also express RAN2 preference, e.g. checking if feasible to avoid the problematic case, e.g. 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). [Huawei, InterDigital, OPPO, ZTE, CATT]: Agree with session chair. [ZTE]: How does the UE know the associated TX profile when DCR is sent? [OPPO]: Do not see real problem to ZTE case, no need to include this question to the LS. [Qualcomm, OPPO, Lenovo]: Ok with the modification. [Qualcomm, Huawei]: Checking with SA2 guy, in Rel-16, association with multiple TX profiles is allowed, but if RAN2 indicates RAN2 preference, SA2 will consider it for Rel-17 SL DRX operation.

Recommendation 2.3.1-1 [12/17]: For unicast, sl-drx-RetransmissionTimer is not started after expiry of sl-drx-HARQ-RTT-Timer when the PSFCH of ACK transmission is dropped.

* Agreed.

[Vivo, Huawei]: With this recommendation, if TX UE runs RTT and retransmission timer and the TX UE schedules new transmission, the packet drop can happen. [Ericsson, OPPO, ZTE, Intel]: We agreed UE is allowed to send initial transmission during any active time (including retransmission timer) for UC, but it doesn’t mean the UE should do that. Whether to do that or not is up to UE implementation. Smart UE implementation may not do that (due to possible mismatch between UEs). Ok to follow majority companies’ view. [Qualcomm]: We may consider adding some note to avoid inter-operation issue between different vendors. [OPPO]: First let’s consolidate the proposal itself.

Recommendation 2.3.3-3a [12/16] for resource reselection due to pre-emption, the reselected resource should not be earlier than the pre-empted resource in time domain.

* Agreed.

[Ericsson, Qualcomm, Nokia, LG, InterDigital, ZTE]: No LS is needed. [Lenovo, Vivo, Huawei, Xiaomi]: LS is needed. [Ericsson, ZTE]: According to our RAN1, it can be handled by UE implementation. [LG, InterDigital]: Although pre-emption is RAN1 scope, resource selection is RAN2 scope. RAN2 needs to discuss how to implement this recommendation in MAC.

For-further-discussion, with > 60% supporting ratio

Recommendation 2.1.1-2 [10/16]: (modified) For messages delivery after PC5-S DCR message until and including PC5-RRC RRCReconfigurationSidelink message including initial DRX configuration, UE remains in active. FFS on PC5-RRC RRCReconfigurationSidelinkComplete.

* Agreed.

[Apple]: Is the recommendation applied to both directions? What does “DRX is not applied” mean? We may have better wording, e.g. “remain in active” [Vivo, LG]: With this recommendation, we need more specification efforts like FFS on PC5-RRC RRCReconfigurationSidelinkComplete. [Qualcomm]: If RX UE is Rel-16 UE, the RX UE cannot know the default SL DRX active time. For backward compatibility (e.g. Rel-17 TX UE and Rel-16 RX UE), the recommendation needs to be supported.

Recommendation 2.1.1-3a: Not include inactivity timer [11/16], HARQ RTT timer [12/14] or re-transmission timer [12/14] in assistance information from Rx UE to Tx UE.

* Not include HARQ RTT timer and retransmission timer in assistance information from RX UE to TX UE. FFS on inactivity timer.

Recommendation 2.1.1-3b [11/17]: (modified) In assistance information from Rx UE to Tx UE, multiple DRX settings can be included (detailed signalling format can be left to RRC running-CR discussion).

* Agreed.

[Huawei]: “multiple DRX setting” would be better wording.

Recommendation 2.1.1-5b [11/16]: Add a NOTE that Tx-UE derives the DRX setting by taking assistance information into account (detailed wording left to RRC running-CR discussion).

Recommendation 2.3.2-3 [11/16]: If sl-PUCCH-Config is not configured, for both PSFCH configured and not-configured cases, drx-HARQ-RTT-TimerSL starts at the first symbol after end of PDCCH resource.

