**3GPP TSG-RAN2 Meeting 119b-e** **R2-2210933**

**Online, 10th – 19th October, 2022**

**Agenda item: 6.15.3**

**Source: LG**

**Title: Summary of [AT119-e][502][V2X/SL] 38.321 corrections (LG)**

**Document for: Discussion and Decision**

1. Introduction

This is the summary of below offline discussion.

* [AT119bis-e][502][V2X/SL] 38.321 corrections (LG)

**Scope:** Discuss proposed corrections in [R2-2210188](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210188.zip), [R2-2209388](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209388.zip), [R2-2209542](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209542.zip), [R2-2209543](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209543.zip), [R2-2209544](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209544.zip), [R2-2209675](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209675.zip), [R2-2209741](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209741.zip), [R2-2209853](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209853.zip), [R2-2209859](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209859.zip), [R2-2209874](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209874.zip), [R2-2209895](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209895.zip), [R2-2210113](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210113.zip), [R2-2210374](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210374.zip), [R2-2210382](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210382.zip), [R2-2210545](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210545.zip), [R2-2210558](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210558.zip), [R2-2210608](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210608.zip), P1 in [R2-2209387](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209387.zip), P1 in [R2-2209684](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209684.zip), and P2, P3 in [R2-2210779](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210779.zip). Merge agreeable corrections in a CR as much as possible (we may have separate CR if required, it’s up to rapporteur).

**Intended outcome:** 38.321 CR in [R2-2210932](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210932.zip) and discussion summary in [R2-2210933](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210933.zip) (if needed). Email approval.

**Deadline:** 10/17 12:00 (UTC)

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1. Discussion

## 2.1 For changes in [R2-2210188](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2208281.zip)

### 2.1.1 1st change:

**Reason for change**:

When UE-A receives a request message based on MAC CE only from UE-B, if the MAC layer of UE-A does not transfer the indicated values ​​of the following parameters included in the request message to the physical layer, it is unclear what values ​​the following parameters should be assumed and generated when the physical layer generates a resource set in the current RAN1 specification (TS 38.214). Specifically, according to TS 38.214 extracted below, when UE-A generates resource set information based on request message received from UE-B, UE-A's physical layer receives values for the following parameters used to generate the resource set information from the MAC layer. In conclusion, it is inconsistent with the basic principle of request-based IUC information generation that the physical layer of UE-A determines the corresponding values ​​as UE implementation.

|  |
| --- |
| 8.1.4A UE procedure for determining a set of preferred or non-preferred resources for another UE's transmission  When this procedure is triggered, the following parameters are provided by the higher layer:  - the resource pool from which the preferred or non-preferred resources are to be determined;  - the resource selection window within which the preferred or non-preferred resources are to be determined;  - the resource set type (either preferred or non-preferred resource set);  - if the resource set type indicates preferred set, then the higher layer additionally provides the following parameters:  - L1 priority, ;  - the number of sub-channels to be used for the PSSCH/PSCCH transmission in a slot, ;  - the resource reservation period, , if present.  The value of is determined by the UE according to clause 8.1.5. |

**Change**: Added a new section (5.22.1.x UE procedure for indicating an information to be used for physical layer to determine a set of preferred or non-preferred resources)

5.22.1.x UE procedure for indicating an information to be used for physical layer to determine a set of preferred or non-preferred resources

The MAC entity shall:

1> if configured by RRC, *sl-Determine Resource Type* set to *ueb* and an SL-IUC request is received for the Source Layer-2 ID and Destination Layer-2 ID pair of a unicast, and if the *resourceSetType* field of the SL-IUC request is set to 0:

2> indicate the resource selection window of the SL-IUC request within which the preferred resources are to be determined to the physical layer;

2> indicate the resource set type (i.e., preferred resource set) of the SL-IUC request to the physical layer;

2> indicate L1 priority, of the SL-IUC request to the physical layer;

2> indicate the number of sub-channels to be used for the PSSCH/PSCCH transmission in a slot, of the SL-IUC request to the physical layer;

2> indicate the resource reservation period, , of the SL-IUC request, if present to the physical layer.

1> if configured by RRC, *sl-Determine Resource Type* set to *ueb* and an SL-IUC request is received for the Source Layer-2 ID and Destination Layer-2 ID pair of a unicast, and if the *resourceSetType* field of the SL-IUC request is set to 1:

2> indicate the resource set type (i.e., non-preferred resource set) of the SL-IUC request to the physical layer;

2> indicate the resource selection window of the SL-IUC request within which the non-preferred resources are to be determined to the physical layer.

The MAC entity shall:

1> if configured by RRC, *sl-IUC-Explicit* set to *enabled* and an SL-IUC request is received on a pool of resources for the Source Layer-2 ID and Destination Layer-2 ID pair of a unicast:

2> indicate the pool of resources within which a set of preferred or non-preferred resources are to be determined to the physical layer.

1> if configured by RRC, *sl-IUC-Condition* set to *enabled,* and if an SL-IUC Information is to be transmitted in a pool of resources:

2> indicate the pool of resources within which a set of preferred or non-preferred resources are to be determined to the physical layer.

**Q1: Would your company agree to the 1st change proposed in** [**R2-2210188**](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2208281.zip)**?**

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| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
|  |  |  |

**[Summary]**

### 2.1.2 2nd change:

**Reason for change**: A criterion for determining that UE-B can use for its own resource (re)selection among the preferred RSC SET-related resources received from UE-A has been added in TS 38.321. However, minor modification is required to align TS 38.214 and TS 38.321.

**Change**: The NOTE of 5.22.1.1 can be modified to match TS 38.321 and TS 38.214.

NOTE 3B3: The UE is not required to use any resource from the preferred resource set in its resource (re-)selection if that resource is earlier than (++) after the resource of Inter-UE Coordination Information transmission, where is equal to (+) when only MAC CE is used for Inter-UE Coordination Information transmission, or is equal to when MAC CE and SCI format 2-C are both used for Inter-UE Coordination Information transmission. The case when is equal to is assuming that SCI format 2-C is received. and are specified in clause 8.1.4 of TS 38.214 [7].

**Q2: Would your company agree to the 2nd change proposed in** [**R2-2210188**](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2208281.zip)**?**

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| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
|  |  |  |

**[Summary]**

### 2.1.3 3rd change:

**Reason for change**:

Below RAN1 agreements are not reflected in current TS 38.321, so it needs to be reflected. That is, request message transmission and request-based IUC information transmission are supported only in UC format. In addition, during condition-based IUC operation, preferred resource set transmission is supported only in UC manner, and non-preferred resource set transmission is supported in UC/GC/BC manner.

|  |
| --- |
| ***Agreement:***  *For Scheme 1, unicast is supported for an explicit request transmission for inter-UE coordination information*   * *Unicast is used for the inter-UE coordination information transmission triggered by the explicit request*   ***Working Assumption:***  *For Scheme 1, following cast type(s) are supported for inter-UE coordination information transmission triggered by a condition other than explicit request reception*   * *Groupcast/Broadcast for non-preferred resource set, FFS for preferred resource set*   + *FFS: Under which conditions groupcast/broadcast can be supported* * *Unicast*   + *FFS: Under which conditions unicast can be supported*   ***Conclusion:***  *For cast type(s) of inter-UE coordination information with preferred resource set triggered by a condition other than explicit request reception, there is no consensus in RAN1 on the support of groupcast or broadcast for preferred resource set* |

**Change**: New NOTE can be added to 5.22.1.1 to reflect RAN1's ​​agreements.

NOTE 3B4: For Scheme1, only unicast is used for both the Inter-UE Coordination Request transmission and the Inter-UE Coordination Information transmission triggered by the explicit request. For Scheme1, only unicast is used for the Inter-UE Coordination Information transmission with preferred resource set triggered by a condition other than explicit request. For Scheme1, one of unicast, groupcast or broadcast can be used for the Inter-UE Coordination Information transmission with non-preferred resource set triggered by a condition other than explicit request.

**Q3: Would your company agree to the 3rd change proposed in** [**R2-2210188**](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2208281.zip)**?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
|  |  |  |

**[Summary]**

## 2.2 For changes in [R2-2209388](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209388.zip)

### 2.2.1 1st change:

**Reason for change**: In 5.7, it is agreed to remove the “due to UL/SL prioritization” to save additional effort on discussing of the reason of why a HARQ feedback is not transmitted. While for the start of *drx-RetransmissionTimerSL*, the removing of “due to UL/SL prioritization” may cause confusion on the handling of “ACK” feedback is transmitted, i.e., “if a HARQ NACK feedback for the corresponding HARQ process is not transmitted on PUCCH” may be interpreted as “if a HARQ ACK feedback for the corresponding HARQ process is transmitted on PUCCH”. So some rewording is needed to make the specification clearer.

**Change**: In section 5.7, rewording the sentence as “if a HARQ NACK feedback for the corresponding HARQ process is generated but not transmitted on PUCCH” for clarification.

