**3GPP TSG-RAN2 Meeting 119-e** **R2-2208857**

**Online, 17th – 29th August, 2022**

**Agenda item: 6.15.4**

**Source: LG**

**Title: Summary of [AT119-e][510][V2X/SL] 38.321 corrections (Huawei)**

**Document for: Discussion and Decision**

1. Introduction

This is the summary of below offline discussion.

**[AT119-e][510][V2X/SL] 38.321 corrections (LG)**

**Scope:** Discuss proposed corrections in R2-2208281, R2-2206984, R2-2206985, R2-2207030, R2-2207183, R2-2207214, R2-2207249, R2-2207759, R2-2207850, R2-2207851, R2-2208054, R2-2208057, R2-2208258, R2-2208365, R2-2208513, R2-2208549, and R2-2208599 (including need of corrections and detailed wordings). Note corrections that are related to the discussion in [AT119-e][509] and [AT-119-e][511] will not be discussed. Merge agreeable corrections in a CR as much as possible (we can have separate CR for big change in NBC).

**Intended outcome:** 38.321 CR in R2-2208856 and discussion summary in R2-2208857 (if needed). Email approval.

**Deadline:** 8/23 13:00 (UTC)

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1. Discussion

## 2.1 For changes in R2-2208281

### 2.1.1 1st change:

**Reason for change**:

In case of SL specific MAC reset, a cancelling behaviour of triggered SL DRX command MAC CE and triggered IUC Request/Information MAC CE has been missed.

**Change**: Modify the MAC reset in 5.12

**5.12 MAC Reset**

(omit)

If a Sidelink specific reset of the MAC entity is requested for a PC5-RRC connection by upper layers, the MAC entity shall:

1> flush the soft buffers for all Sidelink processes for all TB(s) associated to the PC5-RRC connection;

1> consider all Sidelink processes for all TB(s) associated to the PC5-RRC connection as unoccupied;

1> cancel, if any, triggered Scheduling Request procedure only associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink Buffer Status Reporting procedure only associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink CSI Reporting procedure associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink DRX Command MAC CE associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink IUC-Request transmission procedure associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink IUC-Information Reporting procedure associated to the PC5-RRC connection;

1> stop (if running) all timers associated to the PC5-RRC connection;

1> reset the *numConsecutiveDTX* associated to the PC5-RRC connection;

1> initialize *SBj* for each logical channel associated to the PC5-RRC connection to zero.

**Q1: Would you company agree the 1st change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | Agree |  |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.1.2 2nd change:

**Reason for change**:

In case of SL specific MAC reset, if UE is not interested with groupcast or broadcast and UE has only one pair of Source Layer-2 ID and Destination Layer-2 ID corresponding to a PC5-RRC connection which has been established by upper layers, it is not necessary to maintain Uu DRX timer (i.e., *drx-HARQ-RTT-TimerSL, drx-RetransmissionTimerSL*) because there is no ongoing PC5 RRC Connection.

**Change**: Modify the MAC reset in 5.12

**5.12 MAC Reset**

(omit)

If a Sidelink specific reset of the MAC entity is requested for a PC5-RRC connection by upper layers, the MAC entity shall:

1> flush the soft buffers for all Sidelink processes for all TB(s) associated to the PC5-RRC connection;

1> consider all Sidelink processes for all TB(s) associated to the PC5-RRC connection as unoccupied;

1> cancel, if any, triggered Scheduling Request procedure only associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink Buffer Status Reporting procedure only associated to the PC5-RRC connection;

1> cancel, if any, triggered Sidelink CSI Reporting procedure associated to the PC5-RRC connection;

1> stop (if running) all timers associated to the PC5-RRC connection;

1> stop (if running) *drx-HARQ-RTT-TimerSL* associated to the PC5-RRC connection (if UE has only one pair of Source Layer-2 ID and Destination Layer-2 ID corresponding to a PC5-RRC connection which has been established by upper layers and there is no groupcast or broadcast indicated from upper layer);

1> stop (if running) *drx-RetransmissionTimerSL* associated to the PC5-RRC connection (if UE has only one pair of Source Layer-2 ID and Destination Layer-2 ID corresponding to a PC5-RRC connection which has been established by upper layers and there is no groupcast or broadcast indicated from upper layer);

1> reset the *numConsecutiveDTX* associated to the PC5-RRC connection;

1> initialize *SBj* for each logical channel associated to the PC5-RRC connection to zero.

**Q2: Would you company agree the 2nd change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | Disagree | Can rely on “1> stop (if running) all timers associated to the PC5-RRC connection;” to stop the Uu DRX timers. |
| OPPO | Disagree | We understand *drx-HARQ-RTT-TimerSL* and *drx-RetransmissionTimerSL* are Uu timers, and the MAC reset for PC5 should not impact the Uu timers. |
| Apple | Disagree | Same view as Xiaomi |
| Nokia | Disagree |  |
| ASUSTeK | Disagree |  |
| NEC | Disagree | Since current specification specifies to “stop (if running) all timers associated to the PC5-RRC connection”, it is not needed. |
| vivo | Disagree |  |
| Lenovo | Disagree | This is optimization, nothing broken for current text |
| Qualcomm | Disagree |  |

**[Summary]**

### 2.1.3 3rd change:

**Reason for change**:

In case of SL BWP deactivation, a cancelling behaviour of triggered SL DRX command MAC CE and triggered IUC Request/Information MAC CE has been missed.

**Change**: Modify the SL BWP deactivation in 5.15.2

**5.15.2 Sidelink**

(omit)

1> if the BWP is deactivated:

2> not transmit SL-BCH on the BWP, if configured;

2> not transmit S-PSS and S-SSS on the BWP, if configured;

2> not transmit PSCCH on the BWP;

2> not transmit SL-SCH on the BWP;

2> not receive PSFCH on the BWP, if configured;

2> not receive SL-BCH on the BWP, if configured;

2> not receive S-PSS and S-SSS on the BWP, if configured;

2> not receive PSCCH on the BWP;

2> not receive SL-SCH on the BWP;

2> not transmit PSFCH on the BWP, if configured;

2> suspend any configured sidelink grant of configured grant Type 1;

2> clear any configured sidelink grant of configured grant Type 2;

2> cancel, if any, triggered Scheduling Request procedure for sidelink;

2> cancel, if any, triggered Sidelink Buffer Status Reporting procedure;

2> cancel, if any, triggered Sidelink CSI Reporting procedure;

2> cancel, if any, triggered Sidelink DRX Command MAC CE associated to the PC5-RRC connection;

2> cancel, if any, triggered Sidelink IUC-Request transmission procedure associated to the PC5-RRC connection;

2> cancel, if any, triggered Sidelink IUC-Information Reporting procedure associated to the PC5-RRC connection.

**Q3: Would you company agree the 3rd change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | Agree |  |
| NEC | Agree |  |
| vivo | Agree | “associated to the PC5-RRC connection” can be removed to align with others. |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.1.4 4th change:

The related contributins are: 2nd change in **R2-2208054, R2-2208513**

**Reason for change**:

According to RAN1’s agreement, MAC layer of UE-A should provide physical layer with sidelink grant-related resource pool to be used for IUC information transmission.

* *Agreement made in RAN1#107-e meeting:*
  + *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.*

**Change**: Add 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-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.