Recommendation 2.3.3-4 [11/18], 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 further discussion, with <60% supporting ratio, or with FFS-point

Initiation condition for assistance-information

Recommendation 2.1.1-4: The delivery of assistance information can be initiated if peer-UE is capable of sidelink DRX [14/17], the assistance information has not been sent previously [9/17].

DRX configuration rejection

Recommendation 2.1.1-7: RAN2 discuss whether Rx-UE use the message of RRCReconfigurationCompleteSidelink [7/15] or RRCReconfigurationFailureSidelink [8/15] to reject a DRX configuration. If RRCReconfigurationFailureSidelink is used, RAN2 discuss whether all configurations to be rejected or just the DRX configuration to be rejected.

Recommendation 2.1.1-7a/7b [15/17]: Regardless of whether message of RRCReconfigurationCompleteSidelink or RRCReconfigurationFailureSidelink to be used introduce an indication in the message for the DRX configuration rejection.

Recommendation 2.1.1-8 [8/9]: After rejecting the DRX configuration, Rx-UE uses the prior SL DRX configuration (included in the latest RRCReconfigurationSidelink message which has been accepted by Rx UE) until receiving a new SL DRX configuration. [?/?] RAN2 further discuss the case where there was no previous RRCReconfigurationSidelink message which included DRX configuration accepted by Rx UE.

DRX in mode-1

Recommendation 2.1.2-2e [?/15]: RAN2 further discuss how to handle the SL-DRX configuration if gNB is incapable of SL-DRX while the Tx-UE is in mode-1.

Recommendation 2.1.2-4 [10/17]: For Tx-UE in mode-1, SL-DRX command MAC-CE can be used, and RAN2 not pursue further optimization for it.

Recommendation 2.3.2-2: 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 [9/15, 8/14].

Tx-profile

Recommendation 2.2-3a: The Tx profile should include at least the information of DRX support or not [16/16], and RAN2 further discuss whether there is a need for release identity [8/16] or not [8/16].

DRX capability

Recommendation 2.3.4-1d/e/f/g/h/i [?/16]: For SL-DRX over PC5 interface, define it as conditionally mandatory per-UE capability, with capability bits in PC5-RRC, with neither FR1-FR2 nor FDD-TDD differentiation, and with capability bits in Uu-RRC, with no FR1-FR2 or FDD-TDD differentiation.

NOTE-vs-Normative-text for DRX-vs-resource-(re)selection

Recommendation 2.3.3-1a [17/18]: Capture the “MAC layer provides active-time to PHY layer” in normative text as baseline (further discussion on the wording can be done in running-CR discussion).

Recommendation 2.3.3-1b [?/15]: For the step of MAC layer providing active-time to PHY layer, RAN2 further discuss whether/how to specify the left details besides the normative text of Recommendation 2.3.3-1a, e.g., via either a NOTE or a normative text (a TP is to be provided for either case).

Recommendation 2.3.3-2a [10/17]: Capture resource selection “within SL DRX Active time where SL DRX timers that are running and will be running in the future” in normative text as baseline (further discussion on the wording can be done in running-CR discussion).

Recommendation 2.3.3-2b [?/16]: For the step of MAC layer perform resource (re)selection based on the resource set reported by PHY layer, RAN2 further discuss the issue on resources (re)selection for initial/re-transmission for group-cast. Other than that, RAN2 further discuss whether/how to specify the left details besides the normative text of Recommendation 2.3.3-2a, e.g., via either a NOTE or a normative text (a TP is to be provided for either case).

* [AT117-e][706][V2X/SL] TP for SL DRX active time indication to PHY and resource (re)selection in SL DRX (OPPO)

 **Scope:** Make a compromised TP with the consideration to avoid too much specification efforts and to clarify the UE behaviour enough.

 **Intended outcome:** Endorse TP in R2-2203678 and discussion summary in R2-2203679 (if needed)

**Deadline:** 2/28 13:00 UTC

Working assumptions:

1. Slots associated with the announced periodic transmissions by the TX UE are considered as SL active time of the RX UE.
2. For GC, sl-drx-StartOffset (ms) = DST L2 ID MOD sl-drx-Cycle (ms)
3. TX/RX UE determines the on-duration timer applied for groupcast/broadcast transmissions associated with a specific L2 destination ID as the maximum on duration timer configured for any of the QoS profiles associated with that L2 destination ID.
4. When mode 1 SL grant is not in SL active time of any destination that has data to be sent, for initial transmission and the mode 1 grant is dropped, UE sends ACK to gNB.

