3GPP TSG-RAN WG2 Meeting #121bis Draft\_R2-2304205  
E-meeting, Apr. 17 – Apr. 26, 2023

Agenda Item: x.x

Source: Session Chair (OPPO)

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

**[AT121bis-e] Offline discussion**

* [AT121bis-e][500] Organizational – LTE V2X and NR SL (OPPO)

**Scope**:

1. Share plans for the meetings and list of ongoing email discussions for the sessions
2. Share meetings notes and agreements for review and endorsement
3. Flag LSs for discussion

**Intended outcome:**

1. General information sharing about the sessions

* [AT121bis-e][501][V2X/SL] R16 RRC corrections (Huawei)

**Scope:** Discuss corrections for

1) sl-MaxTransPower, including 3157, 3158, 3906, 2799, 3909, 3912, 3913, and

2) carrier frequency for SL-RSRP measurement, including 4144, 4145.

3) measurement event triggering: 4078

Merge corrections that can be agreed in principle.

**Intended outcome:**

1. Discussion summary in R2-2304216.
2. If needed, 38.331 CR in R2-2304217 for R16 and R2-2304218 for R17

**Deadline:** Aim at email approval before at 4/25 CB session

* [AT121bis-e][502][V2X/SL] Clear SL CG (ASUSTek)

**Scope:** Discuss corrections for

1) SL CG clearing at MAC reset, including 2574, 3210, 3915, 3928, and

Merge corrections that can be agreed in principle.

**Intended outcome:**

1. discussion summary in R2-2304219.
2. If needed, 38.321 CR in R2-2304220 for R16 and R2-2304221 for R17

**Deadline:** Comeback at 4/25 CB session

* [AT121bis-e][503][V2X/SL] Default CBR configuration (OPPO)

**Scope:** Discuss corrections for (taking the conclusion for Case-3 into account, discuss the need of R17 CR, and no need to cover case-4)

1) default CBR, including 2841, 2617, 2795, 3908, 3214, 3215, 2619, 2647

Merge corrections that can be agreed in principle.

**Intended outcome:**

1. discussion summary in R2-2304227
2. if needed, 38.321 CR in R2-2304228 for R16 and R2-2304229 for R17
3. if needed, 38.331 CR in R2-2304230 for R16 and R2-2304231 for R17

**Deadline:** Comeback at 4/25 CB session

* [AT121bis-e][504][V2X/SL] R17 CP Corrections (Huawei)

**Scope:** Discuss corrections for 38.331/304, including 2683 (except change-3), 2686

Identify CRs that can be agreed in principle with or without revision

**Intended outcome:**

1. Discussion summary in R2-2304222.
2. For CRs can be agreed in principle after revision, Tdoc number will be allocated after conclusion from discussion.

**Deadline:** Aim at email approval before 4/25 CB session

* [AT121bis-e][505][V2X/SL] DRX timer numerology (ASUSTek)

**Scope:** Discuss corrections

1. DRX timer numerology, including 3907, 3925, 3926, 3927, 2908, and change-3 of 2683

Identify CRs that can be agreed in principle with or without revision

**Intended outcome:**

1. discussion summary in R2-2304223.
2. If needed, 38.331 CR in R2-2304224
3. If needed, 38.321 CR in R2-2304225

**Deadline:** Comeback at 4/25 CB session

* [AT121bis-e][506][V2X/SL] R17 MAC Corrections (LG)

**Scope:** Discuss corrections for 38.321, including 2618, 2685

Identify CRs that can be agreed in principle with or without revision

**Intended outcome:**

1. Discussion summary in R2-2304226.
2. For CRs can be agreed in principle after revision, Tdoc number will be allocated after conclusion from discussion.

**Deadline:** Aim at email approval before at 4/25 CB session

**[POST121bis] Email discussion**

## Approved outgoing LSs

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

REL-15 and Earlier WIs related to V2x and Sidelink are in scope but not listed explicitly (long list).

This Agenda Item is treated in the V2X and Sidelink Breakout session

## 5.2 NR V2X

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

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.).

R2-2302415 Reply LS to RAN4 on PSFCH configured power with multiple resource pools (R1-2302231; contac: LGE) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN4 Cc:RAN2

=> Noted

R2-2302574 Left issue on SL CG clear during MAC-reset OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

R2-2302799 Correction to sl-MaxTransPower Nokia, Nokia Shanghai Bell CR Rel-17 38.331 17.4.0 3965 - F NR\_SL\_enh-Core

*Moved from 6.10.2*

R2-2303157 Correction on PSFCH configured power for NR sidelink CATT CR Rel-16 38.331 16.12.0 3993 - F 5G\_V2X\_NRSL-Core

R2-2303158 Correction on PSFCH configured power for NR sidelink CATT CR Rel-17 38.331 17.4.0 3994 - A 5G\_V2X\_NRSL-Core

R2-2303210 Discussion on clear of SL CG upon MAC reset Xiaomi discussion

R2-2303211 Correction on PSFCH reception for NR sidelink Xiaomi CR Rel-16 38.321 16.11.0 1585 - F 5G\_V2X\_NRSL-Core

R2-2303212 Correction on PSFCH reception for NR sidelink Xiaomi CR Rel-17 38.321 17.4.0 1586 - A 5G\_V2X\_NRSL-Core