**Q4: Would you company agree the 4th change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | Disagree | How to determine the preferred or non-preferred resource should be up to PHY. Even though the resource pool selection is performed by MAC, PHY is able to know the selected resource pool based on some interaction between PHY and MAC, which can be left to UE implementation. Then PHY determines the preferred or non-preferred resource within the resource pool.  Another reason is that when/whether to trigger IUC is determined by PHY for condition-based IUC, so MAC does not know when to delever this information to PHY, or some kind of “request-based” solution needs to be adopted, i.e., when condition satisfies and IUC is triggered, PHY request MAC to deliver the pool of resources and then MAC indicates this information to PHY, which is too complicated.  So we think we can leave this to UE implementation to handle. |
| OPPO | Disagree | We are not sure for condition-based IUC, whether it is MAC or PHY which triggered the info generation, we lean towards PHY layer, so tend to disagree. |
| Apple | Disagreee | For the condition-triggered IUC, the condition is known to the PHY layer, so preferrere or non-preferred resouece sets are generated by PHY layer w/o any pool information from MAC layer. The MAC layer only conduct pool selection for the tranmisison of IUC-info MAC CE. We do not think MAC layer need to pass the PHY to determine the resource sets,. |
| Nokia | Disagree | Similar comments as to what is stated above; We do not think that it is the intention to have the MAC layer initiate the IUC. Furthermore, we don’t think that the PHY gets a pool of resources from the MAC on which this is to be determined, as this is/should be signalled by the IUC request by itself, related to the assigned pool of resources. |
| Sharp | Agree | We think it is clear from the text in TS 38.214 that MAC triggers the PHY procedures to determine a set of preferred/non-preferred resources, indicating a resource pool as one of the parameters. |
| NEC | Disagree | Current specification is clear enough. |
| vivo | Disagree | We are also doubtful to indicate to pool to PHY layer in this way.  The impact by RAN1 agreement can be solved in pool selection procedure, instead of adding a new section. |
| Lenovo | Disagree | Agree the intention that for scheme 1 condition-based solution, IUC information is transmitted in the resource pool that provide the IUC information. But seems this impact the resource pool selection for IUC information transmission and should added in pool selection part |
| Qualcomm | Disagree | For condition based IUC info, the MAC may not know. Maybe a “Note” can be added for pool selection to reflect RAN1’s agreement. |

**[Summary]**

### 2.1.5 5th change:

The related contributins are: 2nd change in **R2-2208054**

**Reason for change**:

According to RAN1’s agreement, 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.

* *Agreement made in RAN1#107-e meeting:* 
  + *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*

**Change**: Modify the selection of pool of resources in 5.22.1.1, 522.1.10

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

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 a Sidelink Inter-UE Coordination Information is triggered by SL-IUC Request:

3> select a pool of resources in which the SL-IUC Request is received.

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:

**Q5: Would you company agree the 5th change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | See comments | This has already be covered by issue 6 of offline 511. So no need to duplicate the discussion here. |
| OPPO | Disagree | We understand this change is out of scope of this offline discussion and it is beding discussed in [511] in parallel. |
| Apple | See comment | Same understang as Xiaomi |
| Nokia | Not to treat | Same as above |
| Sharp | Agree | Rapporteurs can coordinate which offline discussion to cover this. Technically we think the proposed changes here are fine, and additionally similar text as proposed in 2.1.4 should be added for request based IUC. |
| NEC | See comment | Same understanding as Xiaomi |
| vivo | See comments | Ok to discuss in [511] |
| Lenovo | See comments | Ok to discuss in [511] |
| Qualcomm | Comment | Need coordinate with [511] |

**[Summary]**

### 2.1.6 6th change:

**Reason for change**:

According to the RAN1 agreement, when UE-A receives an IUC-Request from UE-B, behaviour in which the MAC layer delivers the information included in the IUC-Request to the PHY layer should be specified. That is, when creating the preferred RSC SET, the MAC layer delivers priority, sub-channel number, reservation interval, location-related information of selection window to the physical layer, and when generating the non-preferred RSC SET, only the location-related information of selection window is transmitted to the PHY layer from MAC layer.

* *Agreement made in RAN1#106bis-e meeting:* 
  + *For Condition 1-A-1 of Scheme 1, the set of resources preferred for UE-B’s transmission is a form of candidate single-slot resource as specified in Rel-16 TS 38.214 Section 8.1.4*
    - *When the inter-UE coordination information transmission is triggered by UE-B’s explicit request, the candidate single-slot resource(s) are determined in the same way according to Rel-16 TS 38.214 Section 8.1.4 with at least following parameters provided by signaling from UE-B. FFS whether or not to apply RSRP threshold increase in Step 7) of Rel-16 TS 38.214 Section 8.1.4.*
      * *Priority value to be used for PSCCH/PSSCH transmission* 
        + *It replaces prio\_TX*
      * *Number of sub-channels to be used for PSSCH/PSCCH transmission in a slot*
        + *It replaces L\_subCH*
      * *Resource reservation interval* 
        + *It replaces P\_rsvp\_TX*
      * *FFS: Starting/ending time location of resource selection window*
    - *FFS: In addition to Rel-16 procedure, use inter-UE coordination information from other UEs*
      * *If there is no consensus in RAN1#106bis-e, no further discussions for Rel-17*
* *Agreement made in RAN1#107-e meeting:*
  + *For Scheme 1, at least following parameters are provided by UE-B’s request:*
    - *Priority value to be used for PSCCH/PSSCH transmission*
    - *Number of sub-channels to be used for PSSCH/PSCCH transmission in a slot*
    - *Resource reservation interval*
* *Agreement made in RAN1#107bis-e meeting:*
  + *For Scheme 1, when the inter-UE coordination information transmission is triggered by UE-B’s explicit request,* 
    - *Starting/Ending time locations of resource selection window is provided by UE-B’s explicit request*
      * *Starting/Ending time locations of resource selection window is a form of combination of DFN index and slot index*

**Change**: Add 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.

**Q6: Would you company agree the 6th change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | Disagree | See our reply on Q4. We don’t think we need to explicitly specify this interaction in the specification. Can be left to UE implementation. |
| Apple | See comment | First, the IUC-requesdt may be also indicated in SCI-2C, so lower layer already knows all the information in this case. In this case, there is no need to have this procedure.  Second, for the case IUC request is only convery in MAC CE, the procedure may be needed, but we do not need to explicirt list all the information in detail, maybe a high-level statement such as “all necessary information to generate resouerce set” is sufficient. |
| Nokia | See comment | We tend to think that our comment in Q4 also is relevant for this, however, we acknowledge there may be a missing point. Thus, if majority agrees, we can go for an agreement for RAN2 to further discuss whether MAC needs to provide PHY information on resource pools for IUC, and then check next meeting. But prefer disagree. |
| NEC | Disagree | Can be left to UE implementation. |
| vivo | Disagree | We have some sympathy with Nokia’s comments, it would be better to have a discussion on this issue instead of discussing the CR directly. |
| Lenovo | Disagree | Can be left to UE implementation. |
| Qualcomm | Disagree | OK to UE implementation or a high level note |

**[Summary]**

### 2.1.7 7th change:

The related contributins are: 3rd change in **R2-2208054**

**Reason for change**:

7. 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 should be specified.