R2-2202190 Discussion on DRX left issues OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2202388 Leftover Issue for Sidelink DRX CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2202430 Remaining aspects of SL DRX Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2202452 Discussion on SL DRX remaining issues for unicast ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2202453 Discussion on TX profile issues for SL DRX ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2202475 Consideration of the Active Time for Periodic Transmissions InterDigital, Ericsson, vivo, Huawei, HiSilicon, Nokia, ASUSTek, Lenovo, Motorola Mobility, Samsung discussion Rel-17 NR\_SL\_enh-Core

R2-2202476 Resource Allocation for DRX InterDigital discussion Rel-17 NR\_SL\_enh-Core

R2-2202540 Discussion on remaining issues on SL-DRX Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2202581 Remaining MAC issues for SL DRX Lenovo, Motorola Mobility discussion Rel-17

R2-2202667 On SL DRX and candidate resource selection Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2202713 Remaining issue on sidelink DRX Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2202764 Consideration on the different DRX status among RX UEs in SL groupcast Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2202900 TP for NOTE-based approach for Q2.3.3-1b in [POST116bis-e][705] OPPO discussion Rel-17 NR\_SL\_enh-Core Late

R2-2202901 TP for normative-text-based approach for Q2.3.3-1b in [POST116bis-e][705] OPPO discussion Rel-17 NR\_SL\_enh-Core Late

R2-2202902 TP for NOTE-based approach for Q2.3.3-2b in [POST116bis-e][705] OPPO discussion Rel-17 NR\_SL\_enh-Core Late

R2-2202903 TP for normative-text-based approach for Q2.3.3-2b in [POST116bis-e][705] OPPO discussion Rel-17 NR\_SL\_enh-Core Late

R2-2202941 Discussion on remaining issues for SL DRX LG Electronics France discussion NR\_SL\_enh-Core

R2-2202984 consideration on the remaining issues for SL DRX LG Electronics France discussion Rel-17

R2-2203047 SL-DRX negotiation procedure in unicast vivo discussion Rel-17

R2-2203048 Unsolved issues on SL-DRX vivo discussion Rel-17

R2-2203082 Remaining issues for SL DRX Samsung Research America discussion

R2-2203147 Discussion on sidelink DRX open issues Xiaomi discussion

R2-2203152 Resource selection considering SL DRX ITL discussion Rel-17

R2-2203182 SL DRX CP aspects Lenovo, Motorola Mobility discussion NR\_SL\_enh-Core

R2-2203200 Handling of sidelink mode-1 grant drop due to misalignment with SL-DRX Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_enh-Core

R2-2203274 Down-selection for SL DRX configuration for GC/BC with multiple QoS profiles associated with the same L2 DST ID Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

### 8.15.3 Resource allocation enhancements RAN2 scope

Including [POST116bis-e][706] and [POST116bis-e][707].

R2-2202823 Summary of [POST116bis-e][706][V2X/SL] Open issues on power-saving resource allocation, Phase 2 vivo (Rapporteur) discussion Late

Proposal 1: A UE decides which resource allocation scheme(s) can be used in the AS based on UE capability and the allowed resource schemes (i.e. allowedResourceSelectionConfig) in the resource pool configuration.

Proposal 2: A UE does not report the type of NR SL communication it is performing to the RAN (which decides what resource configuration and resource allocation scheme the UE can use based on UE capability).

Proposal 4a-1: There is a restriction that a UE can only use a resource allocation scheme to transmit in a pool allowing this scheme with “allowedResourceSelectionConfig”. RAN2 to further confirm whether/what Spec impact is needed to capture this restriction.

Proposal 4a-2: It is up to UE implementation how to consider the per-pool allowedResourceSelectionConfig and UE capability during resource pool selection. RAN2 to further confirm whether to capture it as a NOTE in the Spec.

Proposal 4b: It is up to UE implementation to select an allowed resource allocation scheme finally used in the selected resource pool (if the selected pool allows multiple resource allocation schemes the UE is capable to perform).

R2-2203159 Summary of [POST116bis-e][707][V2X/SL] Open issues on IUC (LG) LG (Rapporteur) discussion Rel-17 NR\_SL\_enh-Core Late

Proposal 2-1: [16/16] A standalone MAC CE for UE-A’s IUC information is transmitted through HARQ Feedback disabled MAC PDU.

Proposal 2-2: [16/16] When a MAC CE for IUC information is multiplexed with MAC SDU(s), the HARQ attribute of a MAC PDU is determined by following sl-HARQ-FeedbackEnabled being set to enabled or disabled for the highest priority logical channel included in the MAC PDU.

Proposal 2-3: [16/16] A standalone MAC CE for UE-B’s explicit request is transmitted through HARQ Feedback disabled MAC PDU.

Proposal 2-4: [16/16] When a MAC CE for explicit request is multiplexed with MAC SDU(s), the HARQ attribute of a MAC PDU is determined by following sl-HARQ-FeedbackEnabled being set to enabled or disabled for the highest priority logical channel included in the MAC PDU.

Proposal 3-1: [a: 3/16, b: 5/16, c: 2/16] RAN2 should discuss the priority order of a MAC CE for UE-A’s IUC information.

Proposal 3-2: [option b: 6/16, no strong view: 6/16] RAN2 supports the priority order of a MAC CE for UE-B’s explicit request is between SL CSI reporting MAC CE and SL DRX command MAC CE.

Proposal 3-3: RAN2 should discuss the priority order between IUC request MAC CE and IUC MAC CE.

- Option 1 [9/15]. IUC request MAC CE has a higher priority than IUC MAC CE

- Option 2 [8/15]. IUC MAC CE has a higher priority than IUC request MAC CE

Proposal 4-1: [11/16] RAN2 introduces a mechanism of timer-based latency bound restriction for transmission of UE-A’s IUC information.

Proposal 4-2: RAN2 should discuss the applied scenario(s) where the timer-based latency bound restriction is applied for the transmission of UE-A’s IUC information.

- Option 1 [7/11]. Explicit request-based case only

- Option 2 [7/11]. Both explicit request-based IUC and condition-based IUC

Proposal 4-3: [10/11] If option 2 of proposal 4-2 is agreed, for condition-based IUC, RAN2 introduces the timer-based latency bound restriction for the transmission of UE-A’s IUC information only in UC.

Proposal 4-4.1: [11/11] RAN2 introduces the timer-based latency bound restriction on the transmission of UE-A’s IUC information for both preferred resource set and non-preferred resource set in explicit request-based IUC.

Proposal 4-4.2: [11/11] RAN2 introduces the timer-based latency bound restriction on the transmission of UE-A’s IUC information for both preferred resource set and non-preferred resource set in condition-based IUC.

Proposal 4-5.1: RAN2 should discuss which option to support for configuring a timer for transmission of UE-A's IUC information in explicit request-based IUC.

- Option 1 [8/11]. “UE-B sets timer value to UE-A through PC5 RRC signaling”

- Option 2 [6/11]. “Timer value is configured based on (pre)configuration of the network”

Proposal 4-5.2: RAN2 should discuss which option to support for configuring a timer for transmission of UE-A's IUC information in condition-based IUC.

- Option 1 [4/11]. “UE-B sets timer value to UE-A through PC5 RRC signaling”

- Option 2 [5/11]. “Timer value is configured based on (pre)configuration of the network”

Proposal 4-6.1: [10/11] RAN2 supports that UE-A starts the timer for the transmission of UE-A's IUC information in the explicit request-based IUC when receiving an explicit request from UE-B and deciding to trigger IUC information to be transmitted UE-B.

Proposal 4-6.2: [9/11] RAN2 supports that UE-A starts the timer for the transmission of UE-A's IUC information in the condition-based IUC when UE-A decides to trigger IUC information to be transmitted to UE-B in the condition-based IUC.

Proposal 4-7.1: [9/11] RAN2 supports that UE-A can stop the timer for the transmission of IUC information in explicit request-based IUC when an IUC information to UE-B is generated by the Multiplexing and Assembly procedure.

Proposal 4-7.2: [9/11] RAN2 supports that UE-A can stop the timer for the transmission of IUC information in condition-based IUC when an IUC information to UE-B is generated by the Multiplexing and Assembly procedure.

Proposal 4-8.1: [11/11] RAN2 supports that UE-A can cancel the transmission of IUC information in explicit request-based IUC if the timer for the triggered UE-A’s IUC information reporting expires.

Proposal 4-8.2: RAN2 supports that UE-A can cancel the transmission of IUC information in explicit request-based IUC when an IUC information to UE-B is generated by the Multiplexing and Assembly procedure.

Proposal 4-8.3: [10/11] RAN2 supports that UE-A can cancel the transmission of IUC information in condition-based IUC if the timer for the triggered UE-A’s IUC information reporting expires.

Proposal 4-8.4: RAN2 supports that UE-A can cancel the transmission of IUC information in condition-based IUC when an IUC information to UE-B is generated by the Multiplexing and Assembly procedure.

Proposal 6-1: [RAN2 can start discussion: 5/16, wait for RAN1 progress: 10/16] RAN2 should decide whether to discuss the FFS point (i.e., FFS: Under which conditions groupcast/broadcast can be supported) on RAN1's WA.

- E.g., GG/BC session establishment (L2 DST ID setting) for transmitting the IUC information

Proposal 7-1: [13/16] For determining preferred resource set in Scheme 1, PC5-RRC signalling from UE-B to UE-A for transmitting the parameters (i.e., prio\_TX, L\_subCH, P\_rsvp\_TX, n+T\_1, n+T\_2) is not supported when inter-UE coordination information transmission is triggered by a condition other than explicit request reception.

Proposal 8-1: [RAN2 not further discuss: 9/16, wait for RAN1 progress: 5/16] For inter-UE coordination information is triggered by UE-B’s request, RAN2 not further discuss PC5-RRC signaling from UE-B to UE-A to provide information on whether UE-B supports sensing/resource exclusion.

R2-2202191 Discussion on power saving resource allocation enhancement OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2202192 Discussion on inter-UE coordination OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2202387 IUC Request and Response MAC CE Design CATT discussion Rel-17 NR\_SL\_enh-Core

R2-2202431 MAC CE design of inter-UE coordination Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2202432 Remaining issues for power saving resource allocation Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2202451 Discussion on Inter-UE coordination ZTE Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2202477 On the Allowable Cast Types for IUC InterDigital discussion Rel-17 NR\_SL\_enh-Core

R2-2202541 Discussion on Inter-UE Coordination Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2202542 Discussion on power saving resource selection Apple discussion Rel-17 NR\_SL\_enh-Core

R2-2202582 Open issues on SL inter-UE coordination Lenovo, Motorola Mobility discussion Rel-17

R2-2202668 Inter-UE coordination open issues Intel Corporation discussion Rel-17 NR\_SL\_enh-Core

R2-2202866 Consideration on Inter-UE coordination Huawei, HiSilicon discussion

R2-2202942 Discussion on Inter-UE Coordination LG Electronics France discussion NR\_SL\_enh-Core

R2-2203046 Latency bound and remaining PDB related to inter-UE coordination MAC CE not covered by open issue list vivo discussion Rel-17

R2-2203083 Partial-sensing/random selection based resource allocation in SL DRX Samsung Research America discussion

R2-2203084 Introduction of IUC MAC CE Samsung Research America discussion

R2-2203207 Whether UE-A in IUC can be in mode 1 or mode 2 Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_SL\_enh-Core

R2-2203472 Discussion on Inter-UE Coordination Qualcomm Finland RFFE Oy discussion