R2-2303632 TS 38.331 correction on carrier frequency for SL-RSRP measurement Huawei, HiSilicon CR Rel-16 38.331 16.12.0 4018 - F 5G\_V2X\_NRSL-Core Revised

R2-2303633 TS 38.331 correction on carrier frequency for SL-RSRP measurement Huawei, HiSilicon CR Rel-17 38.331 17.4.0 4019 - A 5G\_V2X\_NRSL-Core Revised

R2-2303742 Summary on user plane corrections for NR V2X LG Electronics France discussion 5G\_V2X\_NRSL-Core Late

R2-2303906 Correction on field description for transmission power ZTE Corporation, Sanechips CR Rel-16 38.331 16.12.0 4031 - F 5G\_V2X\_NRSL-Core

R2-2303909 Correction on field description for transmission power ZTE Corporation, Sanechips CR Rel-17 38.331 17.4.0 4034 - F NR\_SL\_enh-Core

*Moved from 6.10.2*

R2-2303912 Clarification on sl-MaxTransPower vivo CR Rel-16 38.331 16.12.0 4047 - F 5G\_V2X\_NRSL-Core

R2-2303913 Clarification on sl-MaxTransPower vivo CR Rel-17 38.331 17.4.0 4046 - A 5G\_V2X\_NRSL-Core

R2-2303915 Corrections on MAC reset regarding configured sidelink grant ASUSTeK, Huawei, HiSilicon, Samsung, vivo CR Rel-16 38.321 16.11.0 1602 - F 5G\_V2X\_NRSL-Core

R2-2303928 Corrections on MAC reset regarding configured sidelink grant ASUSTeK, Huawei, HiSilicon, Samsung, vivo CR Rel-17 38.321 17.4.0 1605 - A 5G\_V2X\_NRSL-Core

R2-2304078 Correction for Measurement Event Triggering Criteria Sharp CR Rel-16 38.331 16.12.0 4049 - F 5G\_V2X\_NRSL-Core

*Moved from 5.1.3.1*

R2-2304144 TS 38.331 correction on carrier frequency for SL-RSRP measurement Huawei, HiSilicon CR Rel-16 38.331 16.12.0 4018 1 F 5G\_V2X\_NRSL-Core R2-2303632

R2-2304145 TS 38.331 correction on carrier frequency for SL-RSRP measurement Huawei, HiSilicon CR Rel-17 38.331 17.4.0 4019 1 A 5G\_V2X\_NRSL-Core R2-2303633

R2-2304148 Summary on control plan corrections for NR V2X Huawei, HiSilicon discussion Rel-16 5G\_V2X\_NRSL-Core Late

* [AT121bis-e][501][V2X/SL] R16 RRC corrections (Huawei)

**Scope:** Discuss corrections for

1) sl-MaxTransPower, including 3157, 3158, 3906, 2799, 3909, 3912, 3913, and

2) carrier frequency for SL-RSRP measurement, including 4144, 4145.

3) measurement event triggering: 4078

Merge corrections that can be agreed in principle.

**Intended outcome:**

1. Discussion summary in R2-2304216.
2. If needed, 38.331 CR in R2-2304217 for R16 and R2-2304218 for R17

**Deadline:** Aim at email approval before at 4/25 CB session

* [AT121bis-e][502][V2X/SL] Clear SL CG (ASUSTek)

**Scope:** Discuss corrections for

1) SL CG clearing at MAC reset, including 2574, 3210, 3915, 3928, and

Merge corrections that can be agreed in principle.

**Intended outcome:**

1. discussion summary in R2-2304219.
2. If needed, 38.321 CR in R2-2304220 for R16 and R2-2304221 for R17

**Deadline:** Comeback at 4/25 CB session

R2-2303211 Correction on PSFCH reception for NR sidelink Xiaomi CR Rel-16 38.321 16.11.0 1585 - F 5G\_V2X\_NRSL-Core

R2-2303212 Correction on PSFCH reception for NR sidelink Xiaomi CR Rel-17 38.321 17.4.0 1586 - A 5G\_V2X\_NRSL-Core

[Xiaomi] tend to agree with LG.

=> Not pursue.

R2-2303742 Summary on user plane corrections for NR V2X LG Electronics France discussion 5G\_V2X\_NRSL-Core Late

## 6.10 NR Sidelink enhancements

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

Tdoc Limitation: 3 tdocs

Note for RRC and MAC CRs, CR rapporteur’s summary and suggestion may be provided. 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.).

### 6.10.1 General and Stage 2 corrections

LSs and Stage 2 corrections.

R2-2302410 Reply LS to RAN2 on default CBR configuration (R1-2302174; contact: OPPO) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2

* Noted

Chair: Need to conclude on the validity of Case-3. [Ericsson] in legacy, there is no limitation to use the default CBR, so Ericsson believe R1 confirmed Case-3. [Xiaomi] Same view as Ericsson. [CATT] Same view as Ericsson. [Huawei] Do we really need to do the change? [LG] Same view as OPPO. No need to do the change. [Nokia] Same view as Huawei. [ZTE] The change may be needed. [vivo] First half of the proposal is OK at least. Can follow majority view for the 2nd part. [Ericsson] Should agree the validity of Case-3. And would like to do the spec change for it. [Huawei] Do the change on R17 CR. But not touch R16 CR. [Qualcomm] share the view with Huawei. [Xiaomi] R17 change. [Intel, OPPO] Same view as Huawei. [vivo] will we discuss the need of R17 CR?