* *Agreement made in RAN1#109-e meeting:*
  + *X1, X2, and X3 are determined by UE-A’s implementation under the constraints defined in the specification (e.g., SL-LatencyBoundIUC-Report-r17, requirement of T\_2min)*
    - *UE-B can choose to not use any resource from the preferred/non-preferred resource set in its resource (re-)selection if that resource is earlier than (Tproc,0+Tproc,1+Tproc,2) after the resource of inter-UE coordination information transmission*
      * *For Tproc,2,*
        + *When only MAC CE is used for inter-UE coordination information transmission, it is equal to (Tproc,0+Tproc,1)*
        + *When MAC CE and SCI format 2-C are both used for inter-UE coordination information transmission, it is equal to Tproc,0*

*Note: this is assuming that SCI format 2-C is received*

* + - *Whether or not to make the time gap from the resource of inter-UE coordination information transmission to preferred/non-preferred resource in the inter-UE coordination information larger than (Tproc,0+Tproc,1+Tproc,2) is up to UE-A implementation.*

**Change**: Add a NOTE in 5.22.1.1

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

NOTE 3B2: When UE-B receives both a single preferred resource set and a single non-preferred resource set from the same UE-A or different UE-As, when UE-B has own sensing results, it is up to UE-B implementation to use the preferred resource set in its resource (re)selection for transmissions to the UE A providing the preferred resource set.

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 and SCI format 2-C is received. and are specified in clause 8.1.4 of TS 38.214 [7].

**Q7: Would you company agree the 7th change proposed in R2-2208281?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree (proponent) |  |
| xiaomi | Agree |  |
| OPPO | See comments | RAN1 (in R1-2206283/R1-2205848/R1-2205766/R1-2206096) is also discussing this issue (how to capture this agreement), we can wait for RAN1 conclusion first and then decide whether/how to update RAN2 spec. |
| Apple | No strong view |  |
| Nokia | Agree, but can wait | It may be reasonable to wait for RAN1, but we can agree if majority |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree comment | Maybe we can wait for RAN1 |

**[Summary]**

## 2.2 For changes in R2-2206984

### 2.2.1 change:

**Reason for change**:

In TS38.321, for resource selection of a selected sidelink grant, when enabling IUC scheme 1 and if a non-preferred resource set is received, MAC layers indicate the non-preferred resource set to the physical layer for sensing as specified in clause 8.1.4 of TS38.214, i.e. the physical layer excludes the candidate resources overlapping with the indicated non-preferred resource set. For re-evaluation and pre-emption, UE performs resource re-selection among the resources indicated by the physical layer, i.e. physical layer also performs sensing procedures. When enabling IUC scheme 1 and if a non-preferred resource set is received, it is not specified that the received non-preferred resource set is indicated to the physical layer for the sensing procedures.

**Change**:

**5.22.1.2a Re-evaluation and Pre-emption**

(omit)

1> if a resource(s) of the selected sidelink grant which has not been identified by a prior SCI is indicated for re-evaluation by the physical layer as specified in clause 8.1.4 of TS 38.214 [7];

2> 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 non-preferred resource set is received from a UE:

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

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

2> randomly select the time and frequency resource from the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7] for either the removed resource or the dropped resource, according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of either SL data available in the logical channel(s) by ensuring the minimum time gap between any two selected resources of the selected sidelink grant in case that PSFCH is configured for this pool of resources, and that a resource can be indicated by the time resource assignment of an SCI for a retransmission according to clause 8.3.1.1 of TS 38.212 [9];

2> replace the removed or dropped resource(s) by the selected resource(s) for the selected sidelink grant.

1> if any resource(s) of the selected sidelink grant which has been indicated by a prior SCI is indicated for pre-emption by the physical layer as specified in clause 8.1.4 of TS 38.214 [7]:

2> 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 non-preferred resource set is received from a UE:

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

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

**Q8: Would you company agree the change proposed in R2-2206984?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | comment | 1st comment is this “if level” is about UE has sidelink grant. so, it is questionable whether the MAC needs to provide non-preferred resource to the PHY.  2nd comment:  from MAC CR rapporteur point of view, if modification is required, rather than repeating the same sentence in every case, we can consider moving the level 3 sentence to the highest level and writing it as a general sentence. |
| xiaomi | Disagree | We have similar concern as LG, the placement of the proposed correction seems not correct. UE has already selected a SL grant, which means PHY already performs exclusion based on non-preferred resource set and delivers the resource to PHY. Also we have already captured in the spec that upon reception of non-preferred resource set, MAC should deliver this to PHY. So no need to duplicate for re-evaluation or pre-emption cases. |
| OPPO | Disagree | We understand re-evalution/pre-emption and IUC non-preferred resource set are different/independent solutions for avoiding resource collision, and the non-preferred resource set has been used (if received) before re-evalution and pre-emption checking, so no need for coupling of them. |
| Apple | Disagree | Same view as LG and Xiaomi |
| Nokia | Disagree |  |
| Sharp | Agree (Proponent) | For re-evaluation and pre-emption, PHY also performs resource exclusion procedure and MAC layer shall re-select among the indicated resources by PHY, while the specs do not clearly indicate the received non-preferred resource set is provided to PHY. For initial resource selection of a sidelink grant, it is noted that the non-preferred resource set is only applied for the initial period (i.e. 1st reservation period) of a sidelink grant, while for the resource in the later reservation period subject to pre-emption, if UE receives another non preferred resource set, it should be indicated to PHY for resource exclusion of pre-emption check.  @Xiaomi, could you further elaborate details of “upon reception of non-preferred resource set, MAC should deliver this to PHY”? |
| NEC | Disagree |  |
| vivo | Agree with comments | We agree with the intention here that IUC can be reused in pre-evaluation and pre-emption procedure. For the detailed way to change, we don’t have strong view, LG’s suggest seems also OK.  We think we should conclude first whether IUC can be reused in pre-evaluation and pre-emption procedure (and consult RAN1 if necessary). |
| Lenovo | Disagree | Non-preferred resource set is used by UE during SL grant creation and resource selection phase. For pre-emption and re-evaluation case, the SL grant is already created which is not the right place to use non-preferred resource set |
| Qualcomm | Disagree | No need, since either pre-emption or re-selection doesn’t trigger resource candidate re-selection conducted by PHY. |

**[Summary]**

## 2.3 For changes in R2-2206985

### 2.3.1 Change:

**Reason for change**: It is not specified for the case when resource(s) of the selected sidelink grant is overlapped with the received non-preferred resource set.

**5.22.1.2b** Re-selection for using a received resource conflict indication or a non-preferred resource set

If the MAC entity has been configured with Sidelink resource allocation mode 2 to transmit using pool(s) of resources in a carrier as indicated in TS 38.331 [5] based on full sensing, or partial sensing or random selection or any combination(s), the MAC entity shall for each Sidelink process:

1> if configured by RRC, *interUECoordinationScheme2* enabling reception of a resource conflict indication; and

1. 1if 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 8.1.4B of TS 38.214 [7]; or
2. if configured by RRC, *interUECoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set; and
3. if a resource of the selected sidelink grant is overlapped with the received non-preferred resource set:

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

**Q9: Would you company agree the change proposed in R2-2206985?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | According to RAN1 discussion, RAN1 has made an agreement to trigger resource reselection for scheme 2, but never made an agreement to trigger resource reselection for scheme 1. |
| xiaomi | Disagree | Based on current spec, if non-preferred resource set is received, MAC will indicates this to PHY and then PHY performs exclusion and deliver the filterd resource to MAC. Then MAC selects resources within the filter resource, so in our understanding, the overlapping between the selected SL grant and non-preferred resource set will not happen since PHY has excluded the non-preferred resource. |
| OPPO | Disagree | Same view with LG. |
| Apple | Disagree | Apple |
| Nokia | No strong view |  |
| Sharp | Agree (Proponent) | Regarding “so in our understanding, the overlapping between the selected SL grant and non-preferred resource set will not happen since PHY has excluded the non-preferred resource” mentioned by Xiaomi, as commented in 2.2.1, PHY excluded the non-preferred resource only for the 1st reservation period. If another non-preferred resource is received, for 2nd, 3rd, … reservation period of a sidelink grant, it may be overlap with this newly received non-preferred resource. |
| NEC | Disagree |  |
| vivo | Disagree | Same view as xiaomi, we don’t think the case described in the CR would happen. |
| Lenovo | Disagre | Agree with LG, better stick to RAN1 agreement |
| Qualcomm | Disagree |  |

**[Summary]**

## 2.4 For changes in R2-2207030

### 2.4.1 1st change:

**Reason for change**: In section 5.22.1.1, for the UE behavior when the preferred resource set is received, it is captured now as “randomly select the time and frequency resources for one or more transmission opportunities from the available resources belonging to the received preferred resource set for **a MAC PDU** to be transmitted to the UE providing the preferred resource set”. However, the MAC PDU is generated after LCP procedure, i.e., there is no MAC PDU generated during resource selection. Therefore, “a MAC PDU” should be changed into “SL-SCH data”.

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

4> randomly select the time and frequency resources for one transmission opportunity from the resources belonging to the received preferred resource set 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.

3> 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:

4> 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.

**Q10: Would you company agree above change proposed in R2-2207030?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Follow majority view |  |
| xiaomi | Follow majority view |  |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | No strong view |  |
| ASUSTeK | No strong view |  |
| NEC | Follow majority view |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.4.2 2nd change:

**Reason for change**: In section 5.22.1.3.2, according to the following agreement, UE should report ACK to gNB when mode 1 SL grant is not in SL active time of any destination that has data to be sent, so the “the destination” should be changed into “any destination”

when mode 1 SL grant is not in SL active time of any destination that has data to be sent, for initial transmission and the mode 1 grant is dropped, UE sends ACK to gNB.

**Change**: In section 5.22.1.3.2, change “the destination” into “any destination”.

**5.22.1.3.2 PSFCH reception**

(omit)

2> else 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 any destination that has data to be sent:

3> instruct the physical layer to signal a positive acknowledgement corresponding to the transmission on the PUCCH according to clause 16.5 of TS 38.213 [6].

**Q11: Would you company agree above change proposed in R2-2207030?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Disagree | Based on our understanding, since this is for retransmission, which means initial transmission has already been performed, then there is alredy a selected DST during the initial LCP procedure, we can not use “any” here. |
| OPPO | Agree (See comments) | Sorry for the mistake on the detailed change, the intention (as clarified in the reason for change) is to change the “the destination” into “any destination” in the initial transmission case. |
| Apple | Disagree | The reason for change mentioned “initial transmission” case, but the text change is applied to the retransmission case. We think the change is not right. |
| Nokia | Agree, for the initial case |  |
| NEC | Agree |  |
| vivo | Agree for initial case |  |
| Lenovo | Agree for initial case |  |
| Qualcomm | Agree comment | For initial transmission |

**[Summary]**

### 2.4.3 3rd change:

The related contributins are: **R2-2207214, R2-2208549**

**Reason for change**: In section 5.28.2 and 5.28.3, the name of SL DRX timers (*sl-DRX-GC-BC-OndurationTimer/sl-DRX-GC-InactivityTimer/sl-DRX-GC-BC-Cycle/sl-DRX-GC-RetransmissionTimer*) for groupcast/broadcast should be modified/differentiated with the names of unicast SL DRX timers since the RRC configurations are different.

**Change**: In section 5.28.2 and 5.28.3, modify the name of SL DRX timers (*sl-DRX-GC-BC-OndurationTimer/sl-DRX-GC-InactivityTimer/sl-DRX-GC-BC-Cycle/sl-DRX-GC-RetransmissionTimer*) for groupcast/broadcast.

**Q12: Would you company agree above change proposed in R2-2207030?**

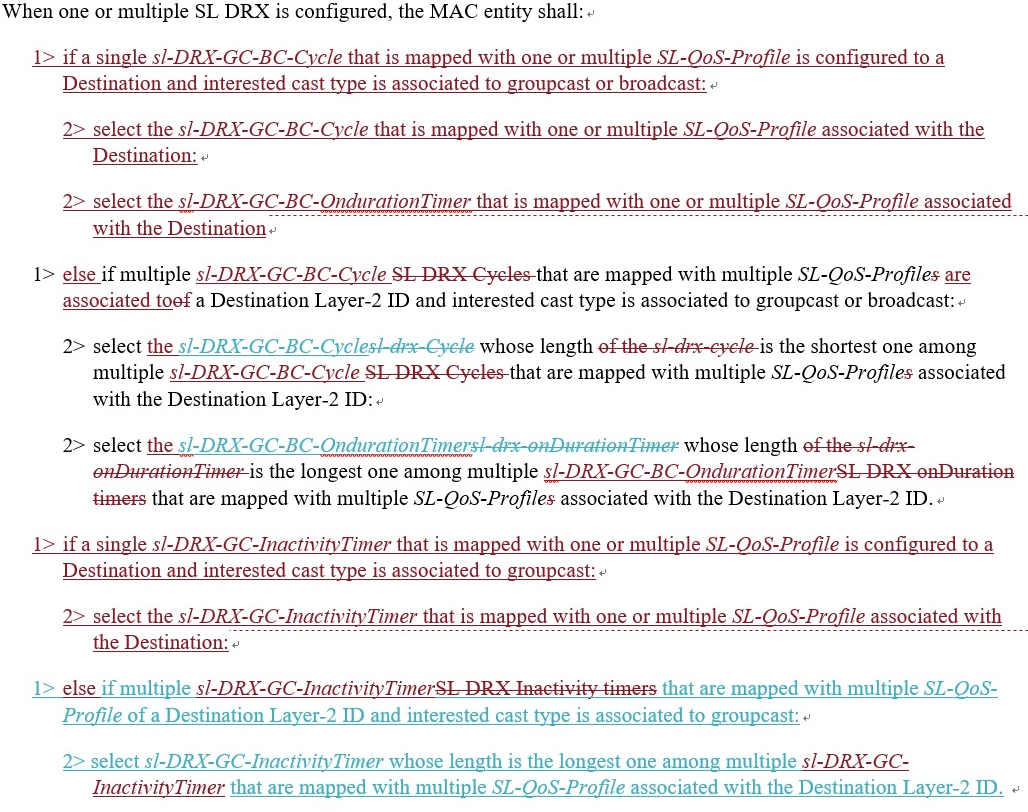
|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree | From MAC CR rapporteur point of view, modification will be reflected in the CR (R2-2208856). |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | Agree |  |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.4.4 4th change:

**Reason for change**: For groupcast/broadcast, the DRX cycle, on\_duration timer, and inactivity timer are configured/determined per-QoS profile, however, the UE behavior on SL DRX parameters determination based on QoS information is missing in MAC specification now, and should be captured for clear UE operation.

**Change**: In section 5.28.2, add the UE behaviour on determining SL groupcast/broadcast DRX parameters based on QoS information.

****

**Q13: Would you company agree above change proposed in R2-2207030?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Comments | Not sure if the handling of single cycle/inactivity timer should be explicitly captured or not as if there is only one cycle/inactivity timer, the only one cycle/inactivity timer is also the shorted cycle/longest inactivity timer and also matches the current condition and will be selected. |
| OPPO | Agree | For the single cycle/inactivity timer case, the reason for the change is for groupcast/broadcast, the DRX cycle, on\_duration timer, and inactivity timer are configured/determined per-QoS profile, however, the UE behavior on SL DRX parameters determination based on QoS information is missing in MAC specification now, we understand it should be captured for clear UE operation |
| Apple | Agree |  |
| Nokia | No strong view | Tend to lean towards xiaomi’s comments |
| NEC | Agree |  |
| vivo | Comment | Slightly prefer to only keep the handling case for multiple timers down-selection since single timer is a special case and included. |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.4.5 5th change:

**Reason for change**: In section 5.28.2, the value of *sl-drx-SlotOffset* should be n/32 ms, so the formula of *sl-drx-SlotOffset* is not correct now.

**Change**: In section 5.28.2, change the formula of *sl-drx-SlotOffset* into “*sl-drx-SlotOffset* (ms) = Destination Layer-2 ID modulo the number of slots in one subframe/**32** (ms).”

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

*sl-drx-SlotOffset* (ms) = Destination Layer-2 ID modulo the number of slots in one subframe/32 (ms).

**Q14: Would you company agree above change proposed in R2-2207030?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | See comment | sl-drx-SlotOffset means slot offset which UE should delay to start the cycle from a specific slot within 1ms (i.e. subframe). However, a slot occupies varying numbers of 1/32 subframes based on different numerologies (i.e. results in different slot length), so it is not correct to divide the derived slot value by a fixed value 32. We suggest 2 ways to adjust the formula:  1:  *sl-drx-SlotOffset* (1/32 ms) = (the number of 1/32 ms in one slot) x (Destination Layer-2 ID modulo the number of slots in one subframe) (1/32 ms).  2:  *sl-drx-SlotOffset* (ms) = (Destination Layer-2 ID modulo the number of slots in one subframe)**/** (ms).  Where is number of slots in a subframe according to 38.211. |
| NEC | Agree |  |
| vivo | See comments | As ASUSTeK mentioned, we may need to consider the numerology and the option-2 brought by ASUSTeK seems clearer to us. |
| Lenovo | Agree | Follow the agreement that *sl-drx-SlotOffset* is in multiples of 1/32 ms |
| Qualcomm | Agree comment | “*sl-drx-SlotOffset* (ms) = (Destination Layer-2 ID modulo the number of slots in one subframe)/**32** (ms).” |

**[Summary]**

### 2.4.6 6th change:

**Reason for change**: Some typo modifications (missing space, missing “s”, unnecessary “s”)..

**Change**: In section 5.22.1.1 and 5.28.2, fix some typos, i.e., add an “(s)” after “one or multiple SL DRX” and missing space between “*sl-InterUE-CoordinationScheme1*” and “enabling”, remove the “s” from “*SL-QoS-Profile****s****”*.

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

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 UE(s) receiving SL-SCH data:

(omit)

3> if configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set and neither preferred resource set nor non-preferred resource set is received from a UE:

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

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.

**Q15: Would you company agree above change proposed in R2-2207030?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | Agree |  |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## 2.5 For changes in R2-2207183

### 2.5.1 1st change:

**Reason for change**:

When MAC entity selects resources corresponding to transmission(s) of multiple MAC PDUs, MAC shall use the selected resource to select a set of periodic resources spaced by the resource reservation interval for multiple transmissions opportunities of the MAC PDUs.

- However, in current spec, a set of periodic resources spaced by the resource reservation interval are also selected in single MAC PDU case, which is not right.

- For multiple MAC PDUs, current spec wrongly use "level 4>" to performs the selection of a set of periodic resources, which makes the selection only applicable under the upper "level 3>" condition. However, this selection procedure should also be applied for other " level 3>" cases.

**Change**: For the resource selection for a single MAC PDU case, remove the sentence for resource seletion for a set of periodic resources.

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

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].

(omit)

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:

(omit)

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, and/or the latency requirement of the triggered SL-CSI 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].

(omit)

4> if there are available resources left in the received preferred resource set for more transmission opportunities:

5> randomly select the time and frequency resources for one or more transmission opportunities from the available resources belonging to the received preferred resource set 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, and/or the latency requirement of the triggered SL-CSI 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].

(omit)

4> consider a transmission opportunity which comes first in time as the initial transmission opportunity and other transmission opportunities as the retransmission opportunities;

4> consider all the transmission opportunities as the selected sidelink grant;

3> else:

4> consider the set as the selected sidelink grant.

3> use the selected sidelink grant to determine PSCCH duration(s) and PSSCH duration(s) according to TS 38.214 [7].

NOTE 3A1: If configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set and if multiple preferred resource sets are received from the same UE, it is up to UE implementation to use one or multiple of them in its resource (re)selection.

**Q16: Would you company agree 1st change proposed in R2-2207183?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Comments | In the current spec “a set of periodic resources spaced by the resource reservation interval” is used to determine the retransmission opportunies for single MAC PDU, we don’t see any issue here. Not sure if there is any RAN1 agreement that “a set of periodic resources spaced by the resource reservation interval” does not apply to single MAC PUD. But we are not convienced to change this part directly without any further check with RAN1. |
| OPPO | Agree | We agree with this change and we understand in R16, the “a set of periodic resources spaced by the resource reservation interval” is only used for multiple MAC PDU transmission. |
| Apple | Agree | Seems this comes from a copy/paste error for IUC. The single MAC PDU reservation does not use resrouce reservation interval |
| Nokia | OK if clear majority |  |
| NEC | Agree(proponent) | One more change related to the following was missed in the Change part, just added it.  “For multiple MAC PDUs, current spec wrongly use "level 4>" to performs the selection of a set of periodic resources, which makes the selection only applicable under the upper "level 3>" condition. However, this selection procedure should also be applied for other " level 3>" cases.” |
| vivo | Agree | Can follow the majority. |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.5.2 2nd change:

**Reason for change**:

For the same reason as 1), when determine the SL grant, there is no so called first set and other set of resources for single MAC PDU case which should only exist in multiple MAC PDUs case. The correct one should be *"transmission opportunity which comes first in time"* and "*other transmission opportunities*".

**Change**: Use following sentence instead of current one to determine SL grant for single MAC PDU

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

4> if configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set and when the UE determines the resources for Sidelink Inter-UE Coordination Information transmission upon explicit request from a UE:

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, the remaining PDB of SL data available in the logical channel(s) allowed on the carrier, and/or the latency requirement of the triggered SL-CSI and the latency requirement of the Sidelink Inter-UE Coordination Information transmission.

4> consider a transmission opportunity which comes first in time as the initial transmission opportunity and other transmission opportunities as the retransmission opportunities;

4> consider all the transmission opportunities as the selected sidelink grant;

3> else:

4> consider the set as the selected sidelink grant.

3> use the selected sidelink grant to determine PSCCH duration(s) and PSSCH duration(s) according to TS 38.214 [7].

NOTE 3A1: If configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set and if multiple preferred resource sets are received from the same UE, it is up to UE implementation to use one or multiple of them in its resource (re)selection.

**Q17: Would you company agree 2nd change proposed in R2-2207183?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Comments | See our reply above. |
| OPPO | Agree |  |
| Apple | Agree |  |
| Nokia | OK if majority |  |
| NEC | Agree(proponent) |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.5.3 3rd change:

**Reason for change**: UE-A's behaviour is captured to select resources for IUC transmission. However, current sentence "*sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set and when the UE determines the resources for Sidelink Inter-UE Coordination Information transmission upon explicit request from a UE", seems to define UE-B's behaviour. The word “reception” makes the spec hard to understand, so suggest changing to “transmission”.

**Change**:

Change "reception" to "transmission" of preferred resource set and non-preferred resource set.

**5.22.1.1 SL Grant reception and SCI transmission**

(omit)

3> if configured by RRC, *sl-InterUE-CoordinationScheme1* enabling transmission of preferred resource set and non-preferred resource set and when the UE determines the resources for Sidelink Inter-UE Coordination Information transmission upon explicit request from a UE:

4> 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, the remaining PDB of SL data available in the logical channel(s) allowed on the carrier, and/or the latency requirement of the triggered SL-CSI and the latency requirement of the Sidelink Inter-UE Coordination Information transmission.

**Commnet from MAC CR rapporteur point of view**: I understand the intention of the correction. From MAC CR rapporteur of view, it seems that it should be modified as follows in all parts as well as in that part.

- “if configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception/transmission”

**Q18: Would you company agree above suggestion of MAC CR rapporteur about the 3rd change proposed in R2-22077183?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | comment | I understand the intention of the correction. From MAC CR rapporteur of view, it seems that it should be modified as follows in all parts as well as in that part.  - “if configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception/transmission” |
| xiaomi | Can follow the majority |  |
| OPPO | Agree | We slightly prefer the way proposed in R2-22077183 since it is clearer. |
| Apple | Agree |  |
| Nokia | Agree | Prefer to follow OPPOs proposal |
| NEC | Agree(proponent) | Our understanding is that *“sl-InterUE-CoordinationScheme1* enabling reception” refers to UE B, whereas “*sl-InterUE-CoordinationScheme1* enabling transmission” refers to UE A.  Here, the intention is to specify UE A’s behaviour. To avoid confusion, we proposed to change reception to transmission. We are fine with CR rapporteur proposal. |
| vivo | Can follow the majority | Either way is ok to us. |
| Lenovo | Agree | We do not think all place needs to be changed to “reception/transmission”, since except proposed changing part for IUC transmission, other parts are all for for resource selection based on received IUC information. |
| Qualcomm | Agree |  |

**[Summary]**

## 2.6 For changes in R2-2207214

### 2.6.1 1st change:

**Reason for change**: In section 5.28.1, the InactivityTime are not used for SL broadcast for both TX UE and RX UE, the description of ‘except for the broadcast transmission’ seems that the InactivityTime timer is only not used for TX UE.

**Change**: In section 5.28.1, change “broadcast transmission” to “broadcast communication”.

**5.28.1 General**

(omit)

- *sl-drx-InactivityTimer*/*sl-DRX-GC-InactivityTimer* (except for the broadcast communication): the duration after the first slot of SCI (i.e., 1st stage SCI and 2nd stage SCI) reception in which an SCI indicates a new SL transmission for the MAC entity;

**Q19: Would you company agree 1st change proposed in R2-2207214?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Nokia | Agree |  |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.6.2 2nd change:

**Reason for change**: In section 5.28.1, the RetransmissionTimer and HARQ-RTT-Timer are not used for SL broadcast process for both TX UE and RX UE, the description of ‘except for the broadcast transmission’ seems that the associated timer is only not used for TX UE.

**Change**: In section 5.28.1, change “broadcast transmission” to “broadcast process”.

**5.28.1 General**

(omit)

*sl-drx-HARQ-RTT-Timer/sl-DRX-GC-HARQ-RTT-Timer* (per Sidelink process except for the broadcast process): the minimum duration before an SL HARQ retransmission is expected by the MAC entity.

**Q20: Would you company agree 2nd change proposed in R2-2207214?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | Comment | We are ok to change “transmission” to “process”. On the other hand, since there are multiple SL HARQ RTT timer for enabled/disabled HARQ feedback and for UC/GC (i.e. *sl-drx-HARQ-RTT-Timer1/sl-drx-HARQ-RTT-Timer2/sl-DRX-GC-HARQ-RTT-Timer1/sl-DRX-GC-HARQ-RTT-Timer2*), the change in 5.28.1 may not be sufficient. Suggest to consider the change together with the outcome of Q 2.8.2 |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree with comments | Agree with the intention. But “broadcast process” may be confused since DL also has broadcast process. Suggest to change to “SL broadcast process” |
| Qualcomm | Agree |  |

**[Summary]**

### 2.6.3 3rd change:

**Reason for change**: In section 5.28.2, a next retransmission opportunity is not scheduled in the SCI,it is indicated in the SCI.

**Change**: In section 5.28.2, change “scheduled” to “indicated”.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

2> if the SCI indicates an SL transmission:

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

**Q21: Would you company agree above change proposed in R2-2207214?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | Not critical |
| Apple | Agree |  |
| xiaomi | Can follow the majority |  |
| OPPO | Disagree | Agree with LG |
| Nokia | Agree | We are fine with agreeing to this change, as “scheduling” can be misleading |
| ASUSTeK | Agree |  |
| NEC | follow majority view |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.6.4 4th change:

**Reason for change**: In section 5.28.2, the description of “retransmission resource timing of the next retransmission resource in the SCI” brings ambiguity.

**Change**: In section 5.28.2, change description of “retransmission resource timing of the next retransmission resource” to “timing of the next retransmission resource”.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

2> if the SCI indicates an SL transmission:

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

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

**Q22: Would you company agree above change proposed in R2-2207214?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | Not critical |
| Apple | Agree |  |
| xiaomi | Disagree | Agree with rapp. |
| OPPO | Disagree | Current specification is clearer. |
| Nokia | Disagree | Prefer specification text |
| ASUSTeK | No strong view |  |
| NEC | Disagree |  |
| Vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Disagree | Not critical |

**[Summary]**

### 2.6.5 5th change:

**Reason for change**: In section 5.28.2, it describes the behaviour of UE receiving SL-SCH Data, as we know, the RX UE start the sl-drx-HARQ-RTT-Timer for the corresponding Sidelink process in the slot following the end of PSSCH reception, not transmission.

**Change**: In section 5.28.2, change “PSSCH transmission (i.e., currently received PSSCH)” to “PSSCH reception”.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

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

4> start the *sl-drx-HARQ-RTT-Timer/sl-DRX-GC-HARQ-RTT-Timer* for the corresponding Sidelink process in the slot following the end of PSSCH reception.

**Q23: Would you company agree above change proposed in R2-2207214?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | With the description of i.e., (currently received PSSCH), it is clear that it is a receive behavior. |
| Apple | Disagree | The original text is clear |
| xiaomi | Disagree |  |
| OPPO | Disagree |  |
| Nokia | Follow majority |  |
| NEC | Disagree |  |
| vivo | Disagree | Not necessary. |
| Lenovo | Disagree |  |
| Qualcomm | Disagree | No need |

**[Summary]**

### 2.6.6 6th change:

**Reason for change**: In section 5.28.3, the description about who and when sending SL DRX Command MAC CE is missing, as previous discussion, it is agreed that when to send SL DRX Command MAC CE is up to UE implementation. So at least a note is needed.

**Change**: In section 5.28.3, add a NOTE that A UE may send SL DRX Command MAC CE to receiving UE for unicast and when to send SL DRX Command MAC CE is up to UE implementation.

**5.28.3 Behaviour of UE transmitting SL-SCH Data**

(omit)

NOTE 1: A UE may assume that a resource for retransmission is in the Active time if an initial transmission causes the *sl-drx-RetransmissionTimer* to be started at the receiving UE.

NOTE 2: A UE may send SL DRX Command MAC CE to receiving UE for unicast and when to send SL DRX Command MAC CE is up to UE implementation.

**Q24: Would you company agree above change proposed in R2-2207214?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | See comment | We think only the 2nd part is needed for this NOTE. For example:, “when a TX UE sends SL DRX Command MAC CE to its unicas RX UE is up to TX UE implementation” |
| xiaomi | Agree |  |
| OPPO | See comment | We can follow majority view on whether too capture the “up to UE implementation” UE behaviour. |
| Nokia | Tend to disagree | We don’t see the big need |
| ASUSTeK | Can follow majority |  |
| NEC | Follow majority view |  |
| vivo | Agree | Ok to add this. |
| Lenovo | Agree |  |
| Qualcomm | Agree | OK to add the note. |

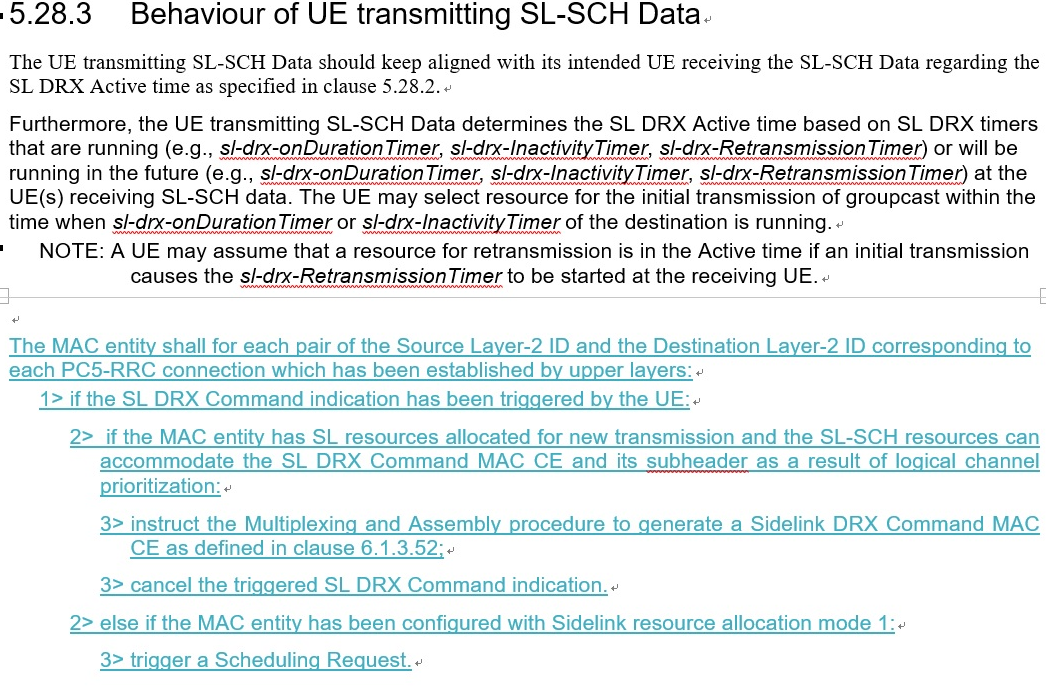
**[Summary]**

## 2.7 For changes in R2-2207249

### 2.7.1 Change:

**Reason for change**: It is observed that the procedure texts of SR trigger for SL DRX Command MAC CE is missing in the MAC spec.

**Change**:



**Q25: Would you company agree above change proposed in R2-2207249?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| xiaomi | Agree |  |
| Nokia | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## 2.8 For changes in R2-2207759

### 2.8.1 Change:

**Reason for change**: In current specification, upon reception of a new groupcast transmission, RX UE starts the inactivity timer. However, the TX UE should also starts the inactivity timer, otherwise the TX UE may miss some packet from other UEs within the same group.

**Change**: Add corresponding descriptions for TX UE to start the inactivity timer upon a new groupcast transmission.

**5.28.3 Behaviour of UE transmitting SL-SCH Data**

(omit)

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

1> if the SCI indicates a new transmission and the cast type is set to groupcast:

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

**Q26: Would you company agree above change proposed in R2-2207759?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree (proponent) |  |
| OPPO | See comments | We understand this change should be captured in 5.28.2 (Behaviour of UE receiving SL-SCH Data) not 5.28.3 since it is UE behaviour on start the DRX timer for reception;  And there is no detailed timer running mechanism which is captured in 5.28.3 now, only include this in 5.28.3 is werid.  Otherwise, if we put it in 5.28.3, it maybe misunderstood as the behahvior for “inactivitytimer for transmission”  Please find the change we proposed in R2-2204574 (change-7) as follows |
| Nokia | We would agree to OPPOs change |  |
| NEC | Agree |  |
| vivo | Comment | The intention makes sense but details may be left to TX’UE implementation. |
| Lenovo | We would agree to OPPOs change |  |
| Qualcomm | Agree |  |

**[Summary]**

### 2.8.2 Change:

Related contribution is**: R2-2208549**

**Reason for change**: During last RAN2 meeting, we reached the agreement to define separate RTT timers for HARQ enabled case and HARQ disabled with PSFCH configured case, which has impact on the RTT timer handling and should be reflected in the specification.

**Change**: Clarify different RTT timers are applied to HARQ enabled case and HARQ disabled with PSFCH configured case during RTT timer handling procedure.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

When one or multiple SL DRX is configured, 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:

2> select *sl-drx-Cycle* whose length of the *sl-drx-cycle* is the shortest one among multiple SL DRX Cycles that are mapped with multiple *SL-QoS-Profiles* associated with the Destination Layer-2 ID:

2> select *sl-drx-onDurationTimer* whose length of the *sl-drx-onDurationTimer* is the longest one among multiple SL DRX onDuration timers that are mapped with multiple *SL-QoS-Profiles* associated with the Destination Layer-2 ID.

1> if an *sl-drx-HARQ-RTT-Timer1* or *sl-drx-HARQ-RTT-Timer2* 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* for the corresponding Sidelink process in the first slot after the expiry of *sl-drx-HARQ-RTT-Timer1* or *sl-drx-HARQ-RTT-Timer2*.

(omit)

2> if the SCI indicates an SL transmission:

3> if a next retransmission opportunity is scheduled 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:

4> use the *sl-drx-HARQ-RTT-Timer* configured by upper layers.

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

4> start the *sl-drx-HARQ-RTT-Timer2* 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-Timer1* 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-Timer1* 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-Timer1* 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-Timer1* 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-Timer1* 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-Timer2* 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-Timer2* for the corresponding Sidelink process in the slot following the end of PSSCH transmission (i.e., currently received PSSCH).

**Q27: Would you company agree above change proposed in R2-2207759?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree (proponent) |  |
| OPPO | See comments | We understand the intention, and we also try to fix this issue in our CR (change 10 in R2-2207030), and we prefer the way as follows since it is clearer and simpler  2> if the SCI indicates an SL transmission:  3> if a next retransmission opportunity is scheduled 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:  4> set the *sl-drx-HARQ-RTT-Timer* based on *sl-drx-HARQ-RTT-Timer1* configured by upper layers 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.  With the above change, we don’t need to change the RTT timer name every where in the procedural text of timer running mechanism. |
| Nokia | Agree | We think changing the RTT timer name everywhere make sense |
| ASUSTeK | See comment | We also try to fix this issue in our CR R2-2208549. In addition to two different HARQ RTT timer values, two sets of HARQ RTT timers can be configured for UC and GC (*sl-drx-HARQ-RTT-Timer1/sl-drx-HARQ-RTT-Timer2/sl-DRX-GC-HARQ-RTT-Timer1/sl-DRX-GC-HARQ-RTT-Timer2*).  Moreover, HARQ RTT timer can also be derived by UE itself if SCI indicates a retransmission, so the timer may not even be from these configured values:  2> if the SCI indicates an SL transmission:  3> if a next retransmission opportunity is scheduled 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:  4> use the *sl-drx-HARQ-RTT-Timer* configured by upper layers.  Therefore, we propose to clarify all possibilities in the parameter description to capture all cases while avoiding chaging all related texts in the entire section:  - *sl-drx-HARQ-RTT-Timer* (per Sidelink process except for the broadcast transmission): the minimum duration before an SL HARQ retransmission is expected by the MAC entity. The timer can be derived by the MAC entity or be configured by *sl-drx-HARQ-RTT-Timer1/sl-drx-HARQ-RTT-Timer2/sl-DRX-GC-HARQ-RTT-Timer1/sl-DRX-GC-HARQ-RTT-Timer2.* |
| NEC | Agree |  |
| vivo | Agree | The intention is ok and the detailed way for text can be discussed. ASUSTeK’s suggestion is slightly preferred by us. |
| Lenovo | Agree with the intention | detailed way for text can be further discussed |
| Qualcomm | Agree |  |

**[Summary]**

## 2.9 For changes in R2-2207850, R2-2207851

### 2.9.1 Change:

**Reason for change**:

RAN2#114-e:

*“For Tx UE configured with sidelink resource allocation mode 1, it should start or restart the Uu drx-InactivityTimer if the UE receives a PDCCH indicating a new SL transmission.”*

However, while the agreement is applied to procedures in the current version, it is not applied to definitions.

**Change**:

**5.7 Discontinuous Reception (DRX)**

(omit)

RRC controls DRX operation by configuring the following parameters:

- *drx-onDurationTimer*: the duration at the beginning of a DRX cycle;

- *drx-SlotOffset*: the delay before starting the *drx-onDurationTimer*;

- *drx-InactivityTimer*: the duration after the PDCCH occasion in which a PDCCH indicates a new UL, DL or SL transmission for the MAC entity;

**Q28: Would you company agree above change proposed in R2-2207851?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Nokia | Agree |  |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## 2.10 For changes in R2-2208057

### 2.10.1 1st Change:

**Reason for change**:

In RAN2#113bis, it was agreed that the RX UE (re)starts the inactivity timer in the first slot after SCI reception for unicast and groupcast:

*11: For unicast, the RX UE (re)starts the inactivity timer in the first slot after SCI (SCI1+SCI2) reception.*

*14: SL Inactivity timer is supported for groupcast. FFS on the scenarios where it is supported.*

*17: As a baseline, agreements 7-13 inclusive are applied to SL inactivity timer for groupcast, with the difference that “src/dest L2 ID pair” is replaced with “groupcast L2 destination ID or src/dest L2 id pair” (dependent on the conclusion of proposal 17). Any specific handling which may be needed for synchronization of inactivity timers for the groupcast case is FFS.*

However, in 5.28.2, it is described that the UE starts or restarts sl-drx-InactivityTimer after the first slot of SCI reception, which is not aligned with above agreements. Furthermore, it is also not correct since current description does not specify the detailed start or restart timing for sl-drx-InactivityTimer.

**Change**: In 5.28.2, the start or restart timing for sl-drx-InactivityTimer is changed to in the first slot after SCI reception.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

(omit)

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.

**Q29: Would you company agree above change proposed in R2-2208057?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Disagree | The current wording in spec is clearer to us and is align with Uu DRX |
| Nokia | Disagree | Would prefer alignment with Uu DRX |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## 2.11 For changes in R2-2208258

### 2.11.1 Change:

**Reason for change**:

In clause 5.22.1.1 the SL grant selection procedures with inter UE coordination schemes specify UE operation about handling the case *sl-InterUE-CoordinationScheme1* is configured by RRC or the case *sl-InterUE-CoordinationScheme1* is not configured by RRC. But the operation is not written in complete sentence as below example in the level 3> procedures and this makes UE operation unclear and lack of the specification readability:

3> if not configured by RRC, *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set:

In clause 5.22.1.1 and clause 5.22.1.2b there are more places with this issue.

In clause 5.22.1.2b the parameter name is not aligned with that in RRC. So this parameter name should be also fixed.

1> if configured by RRC, *interUECoordinationScheme2* enabling reception of a resource conflict indication; and

**Change**:

(1) The case that *sl-InterUE-CoordinationScheme1* is not configured by RRC is changed as below:

3> if *sl-InterUE-CoordinationScheme1* enabling reception of preferred resource set and non-preferred resource set is not configured by RRC:

(2) The case that sl-InterUE-CoordinationScheme1 is configured by RRC is changed as below:

3> if *sl-InterUE-CoordinationScheme1*enabling reception of preferred resource set and non-preferred resource set is configured by RRC and neither preferred resource set nor non-preferred resource set is received from a UE:

(3) *interUECoordinationScheme2* is modified as *sl-interUE-CoordinationScheme2*

**Q30: Would you company agree the corrections proposed in R2-2208258?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Nokia | Agree |  |
| NEC | Agree |  |
| vivo | Agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## 2.12 For changes in R2-2208365

### 2.12.1 Change:

**Reason for change**: In RAN2#118-e meeting, it has been discussed whether the UE should start HARQ RTT timer for SL (drx-HARQ-RTT-TimerSL) for the corresponding SL HARQ process when the PUCCH is not transmