**3GPP TSG-RAN2 Meeting 118-e** **R2-2206300**

**Online, 9th – 20th May, 2022**

**Agenda item: 6.15.1**

**Source: Huawei, HiSilicon**

**Title: Summary of [AT118-e][706][V2X/SL] RRC corrections (Huawei)**

**Document for: Discussion**

1. Introduction

This is the summary of below offline discussion.

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

**Scope:** Discuss proposals/corrections (including the need of proposals/corrections) proposed in R2-2204643, R2-2205106, R2-2205317, R2-2205347, R2-2205782, R2-2206136, R2-2206137, R2-2204639, R2-2204640, R2-2205183, R2-2205184, R2-2205316, R2-2205318, R2-2205620, R2-2205642, R2-2205644, R2-2204566, R2-2204567, R2-2204577, R2-2204582, R2-2204641 and R2-2205102. Prepare a merged CR for the agreeable proposals/corrections. Note rapporteur can add additional ones if it has higher priority issue from ASN.1 point of view.

**Intended outcome:** Summary discussion in R2-2206300 and 38.331 CR in R2-2206301. Email approval.

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

Contact list

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1. Discussion

## 2.1 RIL O099 on missing procedural texts

The related contribution is:

R2-2204643, Correction on [O099] OPPO draftCR Rel-17 38.331 17.0.0 F

It is understood that, as described on cover sheep of R2-2204643, the applying of *sl-DRX-ConfigUC-PC5-r17* and *sl-LatencyBoundIUC-Report-r17* is indeed missing in the procedural text of 5.8.9.1.3. Rapporteur propose to agree the change in R2-2204643 as it is.

----------------------------------------------

1> if the *RRCReconfigurationSidelink* message includes the *sl-LatencyBoundCSI-Report*:

2> apply the configured sidelink CSI report latency bound;

1> if the *RRCReconfigurationSidelink* message includes the *sl-DRX-ConfigUC-PC5*, and

1> if the UE accepts the *sl-DRX-ConfigUC-PC5*:

2> apply the configured sidelink DRX configuration;

1> if the *RRCReconfigurationSidelink* message includes the *sl-LatencyBoundIUC-Report*:

2> apply the configured sidelink IUC report latency bound;

1> if the UE is unable to comply with (part of) the configuration included in the *RRCReconfigurationSidelink* (i.e. sidelink RRC reconfiguration failure):

-------------------------------------------------------------------------------------

**Q1: Would you company agree the change proposed in R2-2204643?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| InterDigital | Agree |  |
| OPPO | Agree |  |
| Xiaomi | Agree |  |
| ZTE | Agree |  |
| CATT | Agree |  |
| Ericsson | agree |  |
| Apple | Partialy Agree | We think the “sl-LatencyBoundIUC-Report” part is not needed becaue there is no any specific “apply” action/behavior in UE side to be standardized, unless we want to standardize an internal UE variable to store this value. In my view, we only need to menton it when this value is used. |
| vivo | Agree with comments | For the SL DRX configuration, we think the UE will not only apply the SL DRX configuraion but also start the SL DRX operation as specified in MAC. Therefore, we suggest to add modification on top of the above TP. For example, see in red:  1> if the *RRCReconfigurationSidelink* message includes the *sl-DRX-ConfigUC-PC5*, and  1> if the UE accepts the *sl-DRX-ConfigUC-PC5*:  2> apply the configured sidelink DRX configuration;  2> configure lower layers to perform sidelink DRX operation according to *sl-DRX-ConfigUC-PC5* for the associated destination as defined in TS 38.321 [3];  The added level-2 action is to align with subclause 5.23 in TS 38.321 as below. 5.28 Sidelink Discontinuous Reception (DRX)5.28.1 General The MAC entity may be configured by RRC with an SL DRX functionality that controls the UE's SCI (i.e., 1st stage SCI and 2nd stage SCI) monitoring activity for unicast, for groupcast and broadcast. When using SL DRX operation, the MAC entity shall also monitor SCI (i.e., 1st stage SCI and 2nd stage SCI) according to requirements found in other clauses of this specification. |

**[Summary]**

**[Proposal]**

## 2.2 RILs Q906, X202, H663, Z679, B200 on UE reporting with SUI messages

The related contributions are:

R2-2206137 [H663] [Z679] [X202] Discussion on implementation of RX UE reporting information related to SL DRX Huawei, HiSilicon

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

R2-2205620 [B200][B201][B202][B203]Some correction for SL DRX Configuration Lenovo

RX UE can report to its gNB the SL DRX configuration from TX UE for unicast and the QoS profile and associated destination for which UE is interested in reception for groupcast/broadcast. One difference between R2-2205317 approach and R2-2206137 approach is to use separate fields to report unicast SUI or to use choice structure in IE SL-RxDRX-Report-v1700. R2-2205317 approach also makes the RX UE reporting independent of “TX UE reporting”. R2-2206137 approach, on the other hand, would require UE to check its interest of transmission and reception and change the field contents according to whether it is performing both transmission and reception or it is preforming reception only, which seems add complexity on UE operation. The gain could be the saving of signalling when UE is preforming both transmission and reception. If Option 1 is chosen, Z679 will be accepted. Either Option 1 or Option 2 is chosen, B200 will be rejected.

**Q2: which approach would your company prefer, regarding RX UE reports for different cast types?**

**Option 1: using different fields to report for unicast and groupcast/broadcast as proposed in R2-2205317.**

***SidelinkUEInformationNR* message**

-- ASN1START

-- TAG-SIDELINKUEINFORMATIONNR-START

SidelinkUEInformationNR-r16::= SEQUENCE {

criticalExtensions CHOICE {

sidelinkUEInformationNR-r16 SidelinkUEInformationNR-r16-IEs,

criticalExtensionsFuture SEQUENCE {}

}

}

SidelinkUEInformationNR-r16-IEs ::= SEQUENCE {

sl-RxInterestedFreqList-r16 SL-InterestedFreqList-r16 OPTIONAL,

sl-TxResourceReqList-r16 SL-TxResourceReqList-r16 OPTIONAL,

sl-FailureList-r16 SL-FailureList-r16 OPTIONAL,

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension SidelinkUEInformationNR-v1700-IEs OPTIONAL

}

SidelinkUEInformationNR-v1700-IEs ::= SEQUENCE {

sl-TxResourceReqList-v1700 SL-TxResourceReqList-v1700 OPTIONAL,

sl-RxDRX-ReportList-v1700 SL-RxDRX-ReportList-v1700 OPTIONAL,

sl-RxInterestedGCBCDestinationList-r17 SL-RxInterestedGCBCDestinationList-r17 OPTIONAL,

sl-RxInterestedFreqListDisc-r17 SL-InterestedFreqList-r16 OPTIONAL,

sl-TxResourceReqListDisc-r17 SL-TxResourceReqListDisc-r17 OPTIONAL,

sl-TxResourceReqListCommRelay-r17 SL-TxResourceReqListCommRelay-r17 OPTIONAL,

ue-Type-r17 ENUMERATED {relayUE, remoteUE} OPTIONAL,

sl-SourceIdentity-RemoteUE-r17 SL-SourceIdentity-r17 OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

SL-InterestedFreqList-r16 ::= SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER (1..maxNrofFreqSL-r16)

SL-TxResourceReqList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16

SL-TxResourceReq-r16 ::= SEQUENCE {

sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

sl-CastType-r16 ENUMERATED {broadcast, groupcast, unicast, spare1},

sl-RLC-ModeIndicationList-r16 SEQUENCE (SIZE (1.. maxNrofSLRB-r16)) OF SL-RLC-ModeIndication-r16 OPTIONAL,

sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 OPTIONAL,

sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 OPTIONAL,

sl-TxInterestedFreqList-r16 SL-TxInterestedFreqList-r16 OPTIONAL,

sl-CapabilityInformationSidelink-r16 OCTET STRING OPTIONAL

}

SL-TxResourceReqList-v1700 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-v1700

SL-RxDRX-ReportList-v1700 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-RxDRX-Report-v1700

SL-TxResourceReq-v1700 ::= SEQUENCE {

sl-DRX-InfoFromRx-List-r17 SEQUENCE (SIZE (1..maxNrofSL-Rx-InfoSet-r17)) OF SL-DRX-ConfigUC-SemiStatic-r17 OPTIONAL

