3GPP TSG-RAN WG2 Meeting #119bis electronic R2-22xxxxx  
Online, October 10 – 19, 2022

Agenda Item: 9.5

Source: Session Chair (Samsung)

Title: Report from session on 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

## Approved outgoing LSs

## 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.).

### 5.2.1 General and Stage-2 corrections

Including incoming LSs, rapporteur inputs, etc.

R2-2211144 Reply LS on Pemax,c of S-SSB transmission (R1-2210549; contact: vivo) RAN1 LS in Rel-16 5G\_V2X\_NRSL-Core To:RAN4 Cc:RAN2

* Noted.

### 5.2.2 Control plane corrections

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

LCID assignment (including P5 in R2-2211217):

R2-2211635 Revised Summary of [Post119-e][512][V2X/SL] Remaining Corrections (InterDigital) InterDigital discussion Rel-17 NR\_SL\_enh-Core

Proposal 2: Agree to first change in R2-2208350 and further discuss handling of 2nd change as part of an CR generated by the email rapporteur.

* Agreed.

R2-2211636 Correction on LCID Assignment for SL LCH InterDigital, ASUSTek CR Rel-16 38.331 16.10.0 3531 1 F NR\_SL\_enh-Core R2-2210259

R2-2211637 Correction on LCID Assignment for SL LCH InterDigital, ASUSTek CR Rel-17 38.331 17.2.0 3532 1 A NR\_SL\_enh-Core R2-2210260

* Agreed.

Exceptional pool for OOC (including P1 in R2-1112439):

R2-2211691 Correction on exceptional pool usage for OOC UE Apple, OPPO CR Rel-16 38.331 16.10.0 3631 - F 5G\_V2X\_NRSL-Core

R2-2211692 Correction on exceptional pool usage for OOC UE Apple, OPPO CR Rel-17 38.331 17.2.0 3632 - A 5G\_V2X\_NRSL-Core

* Exceptional pool is not used for OOC UE. Whether/how to capture it into specification will be discussed as part of RRC email discussion [501].

[Huawei]: Would like to have more time to check the field description. [Ericsson]: Do not see any need of change. Nothing is really broken. [Apple]: Don’t see any backward compatibility issue and there is no need to perform CBR measurement for exceptional pool. [OPPO, Intel]: If we don’t approve the CR, we can at least capture exceptional pool is not used for OOC in the session minutes. [Vivo]: Don’t like just capturing it in the minutes, which is not aligned with current specification. We can continue the discussion as part of RRC email discussion [501].

Pool index in DCI:

R2-2211218 Discussion on resource pool index OPPO discussion Rel-16 5G\_V2X\_NRSL-Core

(modified) Proposal 1 R2 understands that the resource pool index in DCI format 3\_0 is defined as the value is indexed sequentially from 0 in the same ascending order (based on the value of sl-ResourcePoolID-r16) of pools configured in sl-TxPoolScheduling.

* Agreed.

[Vivo]: This issue is related to RAN1 discussion for R17 discovery last meeting. Ok with the change but wonder whether RAN2 or RAN1 will change the specification. For example, for BWP index case, RAN1 specifies the related parts. [Huawei]: Doubt whether it is really essential change for Rel-16. Prefer having a change in Rel-17 if needed. [Qualcomm]: Share the view with Huawei

Miscellaneous corrections:

R2-2211563 Miscellaneous corrections on 38.331 Huawei, HiSilicon CR Rel-16 38.331 16.10.0 3618 - F 5G\_V2X\_NRSL-Core

R2-2211564 Miscellaneous corrections on 38.331 Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3619 - A 5G\_V2X\_NRSL-Core

R2-2212131 Correction on RLC mode reporting CATT CR Rel-16 38.331 16.10.0 3673 - F 5G\_V2X\_NRSL-Core

R2-2212132 Correction on RLC more reporting CATT CR Rel-17 38.331 17.2.0 3674 - A 5G\_V2X\_NRSL-Core

R2-2212723 Correction on RRC for NR Sidelink CATT CR Rel-16 38.331 16.10.0 3727 - F 5G\_V2X\_NRSL-Core

R2-2212724 Correction on RRC for NR Sidelink CATT CR Rel-17 38.331 17.2.0 3728 - A 5G\_V2X\_NRSL-Core

* [AT120][501][V2X/SL] R16 RRC corrections (Huawei)

**Scope:** Discuss corrections (including need of corrections) in R2-2211563/R2-2211564, R2-2212131/R2-2212132, and R2-2212723/R2-2212724. Merge agreeable corrections.

**Intended outcome:** 38.331 CR in R2-2213156/R2-2213157, discussion summary in R2-2213158 (if needed).

**Deadline:** Comeback at 11/17 CB session

### 5.2.3 User plane corrections

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

R2-2211647 Summary on user plane corrections LG Electronics France discussion 5G\_V2X\_NRSL-Core Late

R2-2211240 Correction of MinSubChannelNumPSSCH and MaxSubchannelNumPSSCH OPPO CR Rel-16 38.321 16.10.0 1449 - F 5G\_V2X\_NRSL-Core

R2-2211269 Correction of MinSubChannelNumPSSCH and MaxSubchannelNumPSSCH OPPO CR Rel-17 38.321 17.2.0 1453 - A 5G\_V2X\_NRSL-Core

R2-2211395 Correction on exceptional resource pool usage OPPO CR Rel-16 38.321 16.10.0 1457 - F 5G\_V2X\_NRSL-Core

R2-2211396 Correction on exceptional resource pool usage OPPO CR Rel-17 38.321 17.2.0 1458 - A 5G\_V2X\_NRSL-Core

R2-2211561 Clarification on UE maximum transmission number for mode 2 Huawei, HiSilicon CR Rel-16 38.321 16.10.0 1464 - F 5G\_V2X\_NRSL-Core

R2-2211562 Clarification on UE maximum transmission number for mode 2 Huawei, HiSilicon CR Rel-17 38.321 17.2.0 1465 - A 5G\_V2X\_NRSL-Core

R2-2211942 Discussion on UL skipping for NR sidelink Xiaomi discussion

R2-2211943 Correction on UL skipping for NR sidelink Xiaomi CR Rel-16 38.321 16.10.0 1476 - F 5G\_V2X\_NRSL-Core

R2-2211944 Correction on UL skipping for NR sidelink Xiaomi CR Rel-17 38.321 17.2.0 1477 - A 5G\_V2X\_NRSL-Core

R2-2211945 Correction on the clear of dynamic sidelink grant for NR sidelink Xiaomi CR Rel-16 38.321 16.10.0 1478 - F 5G\_V2X\_NRSL-Core

R2-2211946 Correction on the clear of dynamic sidelink grant for NR sidelink Xiaomi CR Rel-17 38.321 17.2.0 1479 - A 5G\_V2X\_NRSL-Core

* [AT120][502][V2X/SL] R16 MAC corrections (LG)

**Scope:** Discuss corrections (including need of corrections) in R2-2211240/R2-2211269, R2-2211395/R2-2211396, R2-2211561/R2-2211562, R2-2211942/R2-2211943/R2-2211944, and R2-2211945/R2-2211946. Merge agreeable corrections.

**Intended outcome:** 38.321 CR in R2-2213159/R2-2213160, discussion summary in R2-2213161 (if needed).

**Deadline:** Comeback at 11/17 CB session

R2-2212133 Correction on MAC for NR Sidelink CATT CR Rel-16 38.321 16.10.0 1482 - F 5G\_V2X\_NRSL-Core Withdrawn

R2-2212134 Correction on MAC for NR Sidelink CATT CR Rel-17 38.321 17.2.0 1483 - A 5G\_V2X\_NRSL-Core Withdrawn

## 6.15 NR Sidelink enhancements

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

Tdoc Limitation: 3 tdocs

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

### 6.15.0 In-principle agreed CRs

CRs AIP from RAN2#119bis-e.

R2-2211634 Correction on SL DRX Offset Calculation InterDigital, ASUSTek CR Rel-17 38.321 17.2.0 1428 1 F NR\_SL\_enh-Core R2-2210261

* Agreed.

R2-2211644 38.321 corrections for SL enhancement LG Electronics France CR Rel-17 38.321 17.2.0 1445 1 F NR\_SL\_enh-Core R2-2210932

* Agreed.

[LG]: Note there is some editorial change from AIP CR. [Apple]: Have new CR proposal which may collide with this one. [LG]: We can agree with this CR first since it’s AIP CR. Then Apple CR can be handled in separate. [Session chair]: If Apple CR is agreed, the related part may need to be updated to avoid collision between CRs.

R2-2211892 Rapporteur CR on TS 38.331 for SL enhancements Huawei, HiSilicon (Rapporteur) CR Rel-17 38.331 17.2.0 3541 2 F NR\_SL\_enh-Core R2-2210930

* Agreed.

### 6.15.1 Organizational

Including incoming LSs, rapporteur inputs, stage 2 corrections, etc.

R2-2211126 Reply LS on Tx profile (C1-226055; contact: OPPO) CT1 LS in Rel-17 eV2XARC\_Ph2, 5G\_ProSe, NR\_SL\_enh-Core To:RAN2

* Noted

R2-2211146 Reply LS to RAN2 on IUC with Non-preferred Resource Set (R1-2210582; contact: Apple) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2

* Noted.

R2-2211155 LS on PDCCH repetition for sidelink (R1-2210735; contact: LGE) RAN1 LS in Rel-17 NR\_SL\_enh-Core To:RAN2

* Noted.

R2-2211948 Miscellaneous corrections on TS 38.300 for NR sidelink Xiaomi CR Rel-17 38.300 17.2.0 0583 - F NR\_SL\_enh-Core

R2-2211622 Corrections on TS38.300 for Rel-17 sidelink enhancements CATT CR Rel-17 38.300 17.2.0 0578 - F NR\_SL\_enh-Core

R2-2212717 Miscellaneous corrections to SL DRX vivo CR Rel-17 38.300 17.2.0 0590 - F NR\_SL\_enh-Core

R2-2211565 Clarification on the condition to use SL DRX Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

* [AT120][503][V2X/SL] R17 38.300 corrections (Xiaomi)

**Scope:** Discuss corrections (including need of corrections) in R2-2211948, R2-2211622, R2-2212717, and R2-2211565. Merge agreeable corrections.