1> if a *drx-HARQ-RTT-TimerSL* expires:

2> if a HARQ NACK feedback for the corresponding HARQ process is transmitted on PUCCH; or

2> if a HARQ NACK feedback for the corresponding HARQ process is generated but not transmitted on PUCCH; or

**Q4: Would your company agree to the 1st change proposed in R2-2209388?**

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| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
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**[Summary]**

### 2.2.2 2nd change:

**Reason for change**: In 5.22.1.1, for scheme-1 IUC, according to the current specification, during resource selection for re-transmission if a preferred resource set is received and the UE has sensing result when performing retransmission resource selection, it has to fulfill both conditions 1)if the UE has own sensing result and a preferred resource set is received; 2)if there are available resources left in the intersection of the received preferred resource set and the resources indicated by the physical layer as specified for more transmission opportunities. That is not aligned with RAN1 agreement since according to RAN1 agreement, if no further resources available in the intersection of S\_A and the received preferred resource set, the UE can select resource from S\_A but outside the intersection, not only for initial transmission, but also for re-transmission;

**Change**: In section 5.22.1.1, change the condition “4> if there are available resources left in the intersection of the received preferred resource set and the resources indicated by the physical layer” and the following UE behavior “5> randomly select the time and frequency resources” to level 5> and 6>. And also remove the “and” in the original level 4> condition;

4> if configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set and when the UE has own sensing result as specified in clause 8.1.4 of TS 38.214 [7] and if a preferred resource set is received from a UE:

5> if there are available resources left in the intersection of the received preferred resource set and the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7] for more transmission opportunities:

6> randomly select the time and frequency resources for one or more transmission opportunities from the available resources within the intersection for a MAC PDU to be transmitted to the UE providing the preferred resource set, according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier by ensuring the minimum time gap between any two selected resources in case that PSFCH is configured for this pool of resources and that a retransmission resource can be indicated by the time resource assignment of a prior SCI according to clause 8.3.1.1 of TS 38.212 [9];

**Q5: Would your company agree to the 2nd change proposed in R2-2209388?**

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| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
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**[Summary]**

### 2.2.3 3rd change:

**Reason for change**: In 5.22.1.3.1, the UE should “obtain the MAC PDU to transmit from the Multiplexing and assembly entity” if there is a sidelink grant, according to current specification, the UE still try to obtain MAC PDU from the Multiplexing and assembly entity when the SL grant is ignored since no destination in SL DRX active time, which is wrong;

**Change**: In section 5.22.1.3.1, add an “else” condition for the following procedure on “obtain the MAC PDU to transmit from the Multiplexing and assembly entity…”;

2> if all PSCCH duration(s) and PSSCH duration(s) for initial transmission of a MAC PDU of the dynamic sidelink grant or the configured sidelink grant is not in SL DRX Active time as specified in clause 5.28.3 of the destination that has data to be sent:

3> ignore the sidelink grant.

NOTE 1A: The Sidelink HARQ Entity will associate the selected sidelink grant to the Sidelink process determined by the MAC entity.

2> else:

3> obtain the MAC PDU to transmit from the Multiplexing and assembly entity, if any;

3> if a MAC PDU to transmit has been obtained:

4> if a HARQ Process ID has been set for the sidelink grant:

5> (re-)associate the HARQ Process ID corresponding to the sidelink grant to the Sidelink process.

**Q6: Would your company agree to the 3rd change proposed in R2-2209388?**

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| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

### 2.2.4 4th change:

**Reason for change**: In 5.22.1.5, it is agreed the DRX Command MAC CE reuses the SR configuration of CSI report. There may be a case that the SR configuration of CSI report is not available since CSI report is not enabled by gNB. So clarification is needed to prevent the “zero SR configuration” for SL DRX Command indication.

**Change**: In section 5.22.1.5, add the sentence “The SL DRX Command indication is mapped to one SR configuration for all PC5-RRC connections.” to prevent the “zero SR configuration” available for SL DRX Command indication issue.

Each sidelink logical channel may be mapped to zero or one SR configuration, which is configured by RRC. If the SL-CSI reporting procedure is enabled by RRC, the SL-CSI reporting is mapped to one SR configuration for all PC5-RRC connections. The SR configuration of the SL-CSI reporting triggered according to 5.22.1.7 is considered as corresponding SR configuration for the triggered SR (clause 5.4.4). The value of the priority of the triggered SR triggered by SL-CSI reporting corresponds to the value of the priority of the Sidelink CSI Reporting MAC CE. The SL DRX Command indication is mapped to one SR configuration for all PC5-RRC connections. The SR configuration of the SL-CSI reporting is considered as corresponding SR configuration for the triggered SR of SL-DRX Command indication triggered according to 5.28.3. The value of the priority of the triggered SR triggered by SL-DRX Command indication corresponds to the value of the priority of the Sidelink DRX Command MAC CE.

**Q7: Would your company agree to the 4th change proposed in R2-2209388?**

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| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

### 2.2.5 5th change, **related contributions: R2-2209853,**

**Reason for change**: In 5.28.2, the RTT timer name has been updated to *sl-drx-HARQ-RTT-Timer1* and *sl-drx-HARQ-RTT-Timer2* for HARQ feedback enabled and disabled cases. However, besides the update on the general description of how to set RTT timer, each RTT timer name at the description of UE starting RTT timer procedure is also updated, which is unnecessary and may cause problem on the RTT timer starting in case the RTT timer is derived from SCI or fixed to “0”.

**Change**: In section 5.28.2, change *sl-drx-HARQ-RTT-Timer1* and *sl-drx-HARQ-RTT-Timer2* in the procedure text for RTT timer start.

1> if an *sl-drx-HARQ-RTT-Timer* expires:

2> if the data of the corresponding Sidelink process was not successfully decoded or if the HARQ feedback (i.e., negative acknowledgement) is not transmitted for unicast due to UL/SL prioritization:

3> start the *sl-drx-RetransmissionTimer/sl-DRX-GC-RetransmissionTimer* for the corresponding Sidelink process in the first slot after the expiry of *sl-drx-HARQ-RTT-Timer*.

When the cast type is groupcast or broadcast as indicated by upper layer, the sl-drx-StartOffset and sl-drx-SlotOffset are derived from the following equations:

*sl-drx-StartOffset* (ms) = Destination Layer-2 ID modulo *sl-DRX-GC-BC-Cycle* (ms).

*sl-drx-SlotOffset* (ms) = Destination Layer-2 ID modulo the number of slots in one subframe (ms).

1> if the SL DRX cycle is used, and [(DFN × 10) + subframe number] modulo (*sl-drx-Cycle* or *sl-DRX-GC-BC-Cycle*) = *sl-drx-StartOffset*:

2> start *sl-drx-onDurationTimer/sl-DRX-GC-BC-OndurationTimer* after *sl-drx-SlotOffset* from the beginning of the subframe.

1> if an SL DRX is in Active Time:

2> monitor the SCI (i.e., 1st stage SCI and 2nd stage SCI) in this SL DRX.

2> if the SCI indicates a new SL transmission:

3> if Source Layer-1 ID of the SCI is equal to the 8 LSB of the intended Destination Layer-2 ID and Destination Layer-1 ID of the SCI is equal to the 16 LSB of the intended Source Layer-2 ID and the cast type indicator in the SCI is set to unicast:

4> start or restart *sl-drx-InactivityTimer* for the corresponding Source Layer-2 ID and Destination Layer-2 ID pair in the first slot after SCI reception.

3> if Destination Layer-1 ID of the SCI (i.e., 2nd stage SCI) is equal to the 16 LSB of the intended Destination Layer-1 ID and the cast type indicator in the SCI is set to groupcast:

4> select *sl-drx-InactivityTimer* whose length of the *sl-drx-InactivityTimer* is the largest one among multiple SL DRX Inactivity timers that are mapped to multiple SL-QoS-Profiles of Destination Layer-2 ID associated with the Destination Layer-1 ID of the SCI; and

4> start or restart *sl-drx-InactivityTimer* for the corresponding Destination Layer-2 ID in the first slot after SCI reception.

2> if the SCI indicates an SL transmission:

3> if a next retransmission opportunity is indicated in the SCI:

4> derive the *sl-drx-HARQ-RTT-Timer* from the retransmission resource timing of the next retransmission resource in the SCI.

3> else if PSFCH resource is configured for the SL grant associated to the SCI:

4> set the *sl-drx-HARQ-RTT-Timer* based on *sl-drx-HARQ-RTT-Timer1* configured by upper layer when HARQ feedback is enabled, or based on *sl-drx-HARQ-RTT-Timer2* configured by upper layerwhen HARQ feedback is disabled, for resource pool configured with PSFCH.

3> else (i.e., if PSFCH resource is not configured for the SL grant associated to the SCI):

4> set the *sl-drx-HARQ-RTT-Timer* as 0 slots.

3> if PSFCH resource is not configured for the SL grant associated to the SCI:

4> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the slot following the end of PSSCH transmission (i.e., currently received PSSCH).

3> if PSFCH resource is configured for the SL grant associated to the SCI:

4> if HARQ feedback is enabled by the SCI and the cast type indicator in the SCI is set to unicast; or

4> if HARQ feedback is enabled by the SCI and the cast type indicator in the SCI is set to groupcast and positive-negative acknowledgement is selected;

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH transmission carrying the SL HARQ feedback; or

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH resource for the SL HARQ feedback when the SL HARQ feedback is not transmitted due to UL/SL prioritization;

4> if HARQ feedback is enabled by the SCI and the cast type indicator in the SCI is set to groupcast and negative-only acknowledgement is selected;

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH transmission carrying the SL HARQ feedback; or

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH resource for the SL HARQ feedback when the SL HARQ feedback is not transmitted due to UL/SL prioritization; or

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH resource for the SL HARQ feedback when the SL HARQ feedback is a positive acknowledgement.

4> if HARQ feedback is disabled by the SCI and the resource(s) for one or more retransmission opportunities is not scheduled in the SCI:

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the slot following the end of PSFCH resource.

4> if HARQ feedback is disabled by the SCI and the resource(s) for one or more retransmission opportunities is scheduled in the SCI:

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the slot following the end of PSSCH transmission (i.e., currently received PSSCH).

**Q8: Would your company agree to the 5th change proposed in R2-2209388?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Yes with comment | The description of the setting of sl-drx-HARQ-RTT-Timer is preferred to adopt ASUSTeK 's correction below:  4> set the *sl-drx-HARQ-RTT-Timer* based on *sl-drx-HARQ-RTT-Timer1* configured by upper layer if the cast type associated with the SCI is unicast or *sl-DRX-GC-HARQ-RTT-Timer1* configured by upper layerif the cast type associated with the SCI is groupcast when HARQ feedback is enabled, or based on *sl-drx-HARQ-RTT-Timer2* configured by upper layer if the cast type associated with the SCI is unicast or *sl-DRX-GC-HARQ-RTT-Timer2* configured by upper layerif the cast type associated with the SCI is groupcast when HARQ feedback is disabled, for resource pool configured with PSFCH. |
|  |  |  |

**[Summary]**

### 2.2.6 6th change, related contributions:

**Reason for change**: In section 5.28.2, the down-selection of on\_duration timer and Cycle for groupcast and broadcast are coupled with each other, i.e., the condition for “if single/multiple SL DRX Cycle(s)…” are checked for both the on\_duration timer and Cycle which is not correct considering the case that single Cycle + multiple on\_Duration timer or multiple Cycles + single on\_Duration timers is also possible.