}

SL-RxDRX-Report-v1700 ::= SEQUENCE {

sl-DRX-ConfigFromTx-r17 SL-DRX-ConfigUC-SemiStatic-r17 ,

sl-DestinationIndex-r17 SL-DestinationIndex-r16,

}

SL-RxInterestedGCBCDestinationList-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-RxInterestedGCBCDestination-r17

SL-RxInterestedGCBCDestination-r17 ::= SEQUENCE {

sl-RxInterestedQoS-InfoList-r17 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16,

sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

}

SL-TxResourceReqListDisc-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqDisc-r17

SL-TxResourceReqDisc-r17 ::= SEQUENCE {

sl-DestinationIdentityDisc-r17 SL-DestinationIdentity-r16,

sl-SourceIdentity-RelayUE-r17 SL-SourceIdentity-r17 OPTIONAL,

sl-CastTypeDisc-r17 ENUMERATED {broadcast, groupcast, unicast, spare1},

sl-TxInterestedFreqListDisc-r17 SL-TxInterestedFreqList-r16,

sl-TypeTxSyncListDis-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16,

sl-DiscoveryType-r17 ENUMERATED {relay, non-Relay},

...

}

SL-TxResourceReqListCommRelay-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqCommRelay-r17

SL-TxResourceReqCommRelay-r17 ::= CHOICE {

sl-TxResourceReqL2U2N-Relay-r17 SL-TxResourceReqL2U2N-Relay-r17,

sl-TxResourceReqL3U2N-Relay-r17 SL-TxResourceReq-r16

}

SL-TxResourceReqL2U2N-Relay-r17 ::= SEQUENCE {

sl-DestinationIdentityL2U2N-r17 SL-DestinationIdentity-r16 OPTIONAL,

sl-TxInterestedFreqListL2U2N-r17 SL-TxInterestedFreqList-r16,

sl-TypeTxSyncListL2U2N-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16,

sl-LocalID-Request-r17 ENUMERATED {true} OPTIONAL,

sl-PagingIdentity-RemoteUE-r17 SL-PagingIdentity-RemoteUE-r17 OPTIONAL,

sl-CapabilityInformationSidelink-r17 OCTET STRING OPTIONAL,

...

}

SL-TxInterestedFreqList-r16 ::= SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER (1..maxNrofFreqSL-r16)

SL-QoS-Info-r16 ::= SEQUENCE {

sl-QoS-FlowIdentity-r16 SL-QoS-FlowIdentity-r16,

sl-QoS-Profile-r16 SL-QoS-Profile-r16 OPTIONAL

}

SL-RLC-ModeIndication-r16 ::= SEQUENCE {

sl-Mode-r16 CHOICE {

sl-AM-Mode-r16 NULL,

sl-UM-Mode-r16 NULL

},

sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16

}

SL-FailureList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-Failure-r16

SL-Failure-r16 ::= SEQUENCE {

sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

sl-Failure-r16 ENUMERATED {rlf,configFailure, spare6, spare5, spare4, spare3, spare2, spare1}

}

-- TAG-SIDELINKUEINFORMATIONNR-STOP

-- ASN1STOP

**Option 2: using CHOICE structure and field description for *sl-RxDRX-ReportList* as in R2-2206137.**

***SidelinkUEInformationNR* message**

-- ASN1START

-- TAG-SIDELINKUEINFORMATIONNR-START

SidelinkUEInformationNR-r16::= SEQUENCE {

criticalExtensions CHOICE {

sidelinkUEInformationNR-r16 SidelinkUEInformationNR-r16-IEs,

criticalExtensionsFuture SEQUENCE {}

}

}

SidelinkUEInformationNR-r16-IEs ::= SEQUENCE {

sl-RxInterestedFreqList-r16 SL-InterestedFreqList-r16 OPTIONAL,

sl-TxResourceReqList-r16 SL-TxResourceReqList-r16 OPTIONAL,

sl-FailureList-r16 SL-FailureList-r16 OPTIONAL,

lateNonCriticalExtension OCTET STRING OPTIONAL,

nonCriticalExtension SidelinkUEInformationNR-v1700-IEs OPTIONAL

}

SidelinkUEInformationNR-v1700-IEs ::= SEQUENCE {

sl-TxResourceReqList-v1700 SL-TxResourceReqList-v1700 OPTIONAL,

sl-RxDRX-ReportList-v1700 SL-RxDRX-ReportList-v1700 OPTIONAL,

sl-RxInterestedFreqListDisc-r17 SL-InterestedFreqList-r16 OPTIONAL,

sl-TxResourceReqListDisc-r17 SL-TxResourceReqListDisc-r17 OPTIONAL,

sl-TxResourceReqListCommRelay-r17 SL-TxResourceReqListCommRelay-r17 OPTIONAL,

ue-Type-r17 ENUMERATED {relayUE, remoteUE} OPTIONAL,

sl-SourceIdentity-RemoteUE-r17 SL-SourceIdentity-r17 OPTIONAL,

nonCriticalExtension SEQUENCE {} OPTIONAL

}

SL-InterestedFreqList-r16 ::= SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER (1..maxNrofFreqSL-r16)

SL-TxResourceReqList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16

SL-TxResourceReq-r16 ::= SEQUENCE {

sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

sl-CastType-r16 ENUMERATED {broadcast, groupcast, unicast, spare1},

sl-RLC-ModeIndicationList-r16 SEQUENCE (SIZE (1.. maxNrofSLRB-r16)) OF SL-RLC-ModeIndication-r16 OPTIONAL,

sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 OPTIONAL,

sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 OPTIONAL,

sl-TxInterestedFreqList-r16 SL-TxInterestedFreqList-r16 OPTIONAL,

sl-CapabilityInformationSidelink-r16 OCTET STRING OPTIONAL

}

SL-TxResourceReqList-v1700 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-v1700

SL-RxDRX-ReportList-v1700 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-RxDRX-Report-v1700

SL-TxResourceReq-v1700 ::= SEQUENCE {

sl-DRX-InfoFromRx-List-r17 SEQUENCE (SIZE (1..maxNrofSL-Rx-InfoSet-r17)) OF SL-DRX-ConfigUC-SemiStatic-r17 OPTIONAL

}

SL-RxDRX-Report-v1700 ::= CHOICE {

sl-DRX-ConfigFromTx-r17 SL-DRX-ConfigUC-SemiStatic-r17,

sl-RxInterestedQoS-r17 SL-RxInterestedQoS-r17

}

SL-RxInterestedQoS-r17 ::= SEQUENCE {

sl-DestinationIdentityRxQoS-r17 SL-DestinationIdentity-r16,

sl-RxInterestedQoS-InfoList-r17 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 OPTIONAL,

sl-CastTypeRxQoS-r17 ENUMERATED {broadcast, groupcast}

}

SL-TxResourceReqListDisc-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqDisc-r17

SL-TxResourceReqDisc-r17 ::= SEQUENCE {

sl-DestinationIdentityDisc-r17 SL-DestinationIdentity-r16,

sl-SourceIdentity-RelayUE-r17 SL-SourceIdentity-r17 OPTIONAL,

sl-CastTypeDisc-r17 ENUMERATED {broadcast, groupcast, unicast, spare1},

sl-TxInterestedFreqListDisc-r17 SL-TxInterestedFreqList-r16,

sl-TypeTxSyncListDis-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16,

sl-DiscoveryType-r17 ENUMERATED {relay, non-Relay},

...

}

SL-TxResourceReqListCommRelay-r17 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqCommRelay-r17

SL-TxResourceReqCommRelay-r17 ::= CHOICE {

sl-TxResourceReqL2U2N-Relay-r17 SL-TxResourceReqL2U2N-Relay-r17,

sl-TxResourceReqL3U2N-Relay-r17 SL-TxResourceReq-r16

}

SL-TxResourceReqL2U2N-Relay-r17 ::= SEQUENCE {

sl-DestinationIdentityL2U2N-r17 SL-DestinationIdentity-r16 OPTIONAL,

sl-TxInterestedFreqListL2U2N-r17 SL-TxInterestedFreqList-r16,

sl-TypeTxSyncListL2U2N-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16,

sl-LocalID-Request-r17 ENUMERATED {true} OPTIONAL,

sl-PagingIdentity-RemoteUE-r17 SL-PagingIdentity-RemoteUE-r17 OPTIONAL,

sl-CapabilityInformationSidelink-r17 OCTET STRING OPTIONAL,

...

}

SL-TxInterestedFreqList-r16 ::= SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER (1..maxNrofFreqSL-r16)

SL-QoS-Info-r16 ::= SEQUENCE {

sl-QoS-FlowIdentity-r16 SL-QoS-FlowIdentity-r16,

sl-QoS-Profile-r16 SL-QoS-Profile-r16 OPTIONAL

}

SL-RLC-ModeIndication-r16 ::= SEQUENCE {

sl-Mode-r16 CHOICE {

sl-AM-Mode-r16 NULL,

sl-UM-Mode-r16 NULL

},

sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16

}

SL-FailureList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-Failure-r16

SL-Failure-r16 ::= SEQUENCE {

sl-DestinationIdentity-r16 SL-DestinationIdentity-r16,

sl-Failure-r16 ENUMERATED {rlf,configFailure, spare6, spare5, spare4, spare3, spare2, spare1}

}

-- TAG-SIDELINKUEINFORMATIONNR-STOP

-- ASN1STOP

**Option 3: others, please provide comments and TP.**

|  |  |  |  |
| --- | --- | --- | --- |
| Company | Option | | Further comments |
| InterDigital | Option 1 | | We think separating the reporting of the TX and RX UE into separate IEs would make the spec cleaner. |
| OPPO | Either has some problem | | No strong view on using choice or not  But we do not agree to include  1) dest ID for UC case, since dest ID is only useful for GC/BC for offset calculation  2) cast type, since gNB can know whether it is UC / GCBC from other IEs, i.e., i.e., whether sl-DRX-ConfigFromTx-r17, or QoS info is included, and no need to have an explicit cast type indicator. |
| Xiaomi | Option 1 | Option 1 is simple and clean.  In Option 2, the destination of the *sl-DRX-ConfigFromTx-r17* is derived from the *sl-TxResourceReq-r16*, whose entry in *sl-TxResourceReqList-r16* is in the same order as *SL-RxDRX-Report-v1700* in the *SL-RxDRX-ReportList-v1700*. The *sl-TxResourceReqList-r16* and *SL-RxDRX-ReportList-v1700* should have the same length and order. To keep the same length, empty entries are expected in *SL-RxDRX-ReportList-v1700*. Each empty entry would waste three bits. The bit waste may be severe, if only one or two peer UE configure SL DRX to report.  Regarding Oppo’s first concern, in option 1, the IE ‘SL-RxInterestedGCBCDestination-r17’ is only used to report QoS of BC/GC, so there should be no UC destination repored by this IE. | |
| ZTE | Option1 | | It seems easier to understand. For option2, agree with OPPO that the cast type is not needed. |
| CATT | Option 1 | |  |
| Ericsson | Option 1 | | Option 1 is simpler and able to distinguish between different reporting purposes. |
| Apple | Prefer Option 1, but have commemnts | | There is no need to use Dest Index for UC case, just include L2 Src ID of the DRX report (which is TX UE)., then NW will understand.  As shown below  SL-RxDRX-Report-v1700 ::= SEQUENCE {  sl-DRX-ConfigFromTx-r17 SL-DRX-ConfigUC-SemiStatic-r17 ,  sl-TXUEID-r17 SL-SourceIdentity-r17,    } |
| vivo | Option 2 with comments | | We are fine with the TP in Option 2 except the CHOICE structure. We think the *SL-RxDRX-Report* for UC and GC/BC can happen simultaneously within one UE, thus it does not make sense to use CHOICE instead of SEQUENCE. |

There are different views regarding RX UE reporting cast type. If RX UE gNB cannot make use of cast type reported by RX UE then it shall not be reported.

**Q3: Would you company support RX UE reporting cast type?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company | Yes/No | | Further comments | |
| InterDigital | Yes | | We think this knowledge at the gNB is useful, since the timers supported in DRX will depend on the cast type. | |
| OPPO | No | | Not see the need, gNB can know whether it is UC or GC/BC based on the signaling structure already, i.e., whether sl-DRX-ConfigFromTx-r17, or QoS info is included. | |
| Xiaomi | | No | | The intention of alignment is mainly on onduration timer. There is no difference between GC and BC to determine drx cycle and onduration timer. |
| ZTE | No | | The intention of reporting GC/BC QoS and destination id is to let gNB know the SL DRX of the UE, then the gNB can configure proper Uu DRX to make them be alignment. The difference between GC and BC is only inactivity timer, retransimission and RTT timer which have no impacts on the configuration for DRX alignment. | |
| CATT | No | | Agree with OPPO. | |
| Ericsson | No | | As OPPO mentioned, gNB is already able to know cast types. | |
| Apple | Need GC/BC reporting | | If there is no GC/BC cast-type report, how does gNB knows whether the QoS info is for GC or BC. | |
| vivo | Yes | | We think it may be beneficial if the gNB knows that the reported QoS profile is for GC not BC. Because for GC, *sl-drx-StartOffset* (ms) = DST L2 ID MOD *sl-drx-Cycle* (ms) which means gNB can have more SL DRX configuration information by differentiating the cast type between GC and BC. | |

## 2.3 RILs A904, A905, O066, O067, E101, E046, V350, V351, O050 on the power saving resource pool procedures

The related contributions are:

R2-2205644 [A904][A905][V380] Discussion on RRC configuration for power-saving resource pools Apple

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

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

R2-2204641 Correction on [O066, O067] OPPO

R2-2205782 [E101] Correction on resource pool handling Ericsson

R2-2205184 Correction on RIL issue E046 Ericsson

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

The following issues are to be discussed, based on one TP (partly based on vivo CR) in Annex A.

The first issue is when UE can use exceptional pool to perform random selection. Our understanding is that UE can select normal resource pool or power saving resource pool to perform random selection in normal resource pool and power saving resource pool. Only when UE select to perform sensing and no sensing results in normal resource pool and power saving resource pool, UE can use the exceptional pool to perform random resource selection.

**Q4: Would your company agree on the conditions for UE to perform random selection choose exceptional as described in TP of Annex A?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| InterDigital | Yes |  |
| OPPO | Generally OK, with a comment inserted in Annex-A |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| CATT | Yes |  |
| Ericsson | disagree | The current logical order of UE actions in the TP is confusing.  As RAN2 agreed, UE first selects a resource pool, after that, UE selects RA scheme configured for the pool.  Even the existing procedure text in the RRC spec has similar issue. However, the proposed TP doesn’t improve the situation. Therefore, the TP is not agreeable. |
| Apple | No | Agree with Ericsson. When multiple RA mode is supported, it no longer make sense to specify the RA mode selection procedure in RRC. It is agreed that the RA mode selection is completely up to UE implementation. We do not agree with the TP.  Also, for the last change in TP for the addition sentence about limited codepoint, we have the following comment:   1. For TX PS pools ( if R17-only pool is supported?), only code point c2, c3, c6 are allowed. |
| vivo |  | We share the modelling issue raised by Ericsson and Apple about — And this is also the issues we proposed to discusss in our contributions R2-2204566 (P2) and R2-2204567 (O1). Unfortunately, the issue is hidden somewhere, and in this case, we worry whether there is still a chance to reach common understanding on this issue in this meeting. Without a conclusion on the modelling, it makes no sense to talk about the specific TP. |

**Q5: Would your company agree that UE sensing behaviour shall be specified, depending on *sl-AllowedResourceSelectionConfig* as configured or not?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| InterDigital | Yes |  |
| OPPO | Agree |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| CATT | Yes |  |
| Ericsson | disagree | The current logical order of UE actions in the TP is confusing.  As RAN2 agreed, UE first selects a resource pool, after that, UE selects RA scheme configured for the pool.  Even the existing procedure text in the RRC spec has similar issue. However, the proposed TP doesn’t improve the situation. Therefore, the TP is not agreeable. |
| Apple | No | When multiple RA mode is supported, it no longer make sense to specify the RA mode selection procedure in RRC.  UE’s RA mode selection is up to UE implementation. Both TX pool selection and sensing behavior is specified in MAC. |
| vivo |  | Same comments as above for Q4. |

NOTE 3 in Annex A is further revised to reflect RAN2 agreement below, however there are views that NOTE3 shall be removed as at least the selection of resource pool is specified in MAC spec. Also there are views that the order of selection (select resource pool first or select resource allocation scheme first). Since both selections are up to UE implementation, the order of selection might not need to be described further. The revised NOTE 3 doesn’t imply which selection is done first. Keeping (revised) NOTE3 might help to understand UE behavior in the procedure texts when the UE is configured with both normal resource pool and power saving resource pool.

1. It is up to UE implementation how to consider the per-pool allowedResourceSelectionConfig and UE capability (for a UE in RRC idle/inactive) during resource pool selection. Whether to capture it as a NOTE in the Spec may be discussed during CR implementation.
2. 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).

**Q6: Would your company agree to keep the revised NOTE 3?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| InterDigital | Agree |  |
| OPPO | Agree |  |
| Xiaomi | Yes |  |
| ZTE | Agree |  |
| CATT | Yes |  |
| Ericsson | Yes | It seems that only changes to note 3 is acceptable. |
| Apple | Yes |  |
| vivo |  | This still depends on the modelling — if pool seletion and RA scheme selection should be done by the MAC, why not add this NOTE in MAC Spec? Also, if such a NOTE is added in RRC, how to understand its relationship with the specified pool selection procedure based on PFSCH? Do we then refer to TS 38.321 in TS 38.331, to say that on top of the specified behaviour in MAC, it is up to UE implementation to consider other factors? |

## 2.4 Coexistence between Rel-16 normal resource pool and Rel-17 power saving resource pool (A904, A905, O066, O067)

This issue is related above 2.3 and is more on the duplicated IEs. It is clear resource pool configuration i.e. normal resource pool configuration and power saving resource pool configuration shall be different, i.e. to keep separate *sl-TxPoolSelectedNormal* and *sl-TxPoolSelectedNormalPS*. On the design of (duplicated) IEs, it could be considered that the separate IEs could benefit further expansion.

**Q7: would your company support to remove the duplicated IEs related to power saving resource pool?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Further comments |
| InterDigital | No | We are fine to keep the pool configuration as separate. |
| OPPO | Yes | We cannot follow the point from “to keep separate *sl-TxPoolSelectedNormal* and *sl-TxPoolSelectedNormalPS*. On the design of (duplicated) IEs, it could be considered that the separate IEs could benefit further expansion.”  For R17, clearly we are using duplicated IE definition (no difference at all when it comes to ASN.1 parsing), which is clearly not necessary.  We can simply using separate field with same definition, to achieve the same result. |
| Xiaomi | No | Agree with rapp. Separate IEs may be more forward compatible. |
| ZTE | No | Agree with rapp. |
| CATT | Yes | Agree with OPPO. No need to define *sl-TxPoolSelectedNormalPS-r17.* |
| Ericsson | Yes | Although we have no strong view. But, It seems unnecessary to have duplicated IE in R17. |
| Apple | Yes | The differentce between *sl-TxPoolSelectedNormalPS-r17*and *sl-TxPoolSelectedNormal* pool is not clear, as both can use “allowedResourceSelectionConfig”. We do not understand the future expansion justificaiton either. Here is our view of PS pool deisgn:  1. R17 RX PS pools are completely unnecessary. Different from discovery pool design, There is no PS-specific RX pool. RX pool selection is completely up to UE implementation and there is no restriction.  2. R17 TX PS pools are not needed, unless RAN1 has an agreement to support a TX pool which forbid to be “full sensed” by Rel-16 UE.  3. If R17-only TX PS pools are supported by RAN1 agreement, only code point c2, c3 and c6 are allowed for “allowedResourceSelectionConfig” because there is no reason to allow a pool to be full sensed by R17 UE, but not full sensed by R16 UE. |
| vivo | See comments | No strong view which way to go. But if we finally go with the decision to keep separate *sl-TxPoolSelectedNormal* and *sl-TxPoolSelectedNormalPS,* it should be further clarified that the resource pool ID among different resource pools are numbered uniquely. Otherwise, the CBR measurement functionality which is using resource pool ID as the entry for RRC CONNECTED UEs’ measurement configuration and reporting would be impacted. |

## 2.5 Terminology for NR SL communication with the introduction of SL DRX (O027, O028, O030, O031)

Related contribution:

R2-2204640, Correction on [O027, O028, O030, O031, O034-O046] OPPO

In TS 38.300, there is definition for “NR sidelink communication”, so it would be desired not to change this specific term. Term “NR sidelink communication transmission/reception” (as the title of TS 38.3331 clause 5.8.7, 5.8.8) can be used.

**Q8: would your company agree to add transmission/reception after NR sidelink communication instead of changing to NR sidelink transmission/reception?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| InterDigital | Disagree | The change seems not critical and the current text is anyway correct |
| OPPO | Agree | Either our change or the change by Rapp is OK, otherwise the current spec is not correct since we cannot diff between the behavior between Tx and Rx. |
| Xiaomi | Comments | Agree with the intention, however, we wonder how to treat the legacy terms, where only ‘NR sidelink communication’ is used. Shall we further revise those terms to make alignment. |
| ZTE | Agree | Both changes are ok. We think adding transmission/reception is clearer since the behavior for TX UE and RX UE are different. |
| CATT | Disagree | We are fine to the intention, but maybe it is not necessary to change the term, we can understand it is transmission or reception from the procedure description. |
| Ericsson | Disagree. | Agree with InterDigital, the issue is not critical. No change is needed. |
| Apple | Agree | Agree with OPPO. |
| vivo | Disagree | It seems more like cosmetic changes |

On checking the condition of gNB supporting SL DRX, “if *sl-DRX-ConfigCommon-GC-BC* is included in *SIB12-IEs*:”, it can be understood that this checking should be placed in “Initiation” section 5.8.3.2 at least, and may not need to check the condition again when the fields are filled in section 5.8.3.3.

**Q9: Which option would your company support regarding check condition of gNB supporting SL DRX, “if *sl-DRX-ConfigCommon-GC-BC* is included in *SIB12-IEs*:”?**

**Option 1: place this condition in clause 5.8.3.2 only.**

**Option 2: place this condition in clause 5.8.3.3 only (as current spec)**

**Option 3: place this condition in both 5.8.3.2 and 5.8.3.3 as in R2-2204640.**

**Option 4: others, please elaborate and provide TP is needed.**

|  |  |  |
| --- | --- | --- |
| Company | Option | Further comments |
| InterDigital | Option 1 | If the check is made when the UE determines if SUI should be sent, it is no longer needed during the setting of the SUI contents. |
| OPPO | Option 3 | Why R17 eSL is a special case? All the other R16 SL, R17 SL Relay adopt option-3. |
| Xiaomi | Option 1 |  |
| ZTE | Option 3 |  |
| CATT | Option 1 |  |
| Ericsson | Option 1 |  |
| Apple | Option 3 |  |
| vivo | Option 3 | It is safer to adopt Option 3. The UE may pass the check in 5.8.3.2 due to other conditions and initiate SUI procedure. And then the UE may set the SL DRX related fields in 5.8.3.3 if we don’t double check the condition of gNB supporting SL DRX. |

## 2.6 RIL O092:

R2-2204577, [O092] Correction on default CBR configuration OPPO CR Rel-17 38.331 17.0.0 2975 - F

R2-2204582, [O092] Discussion on default CBR measurement value OPPOlated contribution:

It could be understood that RAN1 intentionally design the new parameters in Rel-17, such that the different default CBR measurement values can be used for different PS scheme.

**Q10: Which option would your company support regarding proposals in R2-2204582?**

**Option 1: RAN2 send LS to ask RAN1 on how to handle the duplicated defined R16/R17 default CBR parameters.**

**Option 2: Discuss to remove the R17 parameters and use the R16 default CBR configuration when the CBR measurement result is unavailable or available but below a threshold. And send LS to RAN1 to ask if any concern.**

**Option 3: No action is needed.**

**Option 4:keep current RRC and change MAC to align with RRC.**

|  |  |  |
| --- | --- | --- |
| Company | Option | Further comments |
| InterDigital | Option 3 | We have the same understanding as rapporteur that RAN1 intentionally designed a different CBR measurement value for Rel17 |
| OPPO | Option-1 or Option-2 | To Rapp and Interdigital: then can you clarify in which case the R16 default CBR is used and in which case the R17 default CBRis used based on the current spec? |
| Xiaomi | Option 1 or 3 | We think this is RAN1 decision, Ran2 shall not take liberty to change. |
| ZTE | Option 3 | We agree with rapp that RAN1 intentionally design the new parameters in Rel-17. |
| CATT | Option 1 | RAN2 can wait RAN1’s decision. |
| Ericsson | Option 3 | No action is needed. R16 parameter is applicable to only random resource selection, while R17 parameter is also applicable to sensing based selection, so, the new parameter is needed for at least partial sensing.  Therefore, the new parameter need to be kept.  [OPPO] isn’t that so that R17 also introduce a new IE for random-selection, then what is the difference? |
| Apple | Opfion 1 or Option 2 | We think it is OK to double check with RAN1. Sometimes, RAN1 introduce RRC parameters without clarifying how it is going to work in RAN2 and then get voided eventually. |
| vivo | Option 4 | Our understanding is that RAN1 agreement is to always apply different default CBR values for Rel17. It’s true that current MAC specification is not aligned with RAN1 agreement. Some changes are needed to related procedure text “or the corresponding *sl-defaultTxConfigIndex* configured by RRC if CBR measurement results are not available” in MAC. |

## 2.7 RIL A914, A918, A919

R2-2205642, [A914][A918][A919] Discussion on corrections of IUC Scheme 1 configurations in RRC Apple

All proposals can be discussed together.

**Q11: Would your company support to change the configuration of *sl-PriorityPreferredResourceSet*, *sl-NumSubCH-PreferredResourceSet* or *sl-ReservedPeriodPreferredResourceSet* to a sequence of possible NW allowed value combinations, with up to 32 sequence size. Also clarify field descriptions as in P3, P4.**

**Option 1: Yes, change as proposed.**

**Option 2: not need to change**

**Option 3: Check with RAN1 with LS, e.g. in R2-2205643**

|  |  |  |
| --- | --- | --- |
| Company | Option | Further comments |
| InterDigital | Option 1 | A single value is very limiting, as indicated by the proponent. |
| OPPO | Option-2 | Clearly this is an optimization instead of correction. |
| Xiaomi | Option 2 or 3 | We understand this is more a RAN1 decision. |
| ZTE | Option-2 |  |
| CATT | Option-2 or 3 |  |
| Ericsson | Option 1 or Option 3 | The proposed change seems to be useful. |
| Apple | Option 1 or Option 3 | We think all the changes are justified to make the system actullty work.  For A914, it is quite infeasibe to have gNB to only configure a single parameter value for this IUC scheme.  For A918, this is to align with RAN1 agreement to piggyback the IUC REQ with data. The current text is confusing.  For A919, this is to specify the behavior with normative language, because “UE A is an (future) intended receiver of UE B” is not a condition can be implemented by UE A. |
| vivo | Option 3 | All changes are related to RAN1 parameters. If some signalling limitation are anticipated in RAN2, we may consult with RAN1 firstly and make necessary changes after confirmation. |

## 2.8 RIL X209, X210

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

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

It is proposed to add description in Annex B on when UE can operate SL DRX for GC/BC following preconfiguration. It is suggested to add the below TP if the behavior is indeed missing. Also, we shall check if redundant description shall be removed.

**Q12: would your company support the added procedure texts in Annex B?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Further comments |
| InterDigital | No | We think the text in Annex B is not needed and redundant. |
| OPPO | No | Although we are OK with P1, P2 in 5316, we do not agree with P3 on adding a separate section as in Annex-B, we are open to consider some text tunning in 5.8.9.1.2. |
| Xiaomi | Yes |  |
| ZTE | No | Annex B seems redundant. |
| CATT | No |  |
| Ericsson | No | Proposals are ok, since they are obvious, however, TP is not needed, since UE behaviour is so obvious. |
| Apple | No |  |
| vivo | See comments | We are open to consider some update on when UE can operate SL DRX for GC/BC following pre-configuration. But we don’t agree to add a separate section but just do necessary changes based on current RRC in 5.2.2.4.13 as highlighted below.  5.2.2.4.13 Actions upon reception of *SIB12*  2> if *sl-DRX-ConfigCommonGC-BC* is included in *SIB12-IEs*:  3> store the NR sidelink DRX configuration and configure lower layers to perform sidelink DRX operation for groupcast and broadcast as specified in TS 38.321 [3]. |

For partial coverage scenario, it is proposed to add procedure texts that TX UE includes new indication in *MasterInformationBlockSidelink* if it’s under SL DRX incapable gNB, as well as new procedure texts for RX UE when it receives such indication. This new indication is to be added as “sl-DRX-enable-GC-BC ENUMERATED {true}” by using “reservedbits-r16” in “MasterInformationBlockSidelink”. The TP in included in Annex C.

**Q13: Would you company support the changes (procedure texts and indication message) proposed in Annex C?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Further comments |
| InterDigital | Yes | Partial coverage scenario should be handled when the TX UE is controlled by a DRX incapable gNB. |
| OPPO | No | We do not see the need of it, since the whole network should be either SL-DRX capable or SL-DRX incapable, similar to the case when we considered resource pool configuration in R16. |
| Xiaomi | Yes | It’s clear partial coverage scenario shall be supported in sidelink. If TX UE is under SL DRX incapable gNB control, GC/BC SL transmission may happen during DRX inactive time. Therefore, nearby OOC RX UE shall not enable SL DRX. Otherwise, there would be data loss.  To OPPO, we think this is different from pool configuration in R16. Pool configuration is enabled by one feature, i.e. Sidelink. But SL DRX and Sidelink are separate features and introdcued in different releases. There is no such restriction on the whole network be either SL DRX capable or SL DRX incapable, considering all R16 gNB can’t support SL DRX and SL DRX and SL are separate features. |
| ZTE | No | It seems an optimization not critical. If a out-of-coverage UE detects *MasterInformationBlockSidelink* from a in-coverage UE but it cannot know whether the in-coverage UE is connected with a SL capable gNB or not, it can decide whether using SL DRX based on UE implementation. For example, the partial coverage UE will not enable default SL DRX until it can ensure that all the time of received GC/BC traffic fell within the range of active time of default SL DRX configuration. |
| CATT | No | We think it is challenge to modify the MIB, in this case, for GC/BC, gNB will only configure the Tx UE in mode2 for SL DRX. |
| Ericsson | No | Although the issue is relevant, but it is better to leave it for future release. We can leave it to be handled as DRX enhancement for GC/BC. Another potential option is to introduce DRX command for GC/BC.  The issue is not critical for R17, big change needs to be avoided. Since there are other possible options to address the issue, more careful discussions in RAN2 are needed. However, there is no time left for R17. |
| Apple | No | The TX UE need just decide DRX itself like mode 2 UE. No enhancement is needed. |
| vivo | No | We prefer to leave it to RX UE implementation e.g., in partial coverage scenario, RX UE may remain active for SL GC and GC communication in order to avoid potential packet loss. |

## 2.9 RIL O074

Related contribution:

R2-2204639, Discussion on Tx profile implementation [O074] OPPO

On RIL O074, it shall be clarified whether the issue is critical.

**Q14: Would your company support to remove the current Tx profile implementation and define a separate container for Tx profile as proposed in R2-2204639?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Further comments |
| InterDigital | No | We think preconfiguration can be used and there is no need for the change. |
| OPPO | Yes | Currently, the Tx profile **list** is defined in pre-configuration, yet in fact the related per-service Tx profile is defined in CT1 via NAS layer signaling. I.e., the related stage-3 signaling is specified in TS 24.385 (for LTE) and TS 24.588 (for NR). So the two lists are duplicated with each other. I.e., the configuration of Tx profile **list** in RRC level is not needed, since one relies on the NAS-configured **list** instead.  Furthermore, the list defined in CT1 need to refer to AS-layer specification for a RRC container. But currently the Tx profile (list) is defined within pre-configuration as an IE, instead of a separate container. |
| Xiaomi | No | This may result in NBC change. The problem of duplication is not so essential. |
| ZTE | No |  |
| CATT | No |  |
| Ericsson | No | The changes are just similar as in LTE, don’t see strong motivation to adopt changes. |
| Apple | No |  |
| vivo | Maybe No | Current TX profile configuration in NR V2X follows the way specified in Rel-15 LTE eV2X. In LTE Rel-15, the TX profile is developed completely based on the instruction in SA2 LS S2-183968 (only sending TO RAN1/2 w/o CT1) with related information cited as follows. The “pointer” below means something like an ID/index value but not the specific Tx profile content. If there is really misalignment/overlapping between RAN2 Spec and CT1 Spec, maybe that is because different WGs had slightly different understanding with the SA2 design.  “SA2 would like to provide the following as a potential approach under the assumption that a static/semi-static configuration, e.g., Tx Profile, can satisfy RAN’s requirements and solve the incompatible PC5 PHY format issue.  a) The “Tx Profiles” are configured in the UE and associated with the V2X services (PSID or ITS-AID).  b) The content of the “Tx Profile” can be specified by the AS layer, e.g. similar to that of “radio parameters” container defined in Rel-14 (i.e. *SL-V2X-Preconfiguration* in TS 36.331).  c) The V2X layer can check the V2X services of a packet from the upper layer (e.g. based on PSID or ITS-AID) and locate the corresponding “Tx Profile”. The V2X layer passes the packet to AS layer with a pointer to the identified “Tx Profile”.  d) Indicating the 3GPP Release version at upper layer does not seem future proof.”  In NR, there’s not been as many details as such in Rel-15 LTE eV2X, so we assume no deviation from Rel-15 design on the related configuration aspects (no strong view, though). |

## 2.10 RIL E042

Related contribution:

R2-2205183, Correction on RIL issue E042 Ericsson draftCR Rel-17 38.331 17.0.0

The suggested changes (optimize procedure texts and related NOTE 2) should have been reflected in Rapporteur CR R2-2206134. Companies can further check in offline discussion “[AT118-e][710][V2X/SL] Misc corrections (Huawei)”.

## 2.11 H660, V402, V403

Related contribution:

R2-2206136, [H660][V402][V403] Discussion on actions related to reception of UEAssistanceInformationSidelink message Huawei, HiSilicon

R2-2206136 has compared two slightly different approaches to optimize the description in clause 5.8.9.6.3 and proposed one comprise TP as in Annex D. Since this is not critical issue, we can simply check companies view on whether to support the TP. If the TP is agreed, it means RIL V402 is agreed and RIL V403 is rejected.

**Q15: Would your company support the TP in Annex D for clause 5.8.9.6.3 description?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Further comments |
| InterDigital | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| CATT | Yes |  |
| Ericsson | Yes |  |
| Apple | Yes |  |
| vivo | Partially Yes | Generally we are fine with rapporteur’s proposed changes but still the existing text “it may determine the sidelink DRX configuration *SL-DRX-ConfigUC* for its peer UE based on UE implementation” is a bit confusing with the following NOTE. Our view is that the UE implementation behavior is better to be captured in one place instead of some in the procedural text and some in a NOTE.  NOTE: When UE determines the sidelink DRX configuration for its peer UE, it may take the sidelink DRX assistance information that is received from its peer UE into account.  As above, we suggest to remove the wording “ based on UE implementation” in the second sentence and merge it to the NOTE. For example, see in red: 5.8.9.6.3 Actions related to reception of *UEAssistanceInformationSidelink* message For sidelink unicast, when a UE is in RRC\_CONNECTED and is performing sidelink operation with resource allocation mode 1, it may report the sidelink DRX assistance information received within the *UEAssistanceInformationSidelink* from its peer UE to the network as specified in 5.8.3. For sidelink unicast, when a UE is in RRC\_CONNECTED and is performing sidelink operation with resource allocation mode 2 or is in RRC\_IDLE or RRC\_INACTIVE or out of coverage, regardless of whether the UE has obtained the sidelink DRX assistance information from the *UEAssistanceInformationSidelink* transmitted from its peer UE or not, it may determine the sidelink DRX configuration *SL-DRX-ConfigUC* for its peer UE ~~based on UE implementation~~.  NOTE: When UE determines the sidelink DRX configuration for its peer UE, it may take the sidelink DRX assistance information that is received from its peer UE into account based on UE implementation. |

## 2.12 Z677, Z680

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

The changes proposed in R2-2205347 are understood as non-critical, can be handled in CR view phase.

## 2.13 Z684

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

It is understood that certain coordination among various lists could be beneficial however it is not clear whether this is critical issue, and whether the proposed NOTE is optimal.

**Q16: Which option would your company support regarding the NOTE proposed in R2-2205106?**

**Option 1: Not support, no need for this NOTE in RRC spec.**

**Option 2: Support with optimal wording, please provide TP.**

**Option 3: Others, please elaborate.**

|  |  |  |
| --- | --- | --- |
| Company | Option | Further comments |
| InterDigital | Option 1 | gNB implementation should ensure this, and needs not be captured. |
| Xiaomi | Option 1 | It’s gNB response not to exceed UE capability. We don't need to NOTE such restriction. |
| ZTE | Option 2 | Without this clarification, the destination index seems not clear since there are two IEs include destination id. |
| CATT | Option 1 |  |
| Ericsson | Option 1 | Up to gNB implementation. |
| Apple | Option 2 with comments | Let us just make this a single list with a CHOICE structure of three different set of parameers, Then the problem will not exist in the first place. |
| vivo | Option 2 | Since Destination ID list is reported via SUI message and SUI is only applicable for mode 1. From this perspective, gNB implementation can ensure this by re-configuring the UE to RRC CONNECTED with mode 2, or release the UE to RRC INACTIVE or RRC IDLE (in such way only mode 2 will be performed). Our TP is suggested as below:  NOTE X: The network implementation ensures that, when the total number of destination index included in *sl-TxResourceReqList-r16*, *sl-TxResourceReqListDisc-r17* and *sl-TxResourceReqListCommRelay-r17* exceeds the value of *maxNrofSL-Dest-r16*, the UE will perform Sidelink resource allocation mode 2. |

1. Conclusion

# Reference

1. R2-2204643, Correction on [O099] OPPO draftCR Rel-17 38.331 17.0.0 F
2. R2-2205106, [Z684] Correction on Destination ID list ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3049 F
3. R2-2205317, [X202] [H663] Discussion on how RX UE to report accepted SL DRX and interested QoS Xiaomi
4. R2-2205347, Correction on [Z677, Z680] ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3070 - F
5. R2-2205782, [E101] Correction on resource pool handling Ericsson draftCR Rel-17 38.331 17.0.0 F
6. R2-2206136, [H660] [V402] [V403] Discussion on actions related to reception of UEAssistanceInformationSidelink message Huawei, HiSilicon
7. R2-2206137, [H663] [Z679] [X202] Discussion on implementation of RX UE reporting information related to SL DRX Huawei, HiSilicon
8. R2-2204639, Discussion on Tx profile implementation [O074] OPPO
9. R2-2204640, Correction on [O027, O028, O030, O031, O034-O046] OPPO draftCR Rel-17 38.331 17.0.0 F
10. R2-2205183, Correction on RIL issue E042 Ericsson draftCR Rel-17 38.331 17.0.0
11. R2-2205184, Correction on RIL issue E046 Ericsson draftCR Rel-17 38.331 17.0.0
12. R2-2205316, [X209] Discussion on preconfigured GC/BC SL DRX usage Xiaomi
13. R2-2205318, [X210] Discussion on GC/BC sidelink DRX operation in partial coverage Xiaomi
14. R2-2205620, [B200] [B201] [B202] [B203] Some correction for SL DRX Configuration Lenovo
15. R2-2205642, [A914] [A918] [A919] Discussion on corrections of IUC Scheme 1 configurations in RRC Apple
16. R2-2205644, [A904] [A905] [V380] Discussion on RRC configuration for power-saving resource pools Apple
17. R2-2204566, [V351] On corrections to NR SL communication procedure using exceptional pool vivo
18. R2-2204567, [V350] Corrections on NR SL communication transmission procedures in mode-2 normal pools vivo
19. R2-2204577, [O092] Correction on default CBR configuration OPPO CR Rel-17 38.331 17.0.0 2975 - F
20. R2-2204582, [O092] Discussion on default CBR measurement value OPPO
21. R2-2204641, Correction on [O066, O067] OPPO draftCR Rel-17 38.331 17.0.0 F
22. R2-2205102, correction on exceptional resource pool for power saving ZTE Corporation, Sanechips CR Rel-17 38.331 17.0.0 3048 - F

# Annex A

TP for handling of sl-TxPoolSelectedNormal resource pool, and sl-TxPoolSelectedNormalPS power saving resource pool.

|  |
| --- |
| TEXT PROPOSAL START |

5.8.8 Sidelink communication transmission

A UE capable of NR sidelink communication that is configured by upper layers to transmit NR sidelink communication and has related data to be transmitted shall:

1> if the conditions for NR sidelink communication operation as defined in 5.8.2 are met:

2> if the frequency used for NR sidelink communication is included in *sl-FreqInfoToAddModList* in *sl-ConfigDedicatedNR* within *RRCReconfiguration* message or includedin *sl-ConfigCommonNR* within *SIB12*:

3> if the UE is in RRC\_CONNECTED and uses the frequency included in *sl-ConfigDedicatedNR* within *RRCReconfiguration* message:

4> if the UE is configured with *sl-ScheduledConfig*:

5> if T310 for MCG or T311 is running; and if *sl-TxPoolExceptional* is included in *sl-FreqInfoList* for the concerned frequency in *SIB12* or included in *sl-ConfigDedicatedNR* in *RRCReconfiguration*; or

5> if T301 is running and the cell on which the UE initiated RRC connection re-establishment provides *SIB12* including *sl-TxPoolExceptional* for the concerned frequency; or

5> if T304 for MCG is running and the UE is configured with *sl-TxPoolExceptional* included in *sl-ConfigDedicatedNR* for the concerned frequency in *RRCReconfiguration*:

6> configure lower layers to perform the sidelink resource allocation mode 2 based on random selection using the pool of resources indicated by *sl-TxPoolExceptional* as defined in TS 38.321 [3];

5> else:

6> configure lower layers to perform the sidelink resource allocation mode 1 for NR sidelink communication;

5> if T311 is running, configure the lower layers to release the resources indicated by *rrc-ConfiguredSidelinkGrant* (if any);

4> if the UE is configured with *sl-UE-SelectedConfig*:

5> if the UE selects to perform sensing based operation (i.e. full sensing or partial sensing) and is allowed by a pool(s) of resources configured in *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS*;

6> if a result of sensing on the resources configured in *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency included in *sl-ConfigDedicatedNR* within *RRCReconfiguration* is not available in accordance with TS 38.214 [19];

7> if *sl-TxPoolExceptional* for the concerned frequency is included in *RRCReconfiguration*; or

7> if the PCell provides *SIB12* including *sl-TxPoolExceptional* in *sl-FreqInfoList* for the concerned frequency:

8> configure lower layers to perform the sidelink resource allocation mode 2 based on random selection using the pool of resources indicated by *sl-TxPoolExceptional* as defined in TS 38.321 [3];

6> else, if the *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency is included in the *sl-ConfigDedicatedNR* within *RRCReconfiguration*:

7> configure lower layers to perform the sidelink resource allocation mode 2 based on full sensing (as defined in TS 38.321 [3] and TS 38.214 [19]) using the pools of resources indicated by *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency if *sl-AllowedResourceSelectionConfig* is not configured; or

7> configure lower layers to perform full sensing or partial sensing according to *sl-AllowedResourceSelectionConfig* (as defined in TS 38.321 [3] and TS 38.214 [19]) using the pools of resources indicated by *sl-TxPoolSelectedNormalPS* and/or by *sl-TxPoolSelectedNormal* for the concerned frequency;

5> else if the UE selects to perform random selection for transmission and is allowed by a pool(s) of resources configured in *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS*:

6> configure lower layers to perform random selection using the pools of resources indicated by *sl-TxPoolSelectedNormalPS* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency;

3> else:

4> if the cell chosen for NR sidelink communication transmission provides *SIB12*:

5> if *SIB12* includes *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency and the UE selects to perform sensing based operation (i.e. full sensing or partial sensing) for transmission and is allowed by a pool(s) of resources configured in *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS:*

6> if a result of sensing on the resources configured in the *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* is available in accordance with TS 38.214 [19]:

7> configure lower layers to perform the sidelink resource allocation mode 2 based on full sensing using the pools of resources indicated by *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency as defined in TS 38.321 [3] if *sl-AllowedResourceSelectionConfig* is not configured; or

7> configure lower layers to perform full sensing or partial sensing according to *sl-AllowedResourceSelectionConfig* using the pools of resources indicated by *sl-TxPoolSelectedNormalPS* and/or by *sl-TxPoolSelectedNormal* for the concerned frequency as defined in TS 38.321 [3];

6> else if *SIB12* includes *sl-TxPoolExceptional* for the concerned frequency:

7> if a result of sensing on the resources configured in *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency in *SIB12* is not available in accordance with TS 38.214 [19]:

8> configure lower layers to perform the sidelink resource allocation mode 2 based on random selection (as defined in TS 38.321 [3]) using one of the pools of resources indicated by *sl-TxPoolExceptional* for the concerned frequency;

5> if *SIB12* includes *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency and the UE selects to perform random selection for transmission and is allowed by a pool(s) of resources configured in *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS:*

6> configure lower layers to perform random selection using the pools of resources indicated by *sl-TxPoolSelectedNormalPS* and/or *sl-TxPoolSelectedNormalPS* for the concerned frequency;

5> else if *SIB12* includes *sl-TxPoolExceptional* for the concerned frequency

6> from the moment the UE initiates RRC connection establishment or RRC connection resume, until receiving an *RRCReconfiguration* including *sl-ConfigDedicatedNR*, or receiving an *RRCRelease* or an *RRCReject*;

7> configure lower layers to perform the sidelink resource allocation mode 2 based on random selection (as defined in TS 38.321 [3]) using one of the pools of resources indicated by *sl-TxPoolExceptional* for the concerned frequency;

2> else:

3> configure lower layers to perform the sidelink resource allocation mode 2 based on sensing (as defined in TS 38.321 [3] and TS 38.214 [19]) using the pools of resources indicated by *sl-TxPoolSelectedNormal* and/or *sl-TxPoolSelectedNormalPS* in *SidelinkPreconfigNR* for the concerned frequency if *sl-AllowedResourceSelectionConfig* is not configured; or

3> configure lower layers to perform the sidelink resource allocation mode 2 based on resource selection operation according to *sl-AllowedResourceSelectionConfig* (as defined in TS 38.321 [3] and TS 38.213 [13]) using the pools of resources indicated by *sl-TxPoolSelectedNormal* and/or by *sl-TxPoolSelectedNormalPS* in *SidelinkPreconfigNR* for the concerned frequency.

NOTE 1: The UE continues to use resources configured in *rrc-ConfiguredSidelinkGrant* (while T310 is running) until it is released (i.e. until T310 has expired). The UE does not use sidelink configured grant type 2 resources while T310 is running.

NOTE 2: In case of RRC reconfiguration with sync, the UE uses resources configured in *rrc-ConfiguredSidelinkGrant* (while T304 on the MCG is running) if provided by the target cell.

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

If configured to perform sidelink resource allocation mode 2, the UE capable of NR sidelink communication that is configured by upper layers to transmit NR sidelink communication shall perform sensing or resource selection operation according to *sl-AllowedResourceSelectionConfig* on all pools of resources which may be used for transmission of the sidelink control information and the corresponding data. The pools of resources are indicated by *SidelinkPreconfigNR*, *sl-TxPoolSelectedNormal*/*sl-TxPoolSelectedNormalPS* in *sl-ConfigDedicatedNR*, or *sl-TxPoolSelectedNormal*/*sl-TxPoolSelectedNormalPS* in *SIB12* for the concerned frequency, as configured above.

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| NEXT TEXT PROPOSAL |

| *SL-PBPS-CPS-Config* field descriptions |
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| ***sl-Additional-PBPS-Occasion***  Indicates that UE additionally monitors periodic sensing occasions that correspond to a set of values. (see TS 38.214 [19], clause 8.1.4). |
| ***sl-AllowedResourceSelectionConfig***  Indicates the allowed resource selection mechanism(s), i.e. full sensing only, partial sensing only, random resource selection only, or any combination(s) thereof. (see TS 38.214 [19], clause 8.1.4). Only c1, c4 , c5 or c7 can be configured for a resource pool included in *sl-TxPoolSelectedNormal*. If this field is absent for a resource pool included in *sl-TxPoolSelectedNormal* or *sl-TxPoolSelectedNormalPS*, only [full sensing] is allowed in the corresponding resource pool.  c1: only full sensing allowed  c2: only partial sensing allowed  c3: only random selection allowed  c4: full sensing+random selection allowed  c5: full sensing+ partial sensing allowed  c6: partial sensing + random selection allowed  c7: full sensing+ partial sensing + random selection allowed. |

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| TEXT PROPOSAL END |

# Annex B

TP for describing UE behavior:

5.8.X Sidelink DRX

A UE capable of NR sidelink DRX shall:

1. if *sl-DRX-ConfigCommon-GC-BC* is included in *SIB12-IEs*:

2> perform sidelink DRX operation for groupcast and broadcast according to *sl-DRX-ConfigCommon-GC-BC*;

1. else if the cell chosen for NR sidelink communication provides *SIB12* and *sl-DRX-ConfigCommon-GC-BC* is not included in *SIB12-IEs:*

2> not perform sidelink DRX operation for groupcast and broadcast;

1> else:

2> perform sidelink DRX operation for groupcast and broadcast according to *SL-PreconfigurationNR*, as defined in sub-clause 9.3;

# Annex C

TP for solve the partial coverage GC/BC SL DRX configuration issue.

5.8.9.4.2 Actions related to reception of *MasterInformationBlockSidelink* message

Upon receiving *MasterInformationBlockSidelink*, the UE shall:

1> apply the values included in the received *MasterInformationBlockSidelink* message.

1> if *sl-DRX-enable-GC-BC* is set to *true:*

2> perform SL DRX for GC and BC according to precofiguration;

1> else:

2> doesn’t perform SL DRX for GC and BC according to precofiguration;

5.8.9.4.3 Transmission of *MasterInformationBlockSidelink* message

The UE shall set the contents of the *MasterInformationBlockSidelink* message as follows:

1> if in coverage on the frequency used for the NR sidelink communication as defined in TS 38.304 [20].

2> set *inCoverage* to *true*;

2> if *tdd-UL-DL-ConfigurationCommon* is included in the received *SIB1*:

3> set *sl-TDD-Config* to the value representing the same meaning as that is included in *tdd-UL-DL-ConfigurationCommon,* as described in TS 38.213, clause 16.1 [13];

2> else:

3> set *sl-TDD-Config* to the value as specified in TS 38.213 [13], clause 16.1;

2> if *syncInfoReserved* is included in an entry of configured *sl-SyncConfigList* corresponding to the concerned frequency from the received *SIB12:*

3> set *reservedBits* to the value of *syncInfoReserved* in the received *SIB12*;

2> else*:*

3> set all bits in *reservedBits* to 0;

2> if *sl-DRX-ConfigCommon-GC-BC* is included in *SIB12-IEs*:

3> set *sl-DRX-enable-GC-BC* to *true*;

2> else:

3> set *sl-DRX-enable-GC-BC* to *false*;

1> else if out of coverage on the frequency used for NR sidelink communication as defined in TS 38.304 [20]; and the concerned frequency is included in *sl-FreqInfoToAddModList* in *RRCReconfiguration* or in *sl-FreqInfoList* within *SIB12*:

2> set *inCoverage* to *true*;

2> set *reservedBits* to the value of the corresponding field included in the preconfigured sidelink parameters (i.e. *sl-PreconfigGeneral* in *SidelinkPreconfigNR* defined in 9.3);

2> set *sl-TDD-Config* to the value representing the same meaning as that is included in the corresponding field included in the preconfigured sidelink parameters (i.e. *sl-PreconfigGeneral* in *SL-PreconfigurationNR* defined in 9.3) as described in TS 38.213, clause 16.1 [13];

1> else if out of coverage on the frequency used for NR sidelink communication as defined in TS 38.304 [20]; and the UE selects GNSS as the synchronization reference and *sl-SSB-TimeAllocation3* is not configured for the frequency used in *SidelinkPreconfigNR*:

2> set *inCoverage* to *true*;

2> set *reservedBits* to the value of the corresponding field included in the preconfigured sidelink parameters (i.e. *sl-PreconfigGeneral* in *SidelinkPreconfigNR* defined in 9.3);

2> set *sl-TDD-Config* to the value representing the same meaning as that is included in the corresponding field included in the preconfigured sidelink parameters (i.e. *sl-PreconfigGeneral* in *SL-PreconfigurationNR* defined in 9.3) as described in TS 38.213, clause 16.1 [13];

1> else if the UE has a selected SyncRef UE (as defined in 5.8.6):

2> set *inCoverage* to *false*;

2> set *sl-TDD-Config* and *reservedBits* to the value of the corresponding field included in the received *MasterInformationBlockSidelink*;

1> else:

2> set *inCoverage* to *false*;

2> set *reservedBits* to the value of the corresponding field included in the preconfigured sidelink parameters (i.e. *sl-PreconfigGeneral* in *SidelinkPreconfigNR* defined in 9.3);

2> set *sl-TDD-Config* to the value representing the same meaning as that is included in the corresponding field included in the preconfigured sidelink parameters (i.e. *sl-PreconfigGeneral* in *SL-PreconfigurationNR* defined in 9.3) as described in TS 38.213, clause 16.1 [13];

1> set *directFrameNumber* and *slotIndex* according to the slot used to transmit the SLSS, as specified in 5.8.5.3;

1> submit the *MasterInformationBlockSidelink* to lower layers for transmission upon which the procedure ends;

6.6.2 Message definitions

– *MasterInformationBlockSidelink*

The *MasterInformationBlockSidelink* includes the system information transmitted by a UE via SL-BCH.

Signalling radio bearer: N/A

RLC-SAP: TM

Logical channel: SBCCH

Direction: UE to UE

***MasterInformationBlockSidelink***

-- ASN1START

-- TAG-MASTERINFORMATIONBLOCKSIDELINK-START

MasterInformationBlockSidelink ::= SEQUENCE {

sl-TDD-Config-r16 BIT STRING (SIZE (12)),

inCoverage-r16 BOOLEAN,

directFrameNumber-r16 BIT STRING (SIZE (10)),

slotIndex-r16 BIT STRING (SIZE (7)),

sl-DRX-enable-GC-BC ENUMERATED {true},

reservedBits-r17 BIT STRING (SIZE (1)),

}

-- TAG-MASTERINFORMATIONBLOCKSIDELINK-STOP

-- ASN1STOP

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| --- |
| ***MasterInformationBlockSidelink* field descriptions** |
| ***directFrameNumber***  Indicates the frame number in which S-SSB transmitted. |
| ***inCoverage***  Value true indicates that the UE transmitting the *MasterInformationBlockSidelink* is in network coverage, or UE selects GNSS timing as the synchronization reference source. |
| ***slotIndex***  Indicates the slot index in which S-SSB transmitted. |
| ***sl-DRX-enable-GC-BC***  Indicates whether the SL DRX for BC/GC is enabled or not |

# Annex D

##### 5.8.9.6.3 Actions related to reception of *UEAssistanceInformationSidelink* message

For sidelink unicast, when a UE is in RRC\_CONNECTED and is performing sidelink operation with resource allocation mode 1, it may report the sidelink DRX assistance information received within the *UEAssistanceInformationSidelink* from its peer UE to the network as specified in 5.8.3. For sidelink unicast, when a UE is in RRC\_CONNECTED and is performing sidelink operation with resource allocation mode 2 or is in RRC\_IDLE or RRC\_INACTIVE or out of coverage, regardless of whether the UE has obtained the sidelink DRX assistance information from the *UEAssistanceInformationSidelink* transmitted from its peer UE or not, it may determine the sidelink DRX configuration *SL-DRX-ConfigUC* for its peer UE based on UE implementation.

NOTE: When UE determines the sidelink DRX configuration for its peer UE, it may take the sidelink DRX assistance information that is received from its peer UE into account.