Agreement:

RAN2 confirm the validity of Case-3 (usage of R16 default CBR for full sensing in normal pool). But no spec change for R16 at least.

Chair: And what is companies view on Case-4 (3908, ZTE), i.e., usage of R16 default CBR for partial sensing and random selection in normal pool when R17 default CBR is not configured. [vivo] tend to agree ZTE. [NEC] to agree the CR? [Chair] just to check the validity of this case first. [Ericsson] Send LS to R1 for it firstly. [Qualcomm] Not sure if it is aligned with R1 view. [Huawei] same view as Qualcomm. [ZTE] R17 CBR parameter is an optional IE, but OK to check with R1. [Apple, Nokia] same view as Qualcomm. [Xiaomi] rely on network to avoid this case? if partial sensing is configured, this CBR value is configured?

R2-2302841 Discussion on RAN1 LS R1-2302174 Ericsson discussion Rel-17 NR\_SL\_enh-Core

* [AT121bis-e][503][V2X/SL] Default CBR configuration (OPPO)

**Scope:** Discuss corrections for (taking the conclusion for Case-3 into account, discuss the need of R17 CR, and no need to cover case-4)

1) default CBR, including 2841, 2617, 2795, 3908, 3214, 3215, 2619, 2647

Merge corrections that can be agreed in principle.

**Intended outcome:**

1. discussion summary in R2-2304227
2. if needed, 38.321 CR in R2-2304228 for R16 and R2-2304229 for R17
3. if needed, 38.331 CR in R2-2304230 for R16 and R2-2304231 for R17

**Deadline:** Comeback at 4/25 CB session

R2-2302684 Corrections on TS 38.300 for SL enhancements Huawei, HiSilicon CR Rel-17 38.300 17.4.0 0648 - F NR\_SL\_enh-Core

R2-2302839 Correction to 38300 on IUC Ericsson, Apple CR Rel-17 38.300 17.4.0 0649 - F NR\_SL\_enh-Core

R2-2302840 Correction to 38300 on IUC cast type Ericsson CR Rel-17 38.300 17.4.0 0650 - F NR\_SL\_enh-Core

R2-2303213 Miscellaneous corrections on TS 38.300 for NR sidelink Xiaomi CR Rel-17 38.300 17.4.0 0654 - F NR\_SL\_enh-Core

R2-2303383 Miscellaneous corrections for Stage 2 NR sidelink enhancements Apple CR Rel-17 38.300 17.4.0 0655 - F NR\_SL\_enh-Core

### 6.10.2 Control plane corrections

Includes corrections on 38.331 and 38.304.

R2-2302617 Miscellaneous RRC corrections for the usage of default CBR configuration CATT CR Rel-17 38.331 17.4.0 3955 - F NR\_SL\_enh-Core

R2-2302683 Miscellaneous corrections on 38.331 for SL enhancements Huawei, HiSilicon CR Rel-17 38.331 17.4.0 3960 - F NR\_SL\_enh-Core

R2-2302686 Corrections on TS 38.304 for SL enhancements Huawei, HiSilicon CR Rel-17 38.304 17.4.0 0329 - F NR\_SL\_enh-Core

R2-2302795 On default CBR configuration Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

R2-2303907 Correction on field description for DRX timer ZTE Corporation, Sanechips CR Rel-17 38.331 17.4.0 4032 - F NR\_SL\_enh-Core

R2-2303908 Correction on default CBR configuration ZTE Corporation, Sanechips CR Rel-17 38.331 17.4.0 4033 - F NR\_SL\_enh-Core

R2-2303925 Discussion on deriving timer length for DRX timers ASUSTeK discussion Rel-17 38.331 NR\_SL\_enh-Core

R2-2303926 Corrections on deriving timer length for DRX timers - option 1a ASUSTeK CR Rel-17 38.331 17.4.0 4041 - F NR\_SL\_enh-Core

R2-2303927 Corrections on deriving timer length for DRX timers - option 1b ASUSTeK, vivo CR Rel-17 38.331 17.4.0 4042 - F NR\_SL\_enh-Core

R2-2304150 Summary on control plane corrections for NR SL enhancements Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core Late

* [AT121bis-e][504][V2X/SL] R17 CP Corrections (Huawei)

**Scope:** Discuss corrections for 38.331/304, including 2683 (except change-3), 2686

Identify CRs that can be agreed in principle with or without revision

**Intended outcome:**

1. Discussion summary in R2-2304222.
2. For CRs can be agreed in principle after revision, Tdoc number will be allocated after conclusion from discussion.

**Deadline:** Aim at email approval before 4/25 CB session

* [AT121bis-e][505][V2X/SL] DRX timer numerology (ASUSTek)

**Scope:** Discuss corrections

1. DRX timer numerology, including 3907, 3925, 3926, 3927, 2908, and change-3 of 2683

Identify CRs that can be agreed in principle with or without revision

**Intended outcome:**

1. discussion summary in R2-2304223.
2. If needed, 38.331 CR in R2-2304224
3. If needed, 38.321 CR in R2-2304225

**Deadline:** Comeback at 4/25 CB session

### 6.10.3 User plane corrections

Includes the email discussion [POST121][510][V2X/SL] and corrections on 38.321, 38.322, and 38.323.