**Change**: In section 5.28.2, split the down-selection of Cycle and on\_duration timer into independent conditions.

When one or multiple SL DRX is configured, the MAC entity shall:

1> if a single *sl-DRX-GC-BC-Cycle* that is mapped with one or multiple *SL-QoS-Profile* is configured to a Destination and interested cast type is associated to groupcast or broadcast:

2> select the *sl-DRX-GC-BC-Cycle* that is mapped with one or multiple *SL-QoS-Profile* associated with the Destination.1> else if multiple *sl-DRX-GC-BC-Cycle* that are mapped with multiple *SL-QoS-Profile* are associated to a Destination Layer-2 ID and interested cast type is associated to groupcast or broadcast:

2> select the *sl-DRX-GC-BC-Cycle* whose length is the shortest one among multiple *sl-DRX-GC-BC-Cycle* that are mapped with multiple *SL-QoS-Profile* associated with the Destination Layer-2 ID.

1> if a single *sl-DRX-GC-BC-OndurationTimer* that is mapped with one or multiple *SL-QoS-Profile* is configured to a Destination and interested cast type is associated to groupcast or broadcast:

2> select the *sl-DRX-GC-BC-OndurationTimer* that is mapped with one or multiple *SL-QoS-Profile* associated with the Destination

1> else if multiple *sl-DRX-GC-BC-OndurationTimer* that are mapped with multiple *SL-QoS-Profile* are associated to a Destination Layer-2 ID and interested cast type is associated to groupcast or broadcast:

2> select the *sl-DRX-GC-BC-OndurationTimer* whose length is the longest one among multiple *sl-DRX-GC-BC-OndurationTimer* that are mapped with multiple *SL-QoS-Profile* associated with the Destination Layer-2 ID.

**Q9: Would your company agree to the 6th change proposed in R2-2209388?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.3 For changes in [R2-2209542](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209542.zip)

### 2.3.1 change

**Reason for change**:

In RAN2#116-e, it was agreed that UE shall select initial transmission resource only in the RX UE’s SL DRX active time, as follows.

1: *TX UE shall select initial transmission resource only in the RX UE’s active time where SL DRX timers are running now or will be running in future (at least on-duration timer). Further details of active time can be considered later. FFS on spec impact.*

According to current TS38.321, it is specified that all the transmission resources including initial transmission and retransmission(s) are within the SL DRX active time, which does not align with the existing agreement.

**Change**: Further clarify that if HARQ retransmissions are selected, UE shall select time and frequency resources from the available resources such that the first resource in time domain occurs within the SL DRX active time.

5> if transmission based on random selection is configured by upper layers and there are available resources left in the resource pool for more transmission opportunities:

6> randomly select the time and frequency resources for one or more transmission opportunities from the available resources such that the resource which comes first in time occurs within the SL DRX Active time as specified in clause 5.28.2 of the destination UE selected for indicating to the physical layer the SL DRX Active time above, according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier by ensuring the minimum time gap between any two selected resources in case that PSFCH is configured for this pool of resources and that a retransmission resource can be indicated by the time resource assignment of a prior SCI according to clause 8.3.1.1 of TS 38.212 [9].

**Q10: Would your company agree to the change proposed in R2-2209542?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | Although RAN2 agreement itself is misleading, the intention of this RAN2 agreement was that the initial resource should at least be included in the current active time, not the future active. RAN2 has never made an agreement that the retransmission resource cannot be included in the current active time. |
|  |  |  |

**[Summary]**

## 2.4 For changes in [R2-2209543](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209543.zip)

### 2.4.1 change

**Reason for change**: Resource (re-)selection procedures for UE configured with neither SL DRX nor IUC are missing in current TS38.321.

**Change**: Add resource (re-)selection procedures for UE configured with neither SL DRX nor IUC.

3> if one or more HARQ retransmissions are selected:

4> if neither sl-InterUE-CoordinationScheme1 enabling reception/transmission of preferred resource set and non-preferred resource set nor SL DRX is configured by RRC:

5> if transmission based on sensing is configured by upper layers and there are available resources left in the resources indicated by the physical layer according to clause 8.1.4 of TS 38.214 [7] for more transmission opportunities; or

5> if transmission based on random selection is configured by upper layers and there are available resources left in the resource pool for more transmission opportunities:

6> randomly select the time and frequency resources for one or more transmission opportunities from the available resources, according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier by ensuring the minimum time gap between any two selected resources in case that PSFCH is configured for this pool of resources and that a retransmission resource can be indicated by the time resource assignment of a prior SCI according to clause 8.3.1.1 of TS 38.212 [9].

**Q11: Would your company agree to the change proposed in R2-2209543?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | It can just add “if configured” to the conditional statement where IUC is not supported as shown in the example below.  e.g.,  3> if *sl-InterUE-CoordinationScheme1* enabling reception/transmission of preferred resource set and non-preferred resource set is not configured by RRC:  4> if transmission based on random selection is configured by upper layers:  5> randomly select the time and frequency resources for one transmission opportunity from the resource pool which occur within the SL DRX Active time if configured as specified in clause 5.28.2 of the destination UE selected for indicating to the physical layer the SL DRX Active time above, according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier; |
|  |  |  |

**[Summary]**

## 2.5 For changes in [R2-2209544](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209544.zip)

### 2.5.1 1st change, **related contribution: P1 in** [**R2-2209387**](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209387.zip)

**Reason for change**: In TS38.321, when UE has own sensing results and if a non-preferred resource set is received, MAC layers indicate the received non-preferred resource set to PHY. MAC layers need to perform resource (re-)selection according to the resources indicated by PHY and the related procedures are not specified.

**Change**: Add resource (re-)selection procedures for the case when UE has own sensing results and receives a non-preferred resource set.

**Part of the corrections in the** [**R2-2209544**](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209544.zip)**;**

3> if *sl-InterUE-CoordinationScheme1* enabling reception/transmission of preferred resource set and non-preferred resource set is configured by RRC and when the UE has own sensing result as specified in clause 8.1.4 of TS 38.214 [7] and if a non-preferred resource set is received from a UE:

4> indicate the received non-preferred resource set to physical layer.

4> if transmission based on random selection is configured by upper layers:

5> randomly select the time and frequency resources for one transmission opportunity from the resources pool, according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier.

4> else:

5> randomly select the time and frequency resources for one transmission opportunity from the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7], according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier.

**Part of the corrections in the** [**R2-2209387**](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209387.zip)**;**

3> if *sl-InterUE-CoordinationScheme1* enabling reception/transmission of preferred resource set and non-preferred resource set is configured by RRC and when the UE has own sensing result as specified in clause 8.1.4 of TS 38.214 [7] and if only a non-preferred resource set is received from a UE or both a non-preferred resource set and a preferred resource set are received from a UE:

4> indicate the received non-preferred resource set to physical layer.

4> if only the non-preferred resource set is to be used:

5> randomly select the time and frequency resources for one transmission opportunity from the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7], according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier.

4> else if both preferred resource set and non-preferred resource set are to be used:

5> randomly select the time and frequency resources for one transmission opportunity within the intersection of the received preferred resource set and the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7] for SL-SCH data to be transmitted to the UE providing the preferred resource set, according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier.

5> if there are no resources within the intersection that can be selected as the time and frequency resources for the one transmission opportunity according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier.

6> randomly select the time and frequency resources for one transmission opportunity from the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7], according to the amount of selected frequency resources and the remaining PDB of SL data available in the logical channel(s) allowed on the carrier.

3> use the randomly selected resource to select a set of periodic resources spaced by the resource reservation interval for transmissions of PSCCH and PSSCH corresponding to the number of transmission opportunities of MAC PDUs determined in TS 38.214 [7].

**Q12: Would your company agree to the 1st change proposed in R2-2209544 or change of the R2-2209387?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Yes with comment | Prefer the correction of the R2-2209387. |
|  |  |  |

**[Summary]**

### 2.5.2 2nd change, **related contribution: R2-2210113**

**Reason for change**: In TS38.321, when UE has own sensing results and if a non-preferred resource set is received, MAC layers indicate the received non-preferred resource set to PHY. MAC layers need to perform resource (re-)selection according to the resources indicated by PHY and the related procedures are not specified.

**Change**: Change the reference specification to clause 16.3.1 of TS38.213.

1> if the next resource of the selected sidelink grant which has been indicated by a prior SCI is overlapped with conflict resource(s) indicated by the physical layer as specified in clause 16.3.1 of TS38.213 [6]:

2> remove the resource from the selected sidelink grant associated to the Sidelink process;

**Q13: Would your company agree to the 2nd change proposed in R2-2209544?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.6 For changes in [R2-2209675](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209675.zip)

### 2.6.1 1st change**, releated contribution: R2-2210382**

**Reason for change**: According to following RAN1’s agreement, the IUC MAC CE can only use the resource pool where the IUC information included in the MAC CE is generated. In other words, not all the sidelink grant can be used to carry IUC MAC CE. Thus, LCP procedure shall be enhanced, i.e. during LCP, the IUC MAC CE can only use the SL grant associated to the resource pool where the IUC is generated.

|  |
| --- |
| * For inter-UE coordination information triggered by an explicit request in Scheme 1,   + UE-A uses a TX resource pool used for UE-B’s request transmission to determine the set of resources and to transmit the set of resources to UE-B * For inter-UE coordination information triggered by a condition rather than request reception in Scheme 1,   + UE-A transmitting in a resource pool provides inter-UE coordination information associated with the same resource pool |

Similarly, UE-B shall transmit the IUC request MAC CE on the resource pool of which the IUC request MAC CE is used to request the resource set.

**Change**: In clause 5.22.1.4.1.2, Add a Note to describe the LCP restriction for IUC request and information MAC CE.

5.22.1.4.1.2 Selection of logical channels

The MAC entity shall for each SCI corresponding to a new transmission:

1> if *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon* is configured according to TS 38.331 [5]:

2> if the new transmission is associated to a sidelink grant in *sl-DiscTxPoolSelected* or *sl-DiscTxPoolScheduling* configured in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon*:

3> select a Destination associated with NR sidelink discovery as specified in TS 23.304 [26], that is in the SL Active time for the SL transmission occasion if SL DRX is applied for the destination, and among the logical channels that satisfy all the following conditions for the SL grant associated to the SCI:

4> SL data for NR sidelink discovery is available for transmission; and

4> *SBj* > 0, in case there is any logical channel having *SBj* > 0; and

4> *sl-configuredGrantType1Allowed*, if configured, is set to *true* in case the SL grant is a Configured Grant Type 1; and

4> *sl-AllowedCG-List*, if configured, includes the configured grant index associated to the SL grant.