**Intended outcome:** 38.300 CR in R2-2213162, discussion summary in R2-2213163 (if needed).

**Deadline:** Comeback at 11/17 CB session

### 6.15.2 Control plane corrections

TX profile:

R2-2211215 Discussion on left issues on Tx Profile OPPO discussion Rel-17 NR\_SL\_enh-Core

Proposal 1 Dummify ‘sl-TxProfileList’.

* Noted.

[Vivo]: NR TX profile is directly given by upper layer. However, the list of TX profiles still can provide allowed TX profiles which can be used in AS point of view. Without dummying it, we can just revise the field description (although no strong view). Ok to follow majority companies’ views. [CATT]: Agree with the proposal. [Ericsson]: Agree with Vivo. [Huawei]: CT1 indicated there is no problem they observed. We prefer modifying the field description. Detailed wording can be discussed offline. [OPPO]: Vivo’s suggestion is something new to R17 (i.e. to use TX profiles in AS layer). [ZTE]: No need of change at all (including the field description). Nothing is really broken. [Intel]: Agree with the proposal. [Apple]: Prefer fixing it w/o dummying file. Note even after we make dummy for it, it is still in preconfiguration IE. [Ericsson, Nokia]: Prefer not making it dummy. [OPPO]: Want to have last chance in email discussion. [Ericsson]: Not prefer having email discussion in the new phase (f2f meeting). We may just note it.

R2-2211216 Correction for Tx Profile OPPO CR Rel-17 38.331 17.2.0 3572 - F NR\_SL\_enh-Core

R2-2211623 Further Discussion on Tx Profile CATT discussion Rel-17 NR\_SL\_enh-Core

No PDCCH receptitions for SL (including P1 in R2-2211217, P2 in R2-2211852, P2 in R2-2212716)

R2-2211624 Correction on PDCCH repetition CATT CR Rel-17 38.331 17.2.0 3622 - F NR\_SL\_enh-Core

* Included in RRC email discussion [AT120][504]

SL UE Information including GC/BC on/off indication (including P3 in R2-2211217, P2 in R2-2211871, P2 in R2-2212439, P2 in R2-2211893, P1 R2-2212716:

Q1: SL UE Information including GC/BC on/off indication is limited to mode 1?

* SL UE information including GC/BC on/off indication is limited to mode 1.

[Huawei]: In the procedure text, mode 1 restriction was already included. Think this information is also useful for mode 2. [Session chair]: What’s example to use this information for mode2? [Qualcomm]: Don’t see any need to use this information for mode 2. [Ericsson, Intel]: Agree with Qualcomm.

Whether SL DRX can be supported based on pre-configuration when gNB does not support SL DRX (including P2 in R2-11217, P3 in R2-2212439, and P1 in R2-2211871)

Proposal 2: RAN2 to confirm UE behavior is not to perform SL DRX if gNB is incapable of SL DRX. No spec change needed.

* Agreed. Whether/how to capture this agreement is discussed as part of email discussion [504].

[Xiaomi]: With the proposal 2, it is good to specify UE behavior clearly.

R2-2211217 Discussion on left issues on control plane procedure OPPO discussion Rel-17 NR\_SL\_enh-Core

R2-2211852 Correction on SUI initiation and PDCCH repetition ZTE Corporation, Sanechips CR Rel-17 38.331 17.2.0 3650 - F NR\_SL\_enh-Core

R2-2211501 Corrections to 38.331 on IUC parameters Ericsson CR Rel-17 38.331 17.2.0 3605 - F NR\_SL\_enh-Core

R2-2211893 Miscellaneous corrections on TS 38.331 for SL enhancements Huawei, HiSilicon CR Rel-17 38.331 17.2.0 3656 - F NR\_SL\_enh-Core

R2-2212716 Miscellaneous RRC corrections for SL enhancement vivo CR Rel-17 38.331 17.2.0 3725 - F NR\_SL\_enh-Core

* [AT120][504][V2X/SL] R17 RRC corrections (Huawei)

**Scope:** Discuss other corrections (including need of corrections) that were not handled in separate from R2-2211217, R2-2211852, R2-2211501, R2-2211893, R2-2212716. Merge agreeable corrections.

**Intended outcome:** 38.331 CR in R2-2213164, discussion summary in R2-2213165 (if needed)

**Deadline:** Comeback at 11/17 CB session

R2-2211871 Correction on 38.331 Xiaomi CR Rel-17 38.331 17.2.0 3652 - F NR\_SL\_enh-Core

R2-2212439 Remaining discussion on control plane Samsung Research America discussion Rel-17 NR\_SL\_enh-Core

### 6.15.3 User plane corrections

Non-preferred resource set:

Q1: Whether MAC performs resource exclusion when it is received in random resource selection?

* No MAC based resource exclusion unless we get a request from RAN1.

[ZTE]: Don’t need to do anything in MAC since PHY performs resource exclusion if needed. [OPPO, Xiaomi]: No resource exclusion in MAC. [Nokia]: Believe MAC should perform resource exclusion. [Qualcomm]: RAN1 couldn’t conclude it but RAN1 indicated the scenario exists. Since MAC performs final resource selection, prefer having MAC based resource exclusion. [Ericsson]: Agree with Nokia and Qualcomm. [LG, IDC, Apple, MediaTek, Vivo, Intel, CATT, Lenovo]: Agree with ZTE

Q2: Whether MAC indicates non-preferred resource set to PHY?

Q3: Whether there is any need to change MAC spec?

[LG]: Shouldn’t we capture “UE performs random resource selection when non-preferred resource set is received during random resource selection or the UE has no sensing result.”? [Apple]: Even with full sensing, the UE may not have sensing result when it receives non-preferred resource set. Think in this case. MAC still needs to provide this information to PHY. [Ericsson]: Agree with Apple.

* MAC performs random resource selection without considering non-preferred resource set during random resource selection. FFS if MAC still needs to provide this information to PHY when full sensing result is not available (to be handled as part of MAC email discussion [505]).
* Other changes from contributions are discussed as part of MAC email discussion [505]

R2-2211693 Discussion on RAN1 Reply LS on IUC with non-preferred resource Apple discussion NR\_SL\_enh-Core

R2-2211238 Discussion on left issues on user plane procedure OPPO discussion Rel-17 NR\_SL\_enh-Core (P1 and P2)

R2-2212441 IUC with non-preferred resource set Samsung Research America discussion Rel-17 NR\_SL\_enh-Core

R2-2211500 discussion on RAN1 LS R1-2210582 Ericsson discussion Rel-17 NR\_SL\_enh-Core

R2-2212400 On resource exclusion for random resource selection Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

R2-2212693 Discussion on remaining issues Qualcomm India Pvt Ltd discussion

Default CBR parameters (including P6 in R2-2211238, P3 in R2-2212716, and P3 in R2-2211947):

Q1: Whether default CBR parameters are applied to normal pool when full sensing result is used and available?

[ZTE]: CBR measurement and full sensing are specified in RAN1 in separate, so the case is valid. [Session chair]: Check companies’ views.

The case (CBR measurement is not available although full sensing result is available) is valid:

* Ericsson, Nokia, Vivo, Xiaomi, ZTE, Intel

The case is not valid (i.e. default CBR parameters are not used when full sensing result is available):

* OPPO, LG, Samsung, MediaTek, Huawei
* [AT120][506][V2X/SL] LS to RAN1 (OPPO)

**Scope:** Ask whether default CBR is used or not when full sensing result is available. We can add further background explanation.

**Intended outcome:** LS in R2-2213168

**Deadline:** Comeback at 11/17 CB session

Q2: Whether to update RRC/MAC spec to capture case 1, 2a and 2b?

R2-2212401 CBR measurement availability for full sensing Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh-Core

R2-2212440 Default CBR parameters Samsung Research America discussion Rel-17 NR\_SL\_enh-Core

IUC for GC/BC (including P4 in R2-2211238 and P2 in R2-2211947):

From R2-2211238:

Observation 3 RAN1 didn’t make a final conclusion to support groupcast/broadcast in IUC.

Observation 4 There are technical open issues to support GC/BC in IUC from RAN2 perspective, e.g., the source and destination L2 ID of the IUC MAC CE.

Proposal 4 RAN2 confirm that GC/BC in IUC is not supported in this release from RAN2 perspective

* We can wait for RAN1, but RAN2 may need further discussion in RAN2 point of view even if RAN1 decides to support it.

[LG]: RAN2 discussed this issue last meeting and it was concluded RAN1 directly can discuss it. So we should wait for RAN1. [Vivo]: LG’s right, but at the same time RAN1 does not plan to continue this discussion. [LG]: LG RAN1 prepares RAN1 discussion. [Xiaomi, Intel, Lenovo, Ericsson]: Support the proposal. [Nokia, IDC]: Agree with LG.

IUC with SL DRX

R2-2211567 Correction on SL DRX when IUC is configured Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

Proposal 1: RAN2 to agree to adopt solution 1 to ensure UE-A can receive the SL-SCH data transmission from UE-B, when UE-A is configured with SL DRX and UE-A provides preferred resource set to UE-B.

 Solution 1: UE-A regards the time of preferred resource set as its active time.

 Solution 2: UE-A determines preferred resource set within its active time.

R2-2211808 Corrections on SL enhancements for IUC ASUSTeK CR Rel-17 38.321 17.2.0 1472 - F NR\_SL\_enh-Core (P1)

[Apple]: Don’t see the coexistence (a UE is using IUC and SL DRX at the same time). Also RAN2 already agreed IUC with SL DRX is deprioritized in Rel-17. [Qualcomm]: It’s too late to optimize something we agreed to deprioritize. Also RAN1 does not consider IUE with SL DRX. [LG, OPPO, Xiaomi, Nokia, Ericsson, Intel, CATT, IDC, ZTE]: Agree with Apple and Qualcomm,

* Optimization for IUC with SL DRX is not pursued.

R2-2211646 User plane corrections on NR Sidelink enhancements LG Electronics France CR Rel-17 38.321 17.2.0 1467 - F NR\_SL\_enh-Core Late

R2-2211638 Discussion on resource (re-)selection for SL DRX SHARP Corporation discussion

R2-2211639 Correction on resource (re-)selection for SL DRX SHARP Corporation CR Rel-17 38.321 17.2.0 1466 - F NR\_SL\_enh-Core

R2-2211809 Discussion on priority setting for IUC MAC CEs ASUSTeK, vivo discussion Rel-17 38.321 NR\_SL\_enh-Core

R2-2212402 Indication to lower layers for IUC information reporting Nokia, Nokia Shanghai Bell draftCR Rel-17 38.321 17.2.0 F NR\_SL\_enh-Core

R2-2212718 Correction on priority setting for IUC MAC CE vivo, Apple, ASUSTeK CR Rel-17 38.321 17.2.0 1494 - F NR\_SL\_enh-Core

R2-2212923 Discussion on enabling of scheme1 on MAC ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core

R2-2211566 Clarification on PSFCH reception when SL DRX is configured Huawei, HiSilicon discussion Rel-17 NR\_SL\_enh-Core

R2-2211239 Miscellaneous corrections on TS 38.321 for SL enhancements OPPO CR Rel-17 38.321 17.2.0 1448 - F NR\_SL\_enh-Core

R2-2211502 Corrections to 38.321 on IUC trigger Ericsson CR Rel-17 38.321 17.2.0 1462 - F NR\_SL\_enh-Core

R2-2211694 Correction on the handling of IUC with non-preferred resource set Apple CR Rel-17 38.321 17.2.0 1469 - F NR\_SL\_enh-Core

R2-2211854 Correction on HARQ entity procedure ZTE Corporation, Sanechips CR Rel-17 38.321 17.2.0 1473 - F NR\_SL\_enh-Core

R2-2211947 Miscellaneous corrections on TS 38.321 for NR sidelink Xiaomi CR Rel-17 38.321 17.2.0 1480 - F NR\_SL\_enh-Core

* [AT120][505][V2X/SL] R17 MAC corrections (LG)

**Scope:** Discuss other corrections (including need of corrections) that were not handled in R2-2211646, R2-2211638, R2-2211639, R2-2211809, R2-2212402, R2-2212718, R2-2212923, R2-2211566, R2-2211239, R2-2211502, R2-2211694, R2-2211854, R2-2211947, P3 in R2-2211238, and P2 in R2-2211808. Merge agreeable corrections.

**Intended outcome:** 38.331 CR in R2-2213166, discussion summary in R2-2213167 (if needed)

**Deadline:** Comeback at 11/17 CB session

R2-2211853 Discussion on enabling of scheme1 on MAC ZTE Corporation, Sanechips discussion Rel-17 NR\_SL\_enh-Core Withdrawn

## 8.15 NR Sidelink evolution

(NR\_SL\_enh2; leading WG: RAN1; REL-18; WID: RP-221938)

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

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

### 8.15.1 Organizational

Incoming LS and rapporteur inputs.

R2-2211209 Work plan of R18 SL-Evo OPPO, LG Work Plan Rel-18 NR\_SL\_enh2

=> Noted.

### 8.15.2 SL-U: RAN2 scope

Including further discussion/details on CAPC and (consistent) LBT failure, other impacts to MAC (resource allocation, DRX operation, etc.) and any other RAN2 scopes.

SL CAPC mapping table:

R2-2211236 Discussion on CAPC definition in SL-U OPPO discussion Rel-18 NR\_SL\_enh2

Proposal 1 RAN2 to confirm the WA as “PQI is used to determine the CAPC mapping as in NR-U” as baseline.

* Agreed.

Proposal 3 R2 discusses mapping PQI 90/91/92/93/21/22/23/55/56/57/58 to CAPC priority class 1. FFS on other SL CAPC mapping criterion.

* Working assumption: mapping PQI 90/91/92/93/21/22/23/55/56/57/58 to CAPC priority class 1. FFS on other SL CAPC mapping criterion.

Proposal 4 R2 discusses mapping PQI 59/61 to CAPC priority class 3.

* Working assumption: mapping PQI 59/61 to CAPC priority class 3.

Proposal 5 R2 discusses mapping PQI 25 to CAPC priority class 2.

* Working assumption: mapping PQI 25 to CAPC priority class 2.

Proposal 6 R2 discusses mapping PQI 24/26/60 to CAPC priority class 1 or CAPC priority class 2.

* Working assumption: PQI 24/26/60 to CAPC priority class 1

[OPPO]: PQI 24/26/60 are for mission critical service although PDB is not low enough for class 1. Note 5QI for mission critical service belongs to CAPC class 1 in NR-U. [Lenovo, Intel, CATT]: Mission critical service should be mapped to SL CAPC class 1.

R2-2211684 Further discussion on control plane aspects of SL-U Apple discussion NR\_SL\_enh2

Proposal 1: The WA of PQI based CAPC mapping can be confirmed if the following two issue scenarios are well addressed:

1) How the UE determines CAPC value for a SL DRB if gNB (pre)configuration of CAPC for the DRB is not available (e.g. non-standardized PQI for IDLE/INACTIVE/OOC UE)

2) How to avoid the conflict between L1 priority based procedure in PHY layer (e.g. resource selection and pre-emption) and CAPC

Proposal 4: To avoid the conflict between L1 priority based procedures (e.g. resource selection and pre-emption) and CAPC, default priority level of PQI is also used as one criterion to determine the CAPC mapping.

* Noted. Companies think until next meeting.

[Intel]: Don’t think we need to consider default priority level of PQI to determine CAPC. [Ericsson]: There is no conflict between L1 priority and CAPC since L1 priority is used for resource (re)selection while CAPC is used for channel access. [Apple]: In the end, two procedures are related to which TB can be sent first. For the same purpose, two different factors can collide. [Vivo, Nokia, OPPO]: Agree with Ericsson. [Xiaomi]: Support the proposal. Example is PDB is low but the default priority level is lowest. Think in the case, the corresponding CAPC should not be the highest CAPC. [IDC]: Feel sympathy for the proposal. [Session chair]: if we consider default priority, is it {PDB or default priority level} or {PDB and default priority level}? [Apple]: it should be {PDB or default priority level}. [Qualcomm]: Agree with Xiaomi. [Xiaomi]: Consider {PDB and default priority level}. [Apple]: With {PDB or default priority level}, do not think it collides against working assumption we made. [ZTE]: Feel sympathy with proposal. It can be more future proof.

SL CAPC value when SL LCH(s) and/or SL MAC CE are muxed:

R2-2211508 CAPC table and MAC multiplex rules Ericsson discussion Rel-18 NR\_SL\_enh2

Proposal 3 If PQI-based CAPC mapping is agreed, as in NR-U, the lowest priority CAPC of the logical channel(s) with MAC SDU multiplexed in the TB is used regardless of whether the TB also contains SL MAC CEs in addition to MAC SDUs.

* Working assumption: If PQI-based CAPC mapping is agreed, as in NR-U, the lowest priority CAPC of the logical channel(s) with MAC SDU multiplexed in the TB is used regardless of whether the TB also contains SL MAC CEs in addition to MAC SDUs.

[Lenovo]: With proposal 3, we may not be able to transmit TB in time. [Qualcomm]: If CSI report is multiplexed with lower CAPC data, CSI report cannot be sent in time. [Lenovo]: SL has different characteristics compared to NR-U. in NR-U, NW controls almost everything, but in SL, the UE can select, e.g. MCS, for mode 1. For mode 2, whole resource allocation is done by UE itself. [IDC]: We can inherit NR-U for mode 1, but for mode 2 we should consider something different. [LG, Nokia]: Agree with Lenovo/Qualcomm. [Ericsson]: We should make sure fairness issue (not only for performance aspect). [OPPO]: Agree with Ericsson. [Huawei]: We should at least prioritize MAC CE. [Session chair]: Note a requirement from ETSI EN 301 893 “The Channel Access Engine may start transmissions belonging to the corresponding or higher Priority Classes, on one or more Operating Channels.” [Apple, Xiaomi, ZTE, OPPO, MediaTek]: Share the view with Ericsson.

R2-2212122 Further details on the channel access priority for NR SL-U Lenovo discussion Rel-18 NR\_SL\_enh2-Core

Proposal 3: RAN2 should discuss the CAPC selection behaviour for cases that CAPC is not indicated in a DCI and the SL TB doesn’t contain only SL MAC CE(s) or doesn’t contain SCCH/SBCCH SDU(s). It suggested that RAN2 agrees on one of the above two options.

(modified) Proposal 4: The highest priority SL CAPC is used for SBCCH SDU transmission (if SL CAPC is applied to SBCCH SDU).

* Agreed.

[Huawei]: Supports the proposal, but it’s not multiplexing issue. [Qualcomm]: It’s not related to whether SL CAPC is included in DCI or not, it is based on SL synchronization configuration. [Apple]: It would be good to leave this discussion to RAN1. SBCCH SDU is multiplexed with SSB, so it should be same priority with SSB. [LG, OPPO, Intel, MediaTek, Ericsson, CATT, ZTE]: Agree with Apple, it should be left to RAN1. [Lenovo]: RAN1 discussed but couldn’t conclude. Understand it’s up to RAN2. [Vivo, IDC]: Share Lenovo’s understanding. RAN2 is responsible to suggest CAPC priority for SL-MIB. [Qualcomm]: Understand it was discussed in RAN1 but focused on LBT aspect. For CAPC priority, it is up to RAN2. Prefer RAN2 taking an action. [Vivo]: Agree with Qualcomm observation. [OPPO]: RAN1 will discuss this issue this meeting. [Ericsson]: CAPC is only used for type 1 LBT so proposal should be restricted to type 1 LBT. [LG]: Understand CAPC is also used for type 2 LBT for COT. [ZTE]: We need to send LS to RAN1.

SL CAPC value for PSFCH

R2-2211628 CAPC and COT sharing for SL Unlicensed InterDigital discussion Rel-18 NR\_SL\_enh2

Proposal 6: Standalone PSFCH transmissions use the lowest (highest priority) CAPC value.

R2-2212409 On channel access priority class and HARQ feedback Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_SL\_enh2 R2-2210357

Proposal 1: The choice of CAPC for transmitting PSFCH can be associated with the L1 priority present in the SCI of the associated PSCCH/PSSCH transmission, in case Type 1 LBT is performed for transmitting PSFCH.

* We leave it to RAN1.

[OPPO, MediaTek, LG]: Should we rely on RAN1 since PSFCH is different from SBCCH? [Ericsson]: The proposal depends on other discussion (other criterion for CAPC mapping). [ZTE]: CAPC for PSFCH was also discussed in RAN1, but not concluded. Eventually RAN2 needs to make a decision and we send LS to RAN1 for confirmation. [Apple, Intel]: Share the view with OPPO. We should wait for RAN1 inputs on this issue more. [Nokia]: Ok to ask RAN1.

* [AT120][507][V2X/SL] LS to RAN1 (IDC)

**Scope:** Inform RAN2 decision and discussion regarding SL CAPC (including SBCCH and PSFCH).

**Intended outcome:** LS in R2-2213169

**Deadline:** Comeback at 11/17 CB session

Handling of RRC inactive/idle/OOC UE

R2-2211321 Further discussion on SL CAPC vivo discussion

Proposal 5 For an IDLE/INACTIVE/OOC UE, if the QoS flow of non-standardized PQI can be mapped to a non-default SLRB, the UE determines the CAPC of this non-standardized PQI using the CAPC of this SLRB.

* Agreed.

Proposal 7 For an IDLE/INACTIVE/OOC UE, if the QoS flow of non-standardized PQI cannot be mapped to a non-default SLRB , the UE determines the CAPC of current non-standardized PQI by down-selecting from one of the following options:

- (modified) option A: use the CAPC of the standardized PQI or the CAPC of non-standardized PQI configured in SIB/pre-configuration which best matches the QoS characteristics of the current non-standardized PQI based on one or more QoS characteristics;

- option B: use default CAPC value, e.g. the CAPC of default SLRB if it is confirmed in proposal 6 that gNB configures CAPC for default SLRB, or a default CAPC which is pre-defined or configured by SIB/pre-configuration for this case;

* Working assumption: option A: use the CAPC of the standardized PQI or the CAPC of non-standardized PQI configured in SIB/pre-configuration which best matches the QoS characteristics of the current non-standardized PQI based on one or more QoS characteristics

[Huawei, Apple, Intel, CATT, IDC, MediaTek, LG, Qualcomm, Ericsson, Lenovo]: Prefer option A, option B has too much restriction. Non-standardized PQI is various and mapping to single default CAPC is quite challengeable. [ZTE, OPPO]: Prefer option B. Logical channel priority can be (pre)configured in R16/17 and this CAPC priority is similar to that. [Vivo]: In NR-U, the UE never determines CAPC value. In that point of view, option B is more aligned with NR-U. [Qualcomm]: Prefer using same principle to UE. [Vivo]: With option A, we need to discuss how to determine it otherwise different UE has different behaviours. [OPPO]: Option-A is ok if it should be left to UE implementation (possibly with consideration of CAPC mapping table).

SL consistent LBT failure

R2-2211626 Further Discussion on SL-specific Consistent LBT failure CATT discussion Rel-18 NR\_SL\_enh2

Proposal 1: SL-specific consistent LBT failure detection is not relevant to cast type/DST/unicast link.

R2-2211629 Consistent LBT Failure Detection and Recovery InterDigital discussion Rel-18 NR\_SL\_enh2

Proposal 4: As a working assumption, SL specific consistent LBT failure detection per unicast link is supported in Rel18, and this can be confirmed if FR2 is included in Rel18 work scope for SL Evolution.

* Working assumption: SL-specific consistent LBT failure detection is not relevant to cast type/DST/unicast link

[Lenovo, Xiaomi]: Agree with the IDC proposal. [Vivo]: With IDC proposal, PHY needs to indicate LBT failure indication with additional information (e.g. destination id) [ZTE]: Prefer CATT proposal. [Apple, Ericsson, MediaTek]: Agree with Vivo. [Intel]: Do we need to wait for RAN1 reply LS? [CATT]: The granularity we asked was on radio resource (not on cast type/DST/unicast link). [Lenovo]: PHY will indicate LBT failure indication for a given resource. No additional information is required since MAC can know what destination is reserved for that resource. [Qualcomm]: With directional LBT failure detection, it will be very complicated with huge RAN1 impacts. [Apple]: FR2 is for licensed band, we’re talking about SL-U. Why they should be linked together? [Vivo]: Agree with Apple.

Mode 2 UE in RRC connected

R2-2211950 Discussion on LBT for sidelink operation on unlicensed spectrum Xiaomi discussion

Proposal 5: In SL-U, support the mechanism that a mode-2 UE in RRC\_CONNECTED can indicate the SL-specific consistent LBT failure to the gNB.

* Agreed.

[Vivo]: Support the proposal since resource pool for mode 2 is assigned by gNB. [LG, OPPO, Apple, MediaTek, Ericsson, Huawei, IDC, Intel]: Support the proposal. [ZTE]: We sent LS to RAN1 asking granularity of LBT failure. If it is per SL BW, there is nothing to do for resource pool reconfiguration. [Apple]: RAN2 decided reporting for mode 1 last meeting although the same issue (if it is per SL BW, …) can be applied to mode 1. Understand it is still helpful even in that case. [Ericsson]: Consider reporting is helpful regardless of granularity of LBT failure. [Qualcomm]: Ok with proposal, but want to define it as optional to UE. [Vivo]: UE autonomous recovery is related to LS, not this one. [Lenovo]: What about the case when RRC connected UE uses resource pool in SIB? [ZTE]: For RRC connected UE, it uses only dedicated resource pool.

SL DRX impact (including P9 in R2-2211626, CATT)

R2-2211554 Discussion on LBT for SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

Proposal 9: If there is one PSFCH resource for a PSSCH, start sl-drx-HARQ-RTT-Timer for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH resource when the SL HARQ feedback is not transmitted due to the LBT failure.

* Agreed.

Proposal 10: If a PSSCH associates with multiple PSFCH resources and LBT failure happens in all the PSFCH resources, RX UE starts sl-drx-HARQ-RTT-Timer for the corresponding Sidelink process in the first slot after the end of the last PSFCH resource for the SL HARQ feedback.

* Wait for more RAN1 progress for P10.

[Ericsson, OPPO, CATT, Lenovo, Apple]: It is still under RAN1 discussion. We should wait. [LG]: Support P10. [MediaTek]: RAN2 can agree with P10 with a condition of RAN1 decision. [Qualcomm]: It is very premature even with the condition.

P9 in R2-2211626 (CATT)

Proposal 9: RAN2 to discuss whether SL DRX active time can be extended in case of SL LBT failure in SL-U.

* Noted.

[Apple]: It was discussed in NR-U and not agreed. We can follow same principle. [Lenovo]: Agree with Apple. In addition, it brings more difficulty for synchronization between TX and RX UEs. [Vivo, IDC, OPPO]: Agree with Lenovo. [Ericsson]: Prefer not to making a decision now since COT sharing may be also related, which is new compared to NR-U. [IDC]: Even with COT sharing, it’s not clear how RX and TX UEs can be synchronized. [Qualcomm]: Not only for COT sharing case, but also for consecutive slots, it’s early to make a decision.

CG impact

R2-2211507 Aspects of channel access mechanisms Ericsson discussion Rel-18 NR\_SL\_enh2

Proposal 15 RAN2 waits for RAN1 decision on how to support consecutive PSSCHs for CG based SL transmissions.

Proposal 16 RAN2 to down-prioritize autonomous retransmission for SL-U (i.e., UE autonomously triggered retransmission using CG based one expiration of a timer) in R18.

Proposal 17 Introduce asynchronous HARQ to CG for SL-U.

COT Sharing

R2-2211640 Discussion on RAN2 aspects in SL-U LG Electronics France discussion Rel-18 NR\_SL\_enh2

Proposal 5. RAN2 can check LCP impact based on the RAN1 agreement (i.e., “A responding SL UE can utilize a COT shared by a COT initiating UE when the responding SL UE is a target receiver of the at least COT initiating UE’s PSSCH data transmission in the COT.”).

Proposal 6. RAN2 can check impact of sidelink grant generation based on the RAN1 agreement (i.e., “A responding SL UE can utilize a COT shared by a COT initiating UE when the responding SL UE is a target receiver of the at least COT initiating UE’s PSSCH data transmission in the COT.”).

SL RLF impact

R2-2212924 Discussion on MAC related aspects for SL-U ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

Proposal 5 RAN2 is suggested to study if enhancements to the SL RLF procedure is needed due to LBT failure.

R2-2211237 Discussion on LBT impact in SL-U OPPO discussion Rel-18 NR\_SL\_enh2

R2-2211320 Further discussion on RAN2 impact due to SL LBT vivo discussion

R2-2211507 Aspects of channel access mechanisms Ericsson discussion Rel-18 NR\_SL\_enh2

R2-2211553 Remaining issues on CAPC for SL-U Huawei, HiSilicon discussion Rel-18 NR\_SL\_enh2

R2-2211614 On CAPC for SL-U Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2211615 SL-U LBT MAC issues Intel Corporation discussion Rel-18 NR\_SL\_enh2

R2-2211625 Consideration on CAPC for SL-U CATT discussion Rel-18 NR\_SL\_enh2

R2-2211685 Further discussion on user plane aspects of SL-U Apple discussion NR\_SL\_enh2

R2-2211855 Discussion on CAPC in SL-U ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2

R2-2211951 Discussion on channel access for sidelink operation on unlicensed spectrum Xiaomi discussion

R2-2212021 Discussion on LBT impact to MAC for NR SL-U Lenovo discussion Rel-18

R2-2212157 Remaining issues on channel access priority in SL-U Spreadtrum Communications discussion Rel-18

R2-2212158 LBT failure handling for SL-U Spreadtrum Communications discussion Rel-18

R2-2212406 Considerations on resource allocation for SL-U Nokia, Nokia Shanghai Bell discussion NR\_SL\_enh2 R2-2210342

R2-2212442 SL CAPC Samsung Research America discussion Rel-18 NR\_SL\_enh2

R2-2212443 SL resource allocation in SL-U Samsung Research America discussion Rel-18 NR\_SL\_enh2

R2-2212496 Discussion on CAPC definition for SL-U NEC Corporation discussion

R2-2212673 Channel Access Priority Classes for SL-U MediaTek Inc. discussion Rel-18

R2-2212674 HARQ-based Sidelink RLF due to LBT failure MediaTek Inc. discussion Rel-18

R2-2212681 Discussion on sidelink CAPC Qualcomm India Pvt Ltd discussion

R2-2212689 Discussion on sidelink LBT impact Qualcomm India Pvt Ltd discussion

R2-2212797 Discussion on sidelink un-licensed ITL discussion Rel-18

R2-2212847 Discussion on RAN2 Aspects in SL-U Fraunhofer IIS discussion NR\_SL\_enh2

R2-2211856 Discussion on MAC related aspects for SL-U ZTE Corporation, Sanechips discussion Rel-18 NR\_SL\_enh2 Withdrawn