R2-2302618 Correction on resource (re-)selection for NR sidelink CATT CR Rel-17 38.321 17.4.0 1574 - F NR\_SL\_enh-Core

R2-2302619 Correction on case for default CBR configuration CATT CR Rel-17 38.321 17.4.0 1575 - F NR\_SL\_enh-Core

R2-2302647 Discussion on default CBR OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2302685 Correction on 38.321 for SL enhancements Huawei, HiSilicon CR Rel-17 38.321 17.4.0 1578 - F NR\_SL\_enh-Core

R2-2302908 SL DRX timers BWP numerology Nokia, Nokia Shanghai Bell draftCR Rel-17 38.321 17.4.0 F NR\_SL\_enh-Core

R2-2303214 Discussion on the usage of default CBR values for NR sidelink Xiaomi discussion

R2-2303215 Correction on the usage of default CBR values for NR sidelink Xiaomi CR Rel-17 38.321 17.4.0 1587 - F NR\_SL\_enh-Core

R2-2303743 Summary on user plane corrections for NR SL enhancements LG Electronics France discussion Late

* [AT121bis-e][506][V2X/SL] R17 MAC Corrections (LG)

**Scope:** Discuss corrections for 38.321, including 2618, 2685

Identify CRs that can be agreed in principle with or without revision

**Intended outcome:**

1. Discussion summary in R2-2304226.
2. For CRs can be agreed in principle after revision, Tdoc number will be allocated after conclusion from discussion.

**Deadline:** Aim at email approval before at 4/25 CB session

R2-2303744 Summary of email discussion [POST121][510][V2XSL] IUC procedure in re-evaluationpre-emptionconflict indicator (LG) LG Electronics France discussion NR\_SL\_enh-Core

?? (9:5) Proposal 1. Correction (i.e., Modify existing text in section 5.22.1.2a and 5.22.1.2b as follows: “2> randomly select the time and frequency resource from either the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7], or from available resources after a received preferred resource set is taken into account according to 5.22.1.1, …”) is agreed to specify IUC procedure to section 5.22.1.2a and Section 5.22.1.2b.

[LG] Simplified sentence is preferred by companies. [Huawei] whether normative change is really needed?

Agreement:

Proposal 1. Correction (i.e., Modify existing text in section 5.22.1.2a and 5.22.1.2b as follows: “2> randomly select the time and frequency resource from either the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7], or from available resources after a received preferred resource set is taken into account according to 5.22.1.1, …”) is agreed to specify IUC procedure to section 5.22.1.2a and Section 5.22.1.2b.

R2-2303745 User plane corrections on NR Sidelink enhancements LG CR Rel-17 38.321 17.4.0 1595 - F NR\_SL\_enh-Core

=> Agreed in principle

## 7.15 NR Sidelink evolution

(NR\_SL\_enh2; leading WG: RAN1; REL-18; WID: RP-230077)

Time budget: 1 TU

Tdoc Limitation: 5 tdocs

### 7.15.1 Organizational

Includes Incoming LS and rapporteur inputs.

R2-2302407 Reply LS on SL LBT failure indication and consistent SL LBT failure (R1-2302118; contact: vivo) RAN1 LS in Rel-18 NR\_SL\_enh2 To:RAN2

Chair : Propose to Note

R2-2302441 LS on co-channel coexistence (R4-2303718; contact: Huawei) RAN4 LS in Rel-18 NR\_SL\_enh2-Core To:RAN1, RAN2

Chair : Propose to Note

R2-2302570 Work plan of R18 SL-Evo OPPO, LG Work Plan Rel-18 NR\_SL\_enh2

Chair : Propose to Note

R2-2302501 [Draft] LS Response to “Reply LS on SL LBT failure indication and consistent SL LBT failure” vivo LS out Rel-18 NR\_SL\_enh2-Core To:RAN1

### 7.15.2 SL-U: SL Consistent LBT failure

Includes e.g. further updates/details on SL consistent LBT failure, etc.

R2-2302483 Further discussion on SL consistent LBT failure vivo discussion NR\_SL\_enh2-Core

R2-2302586 Discussion on SL consistent LBT failure for SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2302620 SL Consistent LBT failure CATT discussion Rel-18 NR\_SL\_enh2

R2-2302645 Discussion on LBT impact in SL-U OPPO discussion Rel-18 NR\_SL\_enh2

R2-2302838 LBT failure detection and recovery Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_enh2

R2-2302843 Handling consistent LBT failure Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2302872 On SL-U LBT failure Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2302916 LBT Failure for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2302940 Discussion on left issues for SL-U LBT SHARP Corporation discussion NR\_SL\_enh2

R2-2302948 Dicsussion on SL consistent LBT failure NEC discussion Rel-18 NR\_SL\_enh2

R2-2302967 Discussion on SL Consistent LBT failure LG Electronics France discussion NR\_SL\_enh2

R2-2303177 Discussion on Sidelink consistent LBT failure handling ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2303216 Discussion on SL consistent LBT failure Xiaomi discussion

R2-2303232 Discussion on Consistent LBT for NR SL-U Lenovo discussion Rel-18

R2-2303375 Discussion on SL consistent LBT failure Apple discussion Rel-18 NR\_SL\_enh2

R2-2303573 Consistent LBT failure handling for SL-U Spreadtrum Communications discussion Rel-18

R2-2303586 Discussion on SL Consistent LBT failure Qualcomm India Pvt Ltd discussion

R2-2304006 Discussion on SL Consistent LBT failure ITL discussion Rel-18

**[C-LBT failure granularity]**

3177 (ZTE):

Proposal 1: SL consistent LBT failure detection granularity is per SL RB set.