2> else:

3> select a Destination associated to one of unicast, groupcast and broadcast (excluding the Destination(s) associated with NR sidelink discovery as specified in TS 23.304 [26]), that is in the SL Active time for the SL transmission occasion if SL DRX is applied for the destination, and having at least one of the MAC CE and the logical channel with the highest priority, among the logical channels that satisfy all the following conditions and MAC CE(s), if any, for the SL grant associated to the SCI:

4> SL data for NR sidelink communication is available for transmission; and

4> *SBj* > 0, in case there is any logical channel having *SBj* > 0; and

4> *sl-configuredGrantType1Allowed*, if configured, is set to *true* in case the SL grant is a Configured Grant Type 1; and

4> *sl-AllowedCG-List*, if configured, includes the configured grant index associated to the SL grant; and

4> *sl-HARQ-FeedbackEnabled* is set to *disabled*, if PSFCH is not configured for the SL grant associated to the SCI.

1> else:

2> select a Destination associated to one of unicast, groupcast and broadcast, that is in the SL Active time for the SL transmission occasion if SL DRX is applied for the destination, and having at least one of the MAC CE and the logical channel with the highest priority, among the logical channels that satisfy all the following conditions and MAC CE(s), if any, for the SL grant associated to the SCI:

3> SL data is available for transmission; and

3> *SBj* > 0, in case there is any logical channel having *SBj* > 0; and

3> *sl-configuredGrantType1Allowed*, if configured, is set to *true* in case the SL grant is a Configured Grant Type 1; and

3> *sl-AllowedCG-List*, if configured, includes the configured grant index associated to the SL grant; and

3> *sl-HARQ-FeedbackEnabled* is set to *disabled*, if PSFCH is not configured for the SL grant associated to the SCI.

NOTE 1: If multiple Destinations have the logical channels satisfying all conditions above with the same highest priority or if multiple Destinations have either the MAC CE and/or the logical channels satisfying all conditions above with the same priority as the MAC CE, which Destination is selected among them is up to UE implementation.

NOTE \*: Destination having only Inter-UE Coordination Request MAC CE is selected if the resource pool which is requested in the MAC CE includes the SL grant. Destination having only Inter-UE Coordination Information MAC CE is selected, the resource pool generating the MAC CE includes the SL grant.

1> select the logical channels satisfying all the following conditions among the logical channels belonging to the selected Destination:

2> SL data is available for transmission; and

2> *sl-configuredGrantType1Allowed*, if configured, is set to *true* in case the SL grant is a Configured Grant Type 1; and.

2> *sl-AllowedCG-List*, if configured, includes the configured grant index associated to the SL grant; and

2> *sl-HARQ-FeedbackEnabled* is set to the value that satisfies the following conditions:

3> if PSFCH is configured for the sidelink grant associated to the SCI and the UE is capable of PSFCH reception:

4> *sl-HARQ-FeedbackEnabled* is set to *enabled*, if *sl-HARQ-FeedbackEnabled* is set to *enabled* for the highest priority logical channel satisfying the above conditions; or

4> *sl-HARQ-FeedbackEnabled* is set to *disabled*, if *sl-HARQ-FeedbackEnabled* is set to *disabled* for the highest priority logical channel satisfying the above conditions.

3> else:

4> *sl-HARQ-FeedbackEnabled* is set to disabled.

NOTE 2: HARQ feedback enabled/disabled indicator is set to disabled for the transmission of a MAC PDU only carrying CSI reporting MAC CE or Sidelink DRX Command MAC CE or Sidelink Inter-UE Coordination Request MAC CE or Sidelink Inter-UE Coordination Information MAC CE.

Note\*: Inter-UE Coordination Request MAC CE is selected only if the Inter-UE Coordination Request MAC CE is used to request the resource set of the resource pool including the SL grant.

Note\*：Inter-UE Coordination Information MAC CE is selected only if the resource pool generating the MAC CE includes the SL grant.

**Q14: Would your company agree to the 1st change proposed in R2-2209675?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Desagree | In email discussion [511, OPPO] of the last meeting, the majority view was that transmission of IUC information does not affect LCP. And leave it to UE implementation to handle the IUC-info to be transmitted in the correct resources.  From MAC CR rapporteur point of view, in terms of specifying the RAN1 agreement in the MAC specification, we can reflect the RAN1 agreement as it is in the NOTE.  e.g.,  in section 5.22.1.1,  NOTE: For Inter-UE Coordination Information triggered by an explicit request in Scheme 1, UE-A uses a TX resource pool used for UE-B’s request transmission to determine the set of resources and to transmit the set of resources to UE-B.  For Inter-UE Coordination Information triggered by a condition rather than request reception in Scheme 1, UE-A transmitting in a resource pool provides Inter-UE Coordination Information associated with the same resource pool. |
|  |  |  |

**[Summary]**

### 2.6.2 2nd change

**Reason for change**: How is IUC request MAC CE and IUC information MAC CE used is missing.

**Change**: In clause 5.22.1.9 and 5.22.1.10, Add the description of how is IUC request MAC CE and IUC information MAC CE used.

5.22.1.9 IUC-Request transmission

The Sidelink Inter-UE Coordination Request (SL-IUC Req) transmission procedure is used to trigger a peer UE to transmit Sidelink Inter-UE Coordination Information as specified in clause 8.1.4 of TS 38.214 [7]. If the SL-IUC Req transmission procedure is triggered, UE transmit the Inter-UE Coordination Request MAC CE to peer UE.

5.22.1.10 IUC-Information Reporting

The Sidelink Inter-UE Coordination Information (SL-IUC Info) reporting procedure is used to provide a peer UE with inter-UE coordination information as specified in clause 8.1.4 of TS 38.214 [7]. The SL-IUC Info reporting procedure can be triggered by SL-IUC Request MAC CE or UE implementation. If the SL-IUC Info reporting procedure is triggered, UE transmit the Inter-UE Coordination Information MAC CE to peer UE.

**Q15: Would your company agree to the 2nd change proposed in R2-2209675?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

### 2.6.3 3rd change

**Reason for change**: According to following higher layer parameters, IUC request and IUC information MAC CE is generated only if UE has data to be transmitted to peer UE. Corresponding description is missing in MAC layer.

|  |
| --- |
| ***sl-TriggerConditionCoordInfo***  Indicates the additional alternative trigger condition of inter-UE coordination information triggered by a condition rather than request reception in Scheme-1 from UE-A to UE-B. Value 0 means inter-UE coordination information is triggered by UE-A's implementation. Value 1 means inter-UE coordination information can be triggered only when UE-A has data to be transmitted together with the inter-UE coordination information to UE-B. |
| ***sl-TriggerConditionRequest***  Indicates the trigger condition of an explicit request from UE-B to UE-A. Value 0 means the explicit request is triggered by UE-B's implementation. Value 1 means the explicit request can be triggered only when UE-B has data to be transmitted to UE-A. |

**Change**: In clause 5.22.1.9 and 5.22.1.10, add the description of how higher layer parameters (***sl-TriggerConditionCoordInfo, sl-TriggerConditionRequest***) influence the transmission procedure.

5.22.1.9 IUC-Request transmission

The Sidelink Inter-UE Coordination Request (SL-IUC Req) transmission procedure is used to trigger a peer UE to transmit Sidelink Inter-UE Coordination Information as specified in clause 8.1.4 of TS 38.214 [7].

If *sl-TriggerConditionRequest* is set to 1, The Sidelink Inter-UE Coordination Request (SL-IUC Req) transmission procedure is triggered only if UE as data to be transmitted to peer UE.

5.22.1.10 IUC-Information Reporting

The Sidelink Inter-UE Coordination Information (SL-IUC Info) reporting procedure is used to provide a peer UE with inter-UE coordination information as specified in clause 8.1.4 of TS 38.214 [7].

If *sl-TriggerConditionCoordInfo* is set to 1, Sidelink Inter-UE Coordination Information (SL-IUC Info) transmission procedure is triggered only if UE as data to be transmitted to peer UE.

RRC configures the following parameter to control the SL-IUC Information reporting procedure:

- *sl-LatencyBoundIUC-Report*, which is maintained for each PC5-RRC connection.

The MAC entity maintains an *sl-IUC-ReportTimer* for each pair of the Source Layer-2 ID and the Destination Layer-2 ID corresponding to a PC5-RRC connection. *sl-IUC-ReportTimer* is used for an SL-IUC Information reporting UE to follow the latency requirement signalled from an IUC-Information triggering UE. The value of *sl-IUC-ReportTimer* is the same as the‎ latency requirement of the SL-IUC Information in *sl-LatencyBoundIUC-Report* configured by RRC.

The MAC entity shall for each pair of the Source Layer-2 ID and the Destination Layer-2 ID corresponding to a PC5-RRC connection which has been established by upper layers:

1> if the SL-IUC Information reporting has been triggered by an SL-IUC Request MAC CE (and/or an SCI) and not cancelled:

2> if the *sl-IUC-ReportTimer* for the triggered SL-IUC Information reporting is not running:

3> start the *sl-IUC-ReportTimer*.

2> if the *sl-IUC-ReportTimer* for the triggered SL-IUC Information reporting expires:

3> cancel the triggered SL-IUC Information reporting.

2> else if the MAC entity has SL resources allocated for new transmission and the SL-SCH resources can accommodate the SL-IUC Information MAC CE and its subheader as a result of logical channel prioritization, and SL data (excluding SL-IUC Information MAC CE) associated to same destination is available for transmission if *sl-TriggerConditionCoordInfo* is set to 1:

3> instruct the Multiplexing and Assembly procedure to generate a Sidelink Inter-UE Coordination Information MAC CE as defined in clause 6.1.3.35;

3> stop the *sl-IUC-ReportTimer* for the triggered SL-IUC Information reporting;

3> cancel the triggered SL-IUC Information reporting.

**Q16: Would your company agree to the 3rd change proposed in R2-2209675?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree with modificaiton | If *sl-TriggerConditionRequest* is set to 1, The Sidelink Inter-UE Coordination Request (SL-IUC Req) transmission procedure can be triggered only if UE as data to be transmitted to peer UE.  If *sl-TriggerConditionCoordInfo* is set to 1, Sidelink Inter-UE Coordination Information (SL-IUC Info) transmission procedure can be triggered only if UE as data to be transmitted to peer UE. |
|  |  |  |

**[Summary]**

### 2.6.4 4th change

**Reason for change**: According to last meeting’s RAN2 agreement as following, the priority 1 of IUC request and information MAC CE is only used for LCP.

|  |
| --- |
| The following parameters are dummified in TS 38.331:  - sl-PriorityCoordInfoExplicit-r17  - sl-PriorityCoordInfoCondition-r17  - sl-PriorityRequest-r17  Keep those parameters to use them in sensing and candidate resource selections in PHY and use the fixed value “1” for IUC and IUC REQ MAC CE in MAC LCP. |

**Change**: In clause 6.1.3.53 and 6.1.3.54, add the description of restricting the priority 1 to LCP for IUC request and information MAC CE.

6.1.3.53 Inter-UE Coordination Information MAC CE

The Inter-UE Coordination Information MAC CE is identified by a MAC subheader with LCID as specified in Table 6.2.4-1. The priority of the Inter-UE Coordination Information MAC CE is fixed to '1' for Logical Channel Prioritization (LCP) procedure. It has a variable size with following fields:

6.1.3.54 Inter-UE Coordination Request MAC CE

The Inter-UE Coordination request MAC CE is identified by a MAC subheader with LCID as specified in Table 6.2.4-1. The priority of the Inter-UE Coordination Request MAC CE is fixed to '1' for Logical Channel Prioritization (LCP) procedure. It has a fixed size of 48 bits with following fields:

**Q17: Would your company agree to the 4th change proposed in R2-2209675?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.7 For changes in [R2-2209741](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209741.zip)

### 2.7.1 1st change**, related contributions:**

**Reason for change**: In RAN2#117, the following agreement was reached:

|  |
| --- |
| 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). |

However, it has not been reflected in current spec.

**Change**: In clause 5.22.1, change “if transmission based on random selection is configured by upper layer” to “If configured by RRC, *sl-AllowedResourceSelectionConfig* enabling random selection and UE selected to use random selection” and change “if transmission based on full sensing or partial sensing is configured by upper layers” to “if configured by RRC, *sl-AllowedResourceSelectionConfig* enabling full sensing and/or partial sensing and UE selected to use full sensing or partial sensing”

Part of modification;

4> if *sl-AllowedResourceSelectionConfig* enabling random selection and UE selected to use random selection:

**Q18: Would your company agree to the 1st change proposed in R2-2209741?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

### 2.7.2 2nd change

**Reason for change**: SR procedures triggered by SL IUC Request/Information MAC CE has not been captured in spec.

**Change**: Add the SR procedure triggered by SL IUC Request/Information MAC CE in clause 5.22.1.5.

Each sidelink logical channel may be mapped to zero or one SR configuration, which is configured by RRC. If the SL-CSI reporting procedure is enabled by RRC, the SL-CSI reporting is mapped to one SR configuration for all PC5-RRC connections. The SR configuration of the SL-CSI reporting triggered according to 5.22.1.7 is considered as corresponding SR configuration for the triggered SR (clause 5.4.4). The value of the priority of the triggered SR triggered by SL-CSI reporting corresponds to the value of the priority of the Sidelink CSI Reporting MAC CE. The SR configuration of the SL-CSI reporting is considered as corresponding SR configuration for the triggered SR of SL-DRX Command indication triggered according to 5.28.3. The value of the priority of the triggered SR triggered by SL-DRX Command indication corresponds to the value of the priority of the Sidelink DRX Command MAC CE. The SR configuration of the SL-CSI reporting is considered as corresponding SR configuration for the triggered SR of SL-IUC Request triggered according to 5.22.1.9. The value of the priority of the triggered SR triggered by SL-IUC Request corresponds to the value of the priority of the Sidelink Inter-UE Coordination Request MAC CE. The SR configuration of the SL-CSI reporting is considered as corresponding SR configuration for the triggered SR of SL-IUC Information triggered according to 5.22.1.9. The value of the priority of the triggered SR triggered by SL-IUC Information corresponds to the value of the priority of the Sidelink Inter-UE Coordination Information MAC CE.

**Q19: Would your company agree to the 1st change proposed in R2-2209741?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | IUC is only supported in mode 2. |
|  |  |  |

**[Summary]**

### 2.7.3 3rd change

**Reason for change**: “SL-IUC Req” and “SL-IUC Info” are not used in the other sections, hence corresponding abbreviations are unncessary.

**Change**: Delete “SL-IUC Req” and “SL-IUC Info” in clause 5.22.1.9 and 5.22.1.10.

5.22.1.9 IUC-Request transmission

The Sidelink Inter-UE Coordination Request transmission procedure is used to trigger a peer UE to transmit Sidelink Inter-UE Coordination Information as specified in clause 8.1.4 of TS 38.214 [7].

5.22.1.10 IUC-Information Reporting

The Sidelink Inter-UE Coordination Information reporting procedure is used to provide a peer UE with inter-UE coordination information as specified in clause 8.1.4 of TS 38.214 [7].

**Q20: Would your company agree to the 3rd change proposed in R2-2209741?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.8 For changes in [R2-2209853](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209853.zip)

### 2.8.1 1st change

**Reason for change**: According to current resource selection, when a Tx UE receives a preferred resource set from a UE, the Tx UE considers the preferred resource set only when selecting resources for transmission to the UE provding the preferred resource set. Similar handling should be applied when receiving a non-preferred resource set from a UE.

**Change**: (5.22.1.1) added descrption so that the UE indicates the received non-preferred resource set to physical layer only when selecting resources for transmission to the UE provding the non-preferred resource set.

3> if *sl-InterUE-CoordinationScheme1* enabling reception/transmission of preferred resource set and non-preferred resource set is configured by RRC and when the UE has own sensing result as specified in clause 8.1.4 of TS 38.214 [7] and if a non-preferred resource set is received from a UE:

4> indicate the received non-preferred resource set to physical layer for SL-SCH data to be transmitted to the UE providing the non-preferred resource set.

**Q21: Would your company agree to the 1st change proposed in R2-2209853?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Desagree | Correction is not consistent with the RAN1 agreement. According to RAN1 agreement, UE may use resources excluding the non-preferred resource set even if the TB is transmitted to another UE. |
|  |  |  |

**[Summary]**

### 2.8.2 2nd change

**Reason for change**: Since there is no Cast type indicator in SCI format 2-C (for inter-UE coordination information), it’s not clear which HARQ feedback mode is used for SCI format 2-C.

**Change**: (5.22.2.2.2) Simplify and clarify the condition check that if negative-only acknowledgement is not used, UE should generate ACK or NACK.

1> if HARQ feedback is enabled by the SCI:

2> if negative-only acknowledgement is indicated by the SCI according to clause 8.4.1 of TS 38.212 [9]:

3> if UE's location information is available and distance beteween UE's location and the central location of the nearest zone that is calculated based on the *Zone\_id* in the SCI and the value of *sl-ZoneLength* corresponding to the communication range requirement in the SCI as specified in TS 38.331 [5] is smaller or equal to the communication range requirement in the SCI; or

3> if none of *Zone\_id* and communication range requirement is indicated by the SCI; or

3> if UE's location information is not available:

4> if the data which the MAC entity attempted to decode was not successfully decoded for this TB and the data for this TB was not successfully decoded before:

5> instruct the physical layer to generate a negative acknowledgement of the data in this TB.

2> else:

3> if the data which the MAC entity attempted to decode was successfully decoded for this TB or the data for this TB was successfully decoded before:

4> instruct the physical layer to generate a positive acknowledgement of the data in this TB.

3> else:

4> instruct the physical layer to generate a negative acknowledgement of the data in this TB.

**Q22: Would your company agree to the 2nd change proposed in R2-2209853?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | See the comment | According to RAN1 agreement, SCI format 2-C is only used to transmit IUC information to unciast. Also, according to the RAN2 agreement, if IUC information is multiplexed with data, the HARQ Feedback option follows the HARQ Feedback option of the data. If these are combined, even if SCI format 2-C is used, the feedback mode is determined according to a characteristic of the HARQ feedback option of the multiplexed data with IUC message. |
|  |  |  |

**[Summary]**

### 2.8.3 3rd change

**Reason for change**: In SL DRX, HARQ RTT timers for GC are introduced. However, the GC HARQ RTT timers (i.e. sl-DRX-GC-HARQ-RTT-Timer1 and sl-DRX-GC-HARQ-RTT-Timer2) are not applied when deriving or setting the *sl-drx-HARQ-RTT-Timer* for each SCI associated with groupcast.

**Change**: (5.28.2) Add in the description when setting the *sl-drx-HARQ-RTT-Timer* so that the parameters configured for groupcast is considered.

2> if the SCI indicates an SL transmission:

3> if a next retransmission opportunity is indicated in the SCI:

4> derive the *sl-drx-HARQ-RTT-Timer* from the retransmission resource timing of the next retransmission resource in the SCI.

3> else if PSFCH resource is configured for the SL grant associated to the SCI:

4> set the *sl-drx-HARQ-RTT-Timer* based on *sl-drx-HARQ-RTT-Timer1* configured by upper layer if the cast type associated with the SCI is unicast or *sl-DRX-GC-HARQ-RTT-Timer1* configured by upper layerif the cast type associated with the SCI is groupcast when HARQ feedback is enabled, or based on *sl-drx-HARQ-RTT-Timer2* configured by upper layer if the cast type associated with the SCI is unicast or *sl-DRX-GC-HARQ-RTT-Timer2* configured by upper layerif the cast type associated with the SCI is groupcast when HARQ feedback is disabled, for resource pool configured with PSFCH.

**Q23: Would your company agree to the 3rd change proposed in R2-2209853?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

**This correction is discussed in 2.2.5.**

### 2.8.4 4th change

**Reason for change**: *sl-drx-HARQ-RTT-Timer* is set to different values based on different cast type, and whether PSFCH resources is configured, and whether the next retransmission opportunity is indicated; however, the current procedure only starts the HARQ RTT timer based on value configured for unicast (i.e. sl-drx-HARQ-RTT-Timer1 and sl-drx-HARQ-RTT-Timer2), and the UE starts *sl-drx-HARQ-RTT-Timer* based on unicast parameter without considering other cases.