2586 (Huawei):

Proposal 1: The granularity for SL consistent LBT failure is resource pool.

?? SL C-LBT failure is declared per

?? RB-set

?? Resource pool

**[C-LBT Failure handling/recovery#1a, MAC-CE Report triggering]**

4006 (ITL):

(modified) Proposal 1: RAN2 to confirm the following working assumption

- UE uses the MAC CE to report consistent LBT failure to the gNB

**[C-LBT Failure handling/recovery#1b, MAC-CE Report Content]**

2620 (CATT):

(modified) Proposal 1: Confirm the working assumptions on SL consistent LBT failure with some modification, as below:

- The MAC CE indicates RB set where SL consistent LBT failure was declared.

3216 (Xiaomi):

Proposal 9a: Confirm the WA as agreement “The MAC CE indicates SL pool where SL consistent LBT failure was declared”.

?? MAC CE indicates

?? RB-set

?? Resource pool

?? where C-LBT failure happens

**[C-LBT Failure handling/recovery #2, Resource Set Reselection]**

3375 (Apple):

Proposal 5: Upon detection of SL consistent LBT failure, resource pool reselection is triggered when there are not sufficient resource candidates not overlapping with excluded RB sets (i.e. the size of S\_A is lower than a threshold). Otherwise, the resource reselection is performed in current resource pool.

3177 (ZTE):

Proposal 6: Modify and Confirm the working assumption: support the change of RB set of which consistent SL LBT failure has not been triggered from SL consistent LBT failure by TX UE upon consistent LBT failure detection.

Chair: The WA from last meeting: “If SL LBT failure granularity is resource pool/RB set, support the change of resource pool/RB set of which consistent SL LBT failure has not been triggered from SL consistent LBT failure by TX UE upon consistent LBT failure detection. FFS whether/how the triggered consistent SL LBT failure is cancelled.”

?? Upon C-LBT failure is declared, reselect

?? RB-set

?? Resource Pool (if C-LBT failure is per-RB, when the C-LBT happens for the RB-set of this pool. FFS on the case where a pool contains multiple RB-sets)

**[C-LBT Failure handling/recovery #3a, RLF triggering]**

3177 (ZTE):

Proposal 8 When UE has triggered consistent SL LBT failure in all RB sets, whether keep or release the PC5 link should depend on UE implementation.

2620 (CATT):

(modified) Proposal 1: Confirm the working assumptions on SL consistent LBT failure with some modification, as below:

- UE triggers SL RLF for all UC connections when UE has triggered consistent SL LBT failure in all RB sets.

Chair: So the alternatives seem to be make it mandatory or optional?

**[Assistance Information]**

4020 (Xiaomi, Ericsson, vivo)

Proposal 1: RAN2 agrees to introduce assistance information to initiating UE for COT sharing.

3587 (Qualcomm)

Proposal 3. Not support option 3.

### 7.15.3 SL-U: COT sharing and LCP

Includes e.g. LCP enhancement, need of assistance info to initiating UE, further updates/details on COT sharing, etc.

R2-2302498 COT and LCP enhancement NEC discussion NR\_SL\_enh2

R2-2302571 Discussion on COT-Sharing and LCP Enhancement OPPO discussion Rel-18 NR\_SL\_enh2

R2-2302587 Dissuccion on COT sharing and LCP for SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2302621 Discussion on COT sharing and LCP CATT discussion Rel-18 NR\_SL\_enh2

R2-2302844 U2U COT sharing and LCP Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2302849 On COT sharing and LCP Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh2

R2-2302871 Discussion on COT sharing and LCP in SL-U Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2302917 COT Sharing for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2302918 Implementing LCP for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2302963 Discussion on COT sharing and LCP LG Electronics France discussion Rel-18 NR\_SL\_enh2

R2-2303178 Discussion on COT sharing and LCP ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2303197 LCP procedure for SL-U Lenovo discussion Rel-18 NR\_SL\_enh2-Core

R2-2303217 Discussion on assistance information for COT sharing Xiaomi discussion Withdrawn

R2-2303218 Discussion on aspects related to COT sharing Xiaomi discussion

R2-2303270 Discussion on assistance information for COT sharing Xiaomi, Ericsson discussion Withdrawn

R2-2303376 Discussion on COT sharing and LCP impact Apple discussion Rel-18 NR\_SL\_enh2

R2-2303587 Discussion on COT sharing and LCP Qualcomm India Pvt Ltd discussion

R2-2303911 Discussion on changed-LCP and how UE behaves if shared-COT cannot be used vivo discussion

R2-2304020 Discussion on assistance information for COT sharing Xiaomi, Ericsson, vivo discussion

Chair: Seems there are 4 sub-cases altogether

Case1a: PDU generated before COT arrival, and the PDU does not satisfy COT requirement (either not to the initiating UE, or CAPC value is higher)

Case1b: PDU generated before COT arrival, and PDU does satisfy the COT requirement

Case2a: PDU not generated before COT arrival, and no data in RLC buffer satisfying the COT requirement (either no data to the initiating UE, or although there is data to the initiating UE, yet the CAPC value is higher)

Case2b: PDU not generated before COT arrival, and there is data in RLC buffer satisfying the COT requirement

Where for Case-1a) and Case-2a), there is no alternative but can only rely on type-1 LBT. I.e., the uncertainty, or the possibility of using type-2 LBT only comes from Case-1b) and Case-2b).

**[Case 1b (PDU generated already, and satisfies the COT requirement)]**

P1, 3218 (Xiaomi)

Proposal 1: If COT sharing information arrives later than packet generation and the generated packet satisfies the COT requirement, UE performs type 2 LBT, otherwise, UE performs type 1 LBT.

P4, 2621 (CATT)

Proposal 4: For the MAC PDU(s) which has been generated before the reception of the COT sharing information or there is no buffered data satisfying the COT requirement, the responding UE can use type-1 LBT.

?? If the (re)selected resource is within a shared COT, and if PDU generated before COT arrival, and the PDU satisfies COT requirement,

?? perform type-1 LBT

?? perform type-2 LBT

?? up to UE implementation to perform type-1 or type-2 LBT

FFS on spec impact.

**[Case-2b (PDU not generated, and there is data in buffer satisfying the COT requirement)]**

P1, 3911 (vivo)

Proposal 1: If the shared COT arrives before the MAC PDU generation, it is up to UE implementation whether to use the shared COT or not.

P7, 3178 (ZTE)

Proposal 7: In case that the destination corresponding to a shared COT has at least one of the MAC CE and the logical channel, among the logical channels that satisfy all the legacy conditions and the CAPC value is equal to or smaller than the corresponding CAPC value indicated in the shared COT, the UE select the Destination corresponding to the shared COT during LCP procedure.

?? If the (re)selected resource is within a shared COT, and if PDU not generated before COT arrival, and there is data in buffer satisfying COT requirement,

?? perform type-2 LBT

?? up to UE implementation to perform type-1 or type-2 LBT

FFS on spec impact.

**[Case1a (PDU generated already, but NOT satisfies the COT requirement) + Case2a (PDU not generated, and there is NO data in buffer satisfying the COT requirement)]**

P2, 2844 (Ericsson)

Proposal 2 Upon reception of a COT information from a COT initiating UE, the responding UE performs Option 2 when one of the below conditions is met, otherwise, apply Option 1.

a. the responding UE has an ongoing COT. The COT has already gained access to the channel.

b. the responding UE has built a MAC PDU, whose intended Type 1 LBT process is running and associated with a CAPC value larger than (or equal to) the CAPC value associated with the shared COT.

c. the responding UE’s transmissions towards the COT initiating UE has CAPC value larger than the CAPC value associated with the shared COT.

P1, 3218 (Xiaomi)

Proposal 1: If COT sharing information arrives later than packet generation and the generated packet satisfies the COT requirement, UE performs type 2 LBT, otherwise, UE performs type 1 LBT.

P8, 3376 (Apple)

Proposal 8: Upon reception of COT sharing information, if the responding UE has generated MAC PDU which is towards initiating UE and its CAPC value is larger than CAPC value indicated in the COT sharing information, it doesn't need to drop or rebuild the MAC PDU. Instead, it performs type 1 LBT before transmission of this MAC PDU.

Chair: seems we can merge the related proposal to cover more cases

?? If the (re)selected resource is within a shared COT, and either

1) PDU generated before COT arrival, and PDU does not satisfy COT requirement (either not to the initiating UE, or CAPC value is higher), or

2) PDU not generated before COT arrival, and no data in RLC buffer satisfying COT requirement (either no data to the initiating UE, or although there is data to the initiating UE, yet the CAPC value is higher),

perform type-1 LBT. FFS on spec impact.

**[Enhance destination selection step in LCP]**

3376 (Apple)

Proposal 2: RAN2 confirm that destination selection procedure in LCP needs spec change to allow the responding UE to select initiating UE as destination based on information from PHY layer (rather than priority)

2621 (CATT)

Proposal 2: UE does not prioritize the destination(s) which have sent shared COT information to the UE when it performs destination selection during LCP.

?? If a UE decides to perform type-2 LBT for a resource in a shared COT, for destination selection step in enhanced LCP, besides the legacy conditions,

?? further restrict the destinations to be the candidates allowed by the COT (as defined by RAN1).

?? no further restriction needed.

**[Enhance LCH selection step in LCP]**

2488 (Ericsson)

Proposal 4 In case of COT sharing, for the selected Destination, the responding UE selects LCHs following the legacy procedure i.e., doesn’t exclude the LCHs whose CAPC values are larger than the CAPC value indicated in the COT information.

3376 (Apple)

Proposal 6: If the initiating UE can be prioritized to be selected as the destination, introduce a new SL LCP restriction that the responding UE shall not include any MAC SDU(s) of LCH(s) having CAPC value higher than the CAPC value indicated in the COT sharing information.

?? If a UE decides to perform type-2 LBT for a resource in a shared COT, for LCH selection step in enhanced LCP, besides the legacy conditions,

?? further restrict the LCH to those of CAPC of same or lower CAPC value allowed by the COT.

?? no further restriction

### 7.15.4 SL-U: Others

Includes e.g. MCSt impacts, SL resource (re)selection impact, leftovers on SL CAPC, SL DRX and SL CG, etc.

R2-2302499 SL resource (re)selection NEC discussion NR\_SL\_enh2

R2-2302572 Discussion on 'Best-Match' OPPO, Apple, ZTE, Xiaomi, Qualcomm, MTK discussion Rel-18 NR\_SL\_enh2

R2-2302585 Discussion on remaining issues for SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2302622 Consideration on CAPC and LBT Impacts CATT discussion Rel-18 NR\_SL\_enh2

R2-2302846 Other aspects on SL-U Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2302855 DTX operation in sidelink unlicensed Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh2

R2-2302873 Open aspects on SL-U operation Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2302919 Mode 2 Resource Selection for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2302965 Discussion on remaining issues of SL-U LG Electronics France discussion NR\_SL\_enh2

R2-2303179 Discussion on resouce allocation and CAPC in SL-U ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2303233 Other remaining issue for NR SL-U Lenovo discussion Rel-18

R2-2303377 Discussion on resource (re)selection, SL DRX and SL CG in SL-U Apple discussion Rel-18 NR\_SL\_enh2

R2-2303588 Discussion on other design considerations for SL-U Qualcomm India Pvt Ltd discussion

R2-2303611 Discussion on SL CAPC leftovers China Telecom discussion Rel-18 NR\_SL\_enh2

R2-2303914 Discussion on CAPC for non-standardized PQI to decide 'best match' vivo, Lenovo, InterDigital, ASUSTeK, Huawei, HiSilicon discussion

R2-2304013 Discussion on SL DRX ITL discussion Rel-18

**[Working assumption confirmation #1]**

2622 (CATT)

Proposal 3: Confirm the working assumption: Not define shared COT as SL DRX active time.

Proposal 4: Confirm the working assumption on multiple PSFCH occasion with some modification, as below:

In case of multiple PSFCH occasion per PSCCH/PSSCH, if HARQ A/N is successfully transmitted in one PSFCH occasion, Rx UE starts the sl-drx-HARQ-RTT-Timer for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH transmission carrying the SL HARQ feedback.

In case of multiple PSFCH occasion per PSCCH/PSSCH, if LBT failure happens in all PSFCH occasions, Rx UE starts the sl-drx-HARQ-RTT-Timer for the corresponding Sidelink process in the first slot after the end of the last PSFCH occasion for the SL HARQ feedback.

**[Working assumption confirmation #2]**

3588 (Qualcomm)

Proposal 4. Confirm the following working assumption. Not to support CG retransmission timer in SL-U.

**[Best-match decision for per-flow CAPC]**

3914 (vivo, Lenovo, InterDigital, ASUSTeK, Huawei, HiSilicon)

Proposal 1: For an IDLE/INACTIVE/OOC UE, if the PC5 QoS flow of non-standardized PQI cannot be mapped to an SLRB with the per-bearer CAPC, the UE determines the CAPC of this non-standardized PQI using the CAPC of the standardized PQI or the CAPC of non-standardized PQI configured in SIB/pre-configuration whose PDB is the closest to that of this non-standardized PQI. For a standardized QoS flow, CAPC is directly derived from CAPC table.

Proposal 3: RAN2 to discuss how Proposal 1 and 2 are specified in the specification, e.g. via Stage-2 level descriptions in TS 38.300.

2572 (OPPO, Apple, ZTE, Xiaomi, Qualcomm, MTK)

Proposal 1: RAN2 not pursue specified rule for the ‘best-match’ judgment.

?? For ‘best-match’ issue, UE may determine it based on closest PDB, and capture it in stage-2 spec only. Detailed wording can be discussed in running CR phase.

### 7.15.5 SL-FR2

Includes e.g. identification of RAN2 scopes (including high-level wayforward), updates/details of related RAN1 discussion, etc. Note this agenda item may not be handled during the meeting (e.g. due to lack of time, premature RAN1 progress, etc.)

R2-2302500 Sidelink Operation on FR2 NEC discussion NR\_SL\_enh2

R2-2302623 Discussion on Sidelink Operation on FR2 CATT discussion Rel-18 NR\_SL\_enh2

R2-2302646 Discussion on SL-FR2 impact OPPO discussion Rel-18 NR\_SL\_enh2

R2-2302657 Discussion on SL-FR2 aspects in RAN2 Nokia Germany discussion Rel-18

R2-2302687 Discussion on SL-FR2 Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2302845 SL in FR2 Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2302870 RAN2 aspects to support SL FR2 Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2302968 Discussion on RAN2 aspects of SL-FR2 LG Electronics France discussion NR\_SL\_enh2

R2-2303119 Discussion on SL-FR2 impact to RAN2 Xiaomi discussion

R2-2303180 Initial consideration on sidelink FR2 ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2303234 Discussion on FR2 operation for NR SL-U Lenovo discussion Rel-18

R2-2303378 Discussion on RAN2 work of SL FR2 Apple discussion Rel-18 NR\_SL\_enh2

R2-2303483 RAN2 Aspects of NR Sidelink Operation in FR2 Fraunhofer IIS, Fraunhofer HHI discussion Rel-18

R2-2303574 Discussion on sidelink operation on FR2 Spreadtrum Communications discussion Rel-18

R2-2303589 Discussion on SL FR2 Qualcomm India Pvt Ltd discussion

R2-2303910 Discussion on RAN2 aspects for FR2 licensed spectrum vivo discussion

**[BFR Framework]**

2657 (Nokia):

Proposal 5: RAN2 to discuss the reuse of Uu design as baseline for SL beam failure recovery.

2687of (Huawei):

Proposal 4: For beam failure detection in SL-FR2, RAN 2 can discuss the two alternatives: RX UE-based beam failure detection and TX UE-based beam failure detection.

?? For beam failure detection, reuse Uu design of timer + counter based mechanism as baseline, and R2 further study / wait for RAN1 whether SL beam failure is detected in a

?? Tx or Rx UE based manner

?? Uni-directional or Bi-directional manner

**[BFR Granularity]**

2623 (CATT):

Proposal 2: For NR SL operation on FR2, beam failure should be detected based on SL BWP.

2646 (OPPO):

Proposal 6: RAN2 to discuss SL beam failure is declared/handled per-SL-BWP and per-unicast-link.

?? R2 further study / wait for RAN1 whether SL beam failure is detected per BWP and per-unicast-link

**[BFR mechanism]**

3234 (Lenovo):

Proposal 3: After beam failure detected on sidelink, sidelink BFR request and response is exchanged between peer UEs to determine new beam. FFS for the detail procedure.

2968 (LG):

Proposal 2. RAN2 further study / wait for RAN1 whether to support BFR failure-based SL RLF declaration in SL-FR2.

?? Upon beam failure is detection, R2 further study whether to support

?? BFR signaling exchange between peer UEs

?? RLF declaration due to beam failure.

### 7.15.6 SL CA Enhancements

This work assumes a very high degree of reuse from LTE

R2-2302555 Support of CA for NR Sidelink Mode-2 vivo discussion NR\_SL\_enh2-Core

R2-2302573 Discussion on Carrier Aggregation OPPO discussion Rel-18 NR\_SL\_enh2

R2-2302624 Discussion on NR sidelink CA CATT discussion Rel-18 NR\_SL\_enh2

R2-2302688 Discussion on SL CA operation Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2302847 Aspects of SL CA Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2302874 Discussion on NR SL Carrier Aggregation Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2302920 Carrier Aggregation for NR SL InterDigital discussion Rel-18 NR\_SL\_enh2

R2-2302969 Discussion on RAN2 aspects of SL-CA enhancements LG Electronics France discussion NR\_SL\_enh2

R2-2303181 Initial consideration on sidelink CA ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2303207 On the scope of NR sidelink CA Nokia, Nokia Shanghai Bell discussion

R2-2303219 Discussion on carrier aggregation for NR sidelink Xiaomi discussion

R2-2303379 Initial discussion on Sidelink CA Apple discussion Rel-18 NR\_SL\_enh2

R2-2303482 RAN2 Aspects of NR Sidelink Carrier Aggregation Fraunhofer IIS, Fraunhofer HHI discussion Rel-18

R2-2303590 Discussion on SL CA Qualcomm India Pvt Ltd discussion

**[CA framework]**

3590 (QC)

Proposal 2. Support one independent HARQ entity per carrier used for NR sidelink communication and one transport block is generated per carrier.

Proposal 3. Support that each transport block and its retransmissions are mapped to a single carrier.

**[CA configuration for GC/BC]**

2920 (Interdigital)

Proposal 3: For groupcast/broadcast, the carrier(s) that can be used for transmitting data from a sidelink logical channel are configured by upper layers for the L2 destination.

**[CA duplication #1]**

2874 (Intel)

Proposal 8: Packet duplication for NR sidelink is performed at the PDCP layer. The duplicated PDCP PDUs of the same PDCP entity are submitted to two different RLC entities and associated to two different sidelink logical channels respectively.

Proposal 9: RAN2 agrees that LCP restriction shall be defined such that the duplicated PDCP PDUs of the same PDCP entity are only allowed to be transmitted on different NR sidelink carriers.

2555 (vivo)

Proposal 16: For NR sidelink PDCP duplication, reuse the hard-coded way for paired sidelink LCID to identify duplicated sidelink LCHs (i.e. for a unified design for all Bcast/Gcast/Ucast). The specific SL LCID values occupied are left to Stage-3.

**[CA carrier (re)selection #1]**

2555 (vivo):

Proposal 10: For TX carrier (re)selection triggers in NR sidelink CA, reuse the triggers for TX carrier (re)selection per sidelink process in LTE sidelink CA as follows:

if the resource (re)selection is triggered with the sidelink process.

if there is no configured sidelink grant associated with the sidelink process on any carrier allowed for the STCH as indicated by upper layers.

2573 (OPPO)

Proposal 7 For LCP, only allow the LCHs having a priority whose associated CBR threshold for reselection is no lower than the CBR of the carrier when the carrier is (re-)selected.

**[CA carrier (re)selection #2]**

2573 (OPPO)

Proposal 5 NR SL CA TX carrier (re)selection follows LTE CA solution, i.e., define 1) per-carrier-per-priority-per-CBR threshold for carrier (re)selection, and 2) per-carrier-per-priority-per-CBR threshold for carrier keeping. And final carrier selection is done based on the lowest CBR value.

**[CA configuration for UC]**

3379 (Apple)

Proposal 1: RAN2 discuss the following 2 way-forwards on unicast SL CA:

Alt-1: Send LS to SA2 to check whether service to carrier mapping is applicable to unicast SL CA. Focus on broadcast/groupcast SL CA before SA2 provide response.

Alt-2: RAN2 only study broadcast/groupcast SL CA in Rel-18.