**Change**: (5.28.2) Simplify the condition of starting *sl-drx-RetransmissionTimer* to based on expiry of *sl-drx-HARQ-RTT-Timer*. Simplify the procedure starting *sl-drx-HARQ-RTT-Timer* so that it is not needed to list all values/parameters for different cases when starting the *sl-drx-HARQ-RTT-Timer*.

**This correction is discussed in 2.2.5.**

### 2.8.5 5th change

**Reason for change**: Since there is no cast type indicator for SCI format 2-B and 2-C, based on current condition checking the field in SCI, it is not clear how to start HARQ RTT timer for the SL grant with SCI format without cast type indicator field.

**Change**: (5.28.2) change the condition for determining cast type for a SL grant to include the cases where the corresponding SCI does not include a cast type indicator field.

3> if PSFCH resource is configured for the SL grant associated to the SCI:

4> if HARQ feedback is enabled by the SCI and the cast type associated with the SCI is unicast; or

4> if HARQ feedback is enabled by the SCI and the cast type associated with the SCI is groupcast and positive-negative acknowledgement is selected;

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH transmission carrying the SL HARQ feedback; or

5> start the *sl-drx-HARQ-RTT-Timer* for the corresponding Sidelink process in the first slot after the end of the corresponding PSFCH resource for the SL HARQ feedback when the SL HARQ feedback is not transmitted due to UL/SL prioritization;

4> if HARQ feedback is enabled by the SCI and the cast type associated with the SCI is groupcast and negative-only acknowledgement is selected;

**Q24: Would your company agree to the 5th change proposed in R2-2209853?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.9 For changes in [R2-2209859](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209859.zip)

### 2.9.1 Change

**Reason for change**: Updata the MAC spec to refer to TX profiles for determining whether SL DRX can be supported for UE.

**Change**:

5.28.2 Behaviour of UE receiving SL-SCH Data

When SL DRX is configured, the Active Time includes the time while:

- *sl-drx-onDurationTimer* or *sl-drx-InactivityTimer* is running; or

- *sl-drx-RetransmissionTimer* is running; or

- period of *sl-LatencyBoundCSI-Report* configured by RRC in case SL-CSI reporting MAC CE is not received; or

- the time between the transmission of the request of SL-CSI reporting and the reception of the SL-CSI reporting MAC CE in case SL-CSI reporting MAC CE is received; or

- Slot associated with the announced periodic transmissions by the UE transmitting SL-SCH Data.

When one or multiple SL DRX is configured and upper layers indicate support of SL DRX, the MAC entity shall:

1> if multiple SL DRX Cycles that are mapped with multiple *SL-QoS-Profiles* of a Destination Layer-2 ID and interested cast type is associated to groupcast or broadcast:

**Q25: Would your company agree to the change proposed in R2-2209859?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | MAC layer just use the DRX configuration configured from RRC, so if correction is needed for tx profile, it should be modified in RRC specification. |
|  |  |  |

**[Summary]**

## 2.10 For changes in [R2-2209874](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209874.zip)

### 2.10.1 Change

**Reason for change**: drx-InactivityTimer operation (section 5.7) considering PDCCH for SL was updated in R17 as follows:

“2> if the PDCCH indicates a new transmission (DL, UL or SL) on a Serving Cell in this DRX group:

3>  start or restart *drx-InactivityTimer* for this DRX group in the first symbol after the end of the PDCCH reception.

NOTE 3a: A PDCCH indicating activation of SPS, configured grant type 2, or configured sidelink grant of configured grant Type 2 is considered to indicate a new transmission.”

However similar update is missing for *bwp-InactivityTimer* in section 5.15.1. BWP adpataion based on *bwp-InactivityTimer* enables UE to switch from larger BWP to narrow BWP to minimise power consumption. UE start or restart the *bwp-InactivityTimer* when UE receives PDCCH addressed to C-RNTI/CS-RNTI/G-RNTI/G-CS-RNTI to delay the switching to initial DL BWP. Expiry of *bwp-InactivityTimer* is an indication that PDCCH for data is not expected and UE can be switched to narrow BWP. Later when data resumes and PDCCH transmission is expected, UE can be switched back to larger BWP. So on similar lines as unicast DL/UL and multicast DL, If a PDCCH addressed to SL-RNTI or SL-CS-RNTI indicating sidelink grant is received on the active BWP, UE should start or restart the *bwp-InactivityTimer* associated with the active DL BWP to delay the switching to intial DL BWP.

**Change**: Specified that MAC entity start or restart the *bwp-InactivityTimer* when a PDCCH addressed to SL-RNTI or SL-CS-RNTI indicating sidelink grant is received on the active BWP.

The MAC entity shall for each activated Serving Cell configured with *bwp-InactivityTimer*:

1> if the *defaultDownlinkBWP-Id* is configured, and the active DL BWP is not the BWP indicated by the *defaultDownlinkBWP-Id*, and the active DL BWP is not the BWP indicated by the *dormantBWP-Id* if configured; or

1> if the UE is not a RedCap UE, and if the *defaultDownlinkBWP-Id* is not configured, and the active DL BWP is not the *initialDownlinkBWP*, and the active DL BWP is not the BWP indicated by the *dormantBWP-Id* if configured; or

1> if the UE is a RedCap UE, and if the *defaultDownlinkBWP-Id* is not configured, and *initialDownlinkBWP-RedCap* is not configured, and the active DL BWP is not the *initialDownlinkBWP*; or

1> if the UE is a RedCap UE, and if the *defaultDownlinkBWP-Id* is not configured, and *initialDownlinkBWP-RedCap* is configured, and the active DL BWP is not the *initialDownlinkBWP-RedCap*:

2> if a PDCCH addressed to C-RNTI or CS-RNTI indicating downlink assignment or uplink grant is received on the active BWP; or

2> if a PDCCH addressed to G-RNTI or G-CS-RNTI configured for multicast indicating downlink assignment is received on the active BWP; or

2> if a PDCCH addressed to C-RNTI or CS-RNTI indicating downlink assignment or uplink grant is received for the active BWP; or

2> if a PDCCH addressed to SL-RNTI or SL-CS-RNTI indicating sidelink grant is received on the active BWP; or

2> if a MAC PDU is transmitted in a configured uplink grant and LBT failure indication is not received from lower layers; or

2> if a MAC PDU is received in a configured downlink assignment for unicast or MBS multicast:

3> if there is no ongoing Random Access procedure associated with this Serving Cell; or

3> if the ongoing Random Access procedure associated with this Serving Cell is successfully completed upon reception of this PDCCH addressed to C-RNTI (as specified in clauses 5.1.4, 5.1.4a and 5.1.5):

4> start or restart the *bwp-InactivityTimer* associated with the active DL BWP.

**Q26: Would your company agree to the change proposed in R2-2209874?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Follow majority view |  |
|  |  |  |

**[Summary]**

## 2.11 For changes in [R2-2209895](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209895.zip)

### 2.11.1 Change

**Reason for change**: In current TS 38.321, MAC layer will provide active time of "destination UE(s)" selected to PHY, to enable the PHY layer can select SL resource within the active time of "destination UE(s)" selected. However, for groupcast and broadcast, there can be multiple destination UEs associated one destination, so the current description for groupcast and broadcast is not clear whether it is for multiple UEs of one destination or for multiple destinations.

Furthermore, we generally use "destination" in MAC to represent the target receiver, e.g. for SL DRX procedure in clause 5.28. Therefore, in order to use the term consistently across the MAC spec and to better cover the case of groupcast and broadcast, we shall use “destination(s)” other than “destination UE(s)”.

**Change**: Change destination UE(s)/destination UE into destination(s) in Claus 5.22.1.1 and Clause 5.22.1.2a.

Part of the correction:

2> if the TX resource (re-)selection is triggered as the result of the TX resource (re-)selection check:

3> if one or multiple SL DRX(s) is configured in the destination(s) receiving SL-SCH data:

4> indicate to the physical layer SL DRX Active time in the destination(s) receiving SL-SCH data, as specified in clause 5.28.2.

**Q27: Would your company agree to the change proposed in R2-2209895?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Not critical,  Follow majority view |  |
|  |  |  |

**[Summary]**

## 2.12 For changes in [R2-2210374](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210374.zip)

### 2.12.1 Change

**Reason for change**: Referring to Uu DRX, if a SL DRX timer value is reconfigured, applying the new value for the SL DRX timer when the timer is (re)started.

**Change**:

5.11 MAC reconfiguration

When a reconfiguration of the MAC entity is requested by upper layers, the MAC entity shall:

1> initialize the corresponding HARQ entity upon addition of an SCell;

1> remove the corresponding HARQ entity upon removal of an SCell;

1> apply the new value for timers when the timer is (re)started;

NOTE: It is also applicable to SL DRX timers reconfiguration.1> apply the new maximum parameter value when counters are initialized;

1. apply immediately the configurations received from upper layers for other parameters.

**Q28: Would your company agree to the change proposed in R2-2210374?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | It’s up to UE implementation. |
|  |  |  |

**[Summary]**

## 2.13 For changes in [R2-2210382](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210382.zip)

### 2.13.1 1st Change

**1st change is discussed in 2.6.1 (**[R2-2209675](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209675.zip)**)**

### 2.13.2 2nd Change

**2nd change is discussed in 2.2.5 (**[R2-2209388](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209388.zip), R2-2209853**)**

## 2.14 For changes in [R2-2210545](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210545.zip)

### 2.14.1 1st change

**Reason for change**: RAN2 agrees to make the priority value of IUC MAC CE and IUC request MAC CE used in LCP procedure fixed as "1", and configurable when used for sensing and candidate resource selection in PHY layer, but this is not captured in MAC specification when setting the priority in Sidelink transmission information.

**Change**: In clause 5.22.1.3.1, add a NOTE to clarify how to set the priority in Sidelink transmission information for IUC information MAC CE and IUC request MAC CE.

For each sidelink grant, the Sidelink HARQ Entity shall:

1> if the MAC entity determines that the sidelink grant is used for initial transmission as specified in clause 5.22.1.1; or

1> if the sidelink grant is a configured sidelink grant and no MAC PDU has been obtained in an *sl-PeriodCG* of the configured sidelink grant; or

1> if the sidelink grant is a dynamic sidelink grant or selected sidelink grant and no MAC PDU has been obtained in the previous sidelink grant when PSCCH duration(s) and 2nd stage SCI on PSSCH of the previous sidelink grant is not in SL DRX Active time as specified in clause 5.28.3 of any destination that has data to be sent:

NOTE 1: Void.

2> (re-)associate a Sidelink process to this grant, and for the associated Sidelink process:

2> if all PSCCH duration(s) and PSSCH duration(s) for initial transmission of a MAC PDU of the dynamic sidelink grant or the configured sidelink grant is not in SL DRX Active time as specified in clause 5.28.3 of the destination that has data to be sent:

* 3> ignore the sidelink grant.

NOTE 1A: The Sidelink HARQ Entity will associate the selected sidelink grant to the Sidelink process determined by the MAC entity.

* 3> obtain the MAC PDU to transmit from the Multiplexing and assembly entity, if any;
* 3> if a MAC PDU to transmit has been obtained:

4> if a HARQ Process ID has been set for the sidelink grant:

5> (re-)associate the HARQ Process ID corresponding to the sidelink grant to the Sidelink process.

NOTE 1a: There is one-to-one mapping between a HARQ Process ID and a Sidelink process in the MAC entity configured with Sidelink resource allocation mode 1.

4> determines Sidelink transmission information of the TB for the source and destination pair of the MAC PDU as follows:

5> set the Source Layer-1 ID to the 8 LSB of the Source Layer-2 ID of the MAC PDU;

5> set the Destination Layer-1 ID to the 16 LSB of the Destination Layer-2 ID of the MAC PDU;

5> (re-)associate the Sidelink process to a Sidelink process ID;

NOTE 1b: How UE determine Sidelink process ID in SCI is left to UE implementation for NR sidelink.

5> consider the NDI to have been toggled compared to the value of the previous transmission corresponding to the Sidelink identification information and the Sidelink process ID of the MAC PDU and set the NDI to the toggled value;

NOTE 2: The initial value of the NDI set to the very first transmission for the associated Sidelink process is left to UE implementation.

NOTE 3: Void.

5> set the cast type indicator to one of broadcast, groupcast and unicast as indicated by upper layers;

5> if HARQ feedback has been enabled for the MAC PDU according to clause 5.22.1.4.2;

6> set the HARQ feedback enabled/disabled indicator to *enabled*.

5> else:

6> set the HARQ feedback enabled/disabled indicator to *disabled*.

5> set the priority to the value of the highest priority of the logical channel(s), if any, and a MAC CE, if included, in the MAC PDU;

NOTE X: The priority of the IUC information MAC CE is the value configured in RRC parameters *sl-PriorityCoordInfoCondition* when triggered by a condition, or *sl-PriorityCoordInfoExplicit* when triggered by an explicit request. The priority of the IUC request MAC CE is the value configured in RRC parameter *sl-PriorityRequest*.

**Q29: Would your company agree to the 1st change proposed in R2-2210545?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

### 2.14.2 2nd change

**Reason for change**: Inter-UE Coordination Information MAC CE was introduced for sidelink which has a variable size, and it is missing in the specification that L field in MAC subheader for SL-SCH can indicate the length of this variable-sized MAC CE in bytes.

**Change**: In clause 6.2.4, add the sentence that the Length field in MAC subheader for SL-SCH can indicate variable-sized MAC CE in bytes.

6.2.4 MAC subheader for SL-SCH

The MAC subheader consists of the following fields:

- V: The MAC PDU format version number field indicates which version of the SL-SCH subheader is used. In this version of the specification, the V field is set to 0. The size of the V field is 4 bits;

- SRC: The SRC field carries the 16 most significant bits of the Source Layer-2 ID set to the identifier provided by upper layers as defined in TS 23.287 [19] or TS 23.304 [26]. The length of the field is 16 bits;

- DST: The DST field carries the 8 most significant bits of the Destination Layer-2 ID set to the identifier provided by upper layers as defined in TS 23.287 [19] or TS 23.304 [26]. The length of the field is 8 bits;

- LCID: The Logical Channel ID field identifies the logical channel instance of the corresponding MAC SDU or the type of the corresponding MAC CE within the scope of one Source Layer-2 ID and Destination Layer-2 ID pair or padding as described in Tables 6.2.4-1 for SL-SCH. There is one LCID field per MAC subheader except for SL-SCH subheader. The size of the LCID field is 6 bits;

- L: The Length field indicates the length of the corresponding MAC SDU or variable-sized MAC CE in bytes. There is one L field per MAC subheader except for SL-SCH subheader and subheaders corresponding to the fixed-sized MAC CE or padding. The size of the L field is indicated by the F field;

- F: The Format field indicates the size of the Length field. There is one F field per MAC subheader except for SL-SCH subheader and subheaders corresponding to the fixed-sized MAC CE or padding. The size of the F field is 1 bit. The value 0 indicates 8 bits of the Length field. The value 1 indicates 16 bits of the Length field;

- R: Reserved bit, set to 0.

**Q30. Would your company agree to the 2nd change proposed in R2-2210545?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.15 For changes in [R2-2210558](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210558.zip)

### 2.15.1 change

**Reason for change**: It is not clear what “Slot(s) associated with the announced periodic transmission(s)” means or how RX UE knows it in 5.28.2.

**Change**: Add a clarification it is indicated in SCI.

5.28.2 Behaviour of UE receiving SL-SCH Data

When SL DRX is configured, the Active Time includes the time while:

- *sl-drx-onDurationTimer*/*sl-DRX-GC-BC-OndurationTimer* or *sl-drx-InactivityTimer*/*sl-DRX-GC-InactivityTimer* is running; or

- *sl-drx-RetransmissionTimer*/*sl-DRX-GC-RetransmissionTimer* is running; or

- period of *sl-LatencyBoundCSI-Report* configured by RRC in case SL-CSI reporting MAC CE is not received; or

- the time between the transmission of the request of SL-CSI reporting and the reception of the SL-CSI reporting MAC CE in case SL-CSI reporting MAC CE is received; or

- Slot(s) associated with the announced periodic transmission(s), which is indicated in SCI by the UE transmitting SL-SCH Data; or

**Q31. Would your company agree to the change proposed in R2-2210558?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## 2.16 For changes in [R2-2210608](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210608.zip)

### 2.16.1 change

**Reason for change**: RAN2 agreements from RAN2#118 fix the priority value of the IUC MAC REQ to 1, but this means that a UE may arbitrary increase priority of certain destinations by simply requesting IUC message from a UE, even though this UE does not intend to utilise this information. This CR propose a resolution.

**Change**: UE-A is only allowed to trigger an IUC information request if it is expecting to utilise the received IUC information.

NOTE 3B3: UE-B is only allowed to trigger an IUC information request if it is expecting to utilise the received IUC information.

**Q32. Would your company agree to the change proposed in R2-2210608?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | SL DRX command MAC CE (e.g., last data) has the same issue, It's not just a particular problem with IUC. So modification is not needed. |
|  |  |  |

**[Summary]**

## 2.17 For changes in [R2-2209387](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209387.zip)

### 2.17.1 change of P1

**Reason for change**: The UE behaviour on resource selection from Set A for the following cases are missing in the current specification: 1) both preferred and non-preferred resource set are received and UE decide to only use the non-preferred resource set; 2) only non-preferred resource set is received.

**Change**: RAN2 to capture the missing UE behaviour on resource selection for the 2 cases: 1) Scheme-1 IUC is configured and only non-preferred resource set is received, and 2) Scheme-1 IUC is configured and both preferred and non-preferred resource set are received and both are used.

**This correction is discussed in 2.5.1.**

## 2.18 For changes in [R2-2209684](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2209684.zip)

### 2.18.1 change of P1

**Reason for change**: UE shall apply SL DRX configuration included in SL RRC reconfiguration once SL RRC reconfiguration is received and SL DRX configuration is considered as valid configuration.

**Change**: RAN2 confirms that UE quits from active time when receiving the RRCReconfigurationSidelink message including initial DRX configuration and the initial DRX configuration is accepted.

5.28.2 Behaviour of UE receiving SL-SCH Data

When SL DRX is configured, the Active Time includes the time while:

- *sl-drx-onDurationTimer*/*sl-DRX-GC-BC-OndurationTimer* or *sl-drx-InactivityTimer*/*sl-DRX-GC-InactivityTimer* is running; or

- *sl-drx-RetransmissionTimer*/*sl-DRX-GC-RetransmissionTimer* is running; or

- period of *sl-LatencyBoundCSI-Report* configured by RRC in case SL-CSI reporting MAC CE is not received; or

- the time between the transmission of the request of SL-CSI reporting and the reception of the SL-CSI reporting MAC CE in case SL-CSI reporting MAC CE is received; or

- Slot(s) associated with the announced periodic transmission(s) by the UE transmitting SL-SCH Data; or

- the time between transmission/reception of Direct Link Establishment Request message (TS 24.587 [28]) or ProSe Direct Link Establishment Request message (TS 24.554 [29]) and reception of *RRCReconfigurationSidelink* message including initial DRX configuration, if the initial DRX configuration is accepted; or

**Q33. Would your company agree to the correction of P1 proposed in R2-2209684?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | The UE remains awake until receiving RRCReconfigurationSidelink even if the initial drx configuration is rejected. |
|  |  |  |

**[Summary]**

## 2.19 For changes in [R2-2210779](file:///D:\업무\표준화%20업무\3GPP\3GPP%20표준회의\Rel-18\RAN2\%23119b-e_2022.10\TSGR2_119bis-e\docs\R2-2210779.zip)

### 2.19.1 change of P2, P3

**Reason for change**:

For the default CBR issue, R1 replied that

***Q3****: Is there still a need for the R17 default CBR parameters considering the existing R16 default CBR parameter?*

***RAN1’s reply****: Yes. The new Rel-17 parameters as provided in RAN1’s RRC list are introduced for new resource allocation schemes, i.e. partial sensing and random resource selection, which is different from the situation of Rel-16 full sensing.*

***Q4****: If yes to Q3, how to differentiate the usage of the R16 / R17 default CBR parameters?*

***RAN1’s reply****: The Rel-17 parameters defaultCbrPartialSensing and defaultCbrRandomSelection are used for UE performing partial sensing and random resource selection, respectively. The existing Rel-16 parameter is used when these two Rel-17 parameters do not apply.*

I.e., R1’s intention is to split the applicable scenario for the R16 and R17 default CBR parameter.

On the other hand, due to the approved R2 CR at R2#119 meeting, the R17 default CBR parameter is decoupled from exceptional-pool.

***sl-PBPS-CPS-Config***

Indicates the allowed resource allocation schemes of full sensing only, partial sensing only, random resource selection only, or any combination(s), and the related configuration for power saving resource allocation schemes. This field is absent for *sl-TxPoolExceptional*.

I.e., the R16 / R17 default CBR parameter differentiation is an issue only for normal pools.

Our understanding here is then for normal pool,

* Either the UE select partial sensing or random selection, for which R17 default CBR setting applies
* Or the UE selects full sensing, only in case there is sensing result available, which means CBR result is also available (since CBR measurement window is shorter than sensing window), i.e., no need for default CBR value.

So there is no use case for default CBR in case of full sensing, i.e., the default CBR setting for normal pool is only for partial sensing and random-selection. For exceptional pool, only R16 default CBR setting exist, and is relied on for all cases.

**Change**: RAN2 confirm 1) for normal pool, R17 default CBR setting is used for partial-sensing and random-selection, R16 default CBR setting is not appliable; 2) for exceptional pool, R16 default CBR setting is used for all cases. R2 sends this conclusion to R1 in the reply LS.

In section 5.22.1.1,

2> if the TX resource (re-)selection is triggered as the result of the TX resource (re-)selection check:

3> if one or multiple SL DRX is configured in the destination UE(s) receiving SL-SCH data:

4> indicate to the physical layer SL DRX Active time in the destination UE(s) receiving SL-SCH data, as specified in clause 5.28.2.

3> select one of the allowed values configured by RRC in *sl-ResourceReservePeriodList* and set the resource reservation interval, , with the selected value;

NOTE 3A: The MAC entity selects a value for the resource reservation interval which is larger than the remaining PDB of SL data available in the logical channel.

3> randomly select, with equal probability, an integer value in the interval [5, 15] for the resource reservation interval higher than or equal to 100ms or in the interval for the resource reservation interval lower than 100ms and set *SL\_RESOURCE\_RESELECTION\_COUNTER* to the selected value;

3> select the number of HARQ retransmissions from the allowed numbers, if configured by RRC, in *sl-MaxTxTransNumPSSCH* included in *sl-PSSCH-TxConfigList* and, if configured by RRC, overlapped in *sl-MaxTxTransNumPSSCH* indicated in *sl-CBR-PriorityTxConfigList* for the highest priority of the logical channel(s) allowed on the carrier and the CBR measured by lower layers according to clause 5.1.27 of TS 38.215 [24] if CBR measurement results are available, or the corresponding *sl-defaultTxConfigIndex* configured by RRC if CBR measurement results are not available in case the *sl-TxPoolExceptional* is used, or the corresponding *defaultCbrPartialSensing* configured by RRC if partial sensing is selected and the number of SL RSSI measurement slots over CBR measurement window is below *sl-MinNumRssiMeasurementSlots* in case the *TxPoolExceptional* is not used, or the corresponding *defaultCbrRandomSelection* configured by RRC if random selection is selected and the CBR measurement results are not available in case the *TxPoolExceptional* is not used;

3> select an amount of frequency resources within the range, if configured by RRC, between sl-*MinSubChannelNumPSSCH* and *sl-MaxSubchannelNumPSSCH* included in *sl-PSSCH-TxConfigList* and, if configured by RRC, overlapped between *MinSubChannelNumPSSCH* and *MaxSubchannelNumPSSCH* indicated in *sl-CBR-PriorityTxConfigList* for the highest priority of the logical channel(s) allowed on the carrier and the CBR measured by lower layers according to clause 5.1.27 of TS 38.215 [24] if CBR measurement results are available or the corresponding *sl-defaultTxConfigIndex* configured by RRC if CBR measurement results are not available in case the *sl-TxPoolExceptional* is used, or the corresponding *defaultCbrPartialSensing* configured by RRC if partial sensing is selected and the number of SL RSSI measurement slots over CBR measurement window is below *sl-MinNumRssiMeasurementSlots* in case the *TxPoolExceptional* is not used, or the corresponding *defaultCbrRandomSelection* configured by RRC if random selection is selected and the CBR measurement results are not available in case the *TxPoolExceptional* is not used;

~

1> if the MAC entity has selected to create a selected sidelink grant corresponding to transmission(s) of a single MAC PDU, and if SL data is available in a logical channel, or an SL-CSI reporting is triggered, or a Sidelink DRX Command indication is triggered or a Sidelink Inter-UE Coordination Information reporting is triggered, or a Sidelink Inter-UE Coordination Request is triggered:

2> if SL data is available in the logical channel for sidelink discovery:

3> if *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon* is configured according to TS 38.331 [5]:

4> select the *sl-DiscTxPoolSelected* configured in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon* for the transmission of sidelink discovery message.

3> else:

4> select any pool of resources among the configured pools of resources.

2> else if SL data for non-discovery is available in the logical channel:

3> if *sl-HARQ-FeedbackEnabled* is set to *enabled* for the logical channel:

4> select any pool of resources configured with PSFCH resources among the pools of resources except the pool(s) in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon*, if configured.

3> else:

4> select any pool of resources among the pools of resources except the pool(s) in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon*, if configured.

2> else if an SL-CSI reporting or a Sidelink DRX Command or a Sidelink Inter-UE Coordination Request or a Sidelink Inter-UE Coordination Information is triggered:

3> select any pool of resources among the pools of resources except the pool(s) in *sl-BWP-DiscPoolConfig* or *sl-BWP-DiscPoolConfigCommon*, if configured.

2> perform the TX resource (re-)selection check on the selected pool of resources as specified in clause 5.22.1.2;

2> if the TX resource (re-)selection is triggered as the result of the TX resource (re-)selection check:

3> if one or multiple SL DRX is configured in the destination UE(s) receiving SL-SCH data:

4> indicate to the physical layer SL DRX Active time in the destination UE(s) receiving SL-SCH data, as specified in clause 5.28.2.

3> select the number of HARQ retransmissions from the allowed numbers, if configured by RRC, in *sl-MaxTxTransNumPSSCH* included in *sl-PSSCH-TxConfigList* and, if configured by RRC, overlapped in *sl-MaxTxTransNumPSSCH* indicated in *sl-CBR-PriorityTxConfigList* for the highest priority of the logical channel(s) allowed on the carrier and the CBR measured by lower layers according to clause 5.1.27 of TS 38.215 [24] if CBR measurement results are available or the corresponding *sl-defaultTxConfigIndex* configured by RRC if CBR measurement results are not available in case the *sl-TxPoolExceptional* is used, or the corresponding *defaultCbrPartialSensing* configured by RRC if partial sensing is selected and the number of SL RSSI measurement slots over CBR measurement window is below *sl-MinNumRssiMeasurementSlots* in case the *TxPoolExceptional* is not used, or the corresponding *defaultCbrRandomSelection* configured by RRC if random selection is selected and the CBR measurement results are not available in case the *TxPoolExceptional* is not used;

3> select an amount of frequency resources within the range, if configured by RRC, between *sl-MinSubChannelNumPSSCH* and *sl-MaxSubChannelNumPSSCH* included in *sl-PSSCH-TxConfigList* and, if configured by RRC, overlapped between *sl-MinSubChannelNumPSSCH* and *sl-MaxSubChannelNumPSSCH* indicated in *sl-CBR-PriorityTxConfigList* for the highest priority of the logical channel(s) allowed on the carrier and the CBR measured by lower layers according to clause 5.1.27 of TS 38.215 [24] if CBR measurement results are available or the corresponding *sl-defaultTxConfigIndex* configured by RRC if CBR measurement results are not available in case the *sl-TxPoolExceptional* is used, or the corresponding *defaultCbrPartialSensing* configured by RRC if partial sensing is selected and the number of SL RSSI measurement slots over CBR measurement window is below *sl-MinNumRssiMeasurementSlots* in case the *TxPoolExceptional* is not used, or the corresponding *defaultCbrRandomSelection* configured by RRC if random selection is selected and the CBR measurement results are not available in case the *TxPoolExceptional* is not used;

~

The MAC entity shall for each PSSCH duration:

1> for each sidelink grant occurring in this PSSCH duration:

2> select a MCS table allowed in the pool of resource which is associated with the sidelink grant;

NOTE 4a: MCS table selection is up to UE implementation if more than one MCS table is configured.

2> if the MAC entity has been configured with Sidelink resource allocation mode 1:

3> select a MCS which is, if configured, within the range that is configured by RRC between *sl-MinMCS-PSSCH* and *sl-MaxMCS-PSSCH* associated with the selected MCS table included in *sl-ConfigDedicatedNR*;

3> set the resource reservation interval to 0ms.

2> else:

3> select a MCS which is, if configured, within the range, if configured by RRC, between *sl-MinMCS-PSSCH* and *sl-MaxMCS-PSSCH* associated with the selected MCS table included in *sl-PSSCH-TxConfigList* and, if configured by RRC, overlapped between *sl-MinMCS-PSSCH* and *sl-MaxMCS-PSSCH* associated with the selected MCS table indicated in *sl-CBR-PriorityTxConfigList* for the highest priority of the sidelink logical channel(s) in the MAC PDU and the CBR measured by lower layers according to clause 5.1.27 of TS 38.215 [24] if CBR measurement results are available or the corresponding *sl-defaultTxConfigIndex* configured by RRC if CBR measurement results are not available in case the *sl-TxPoolExceptional* is used, or the corresponding *defaultCbrPartialSensing* configured by RRC if partial sensing is selected and the number of SL RSSI measurement slots over CBR measurement window is below *sl-MinNumRssiMeasurementSlots* in case the *TxPoolExceptional* is not used, or the corresponding *defaultCbrRandomSelection* configured by RRC if random selection is selected and the CBR measurement results are not available in case the *TxPoolExceptional* is not used;

**Q34. Would your company agree to the correction of P2/P3 proposed in R2-2209684?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
|  |  |  |

**[Summary]**

## Conclusion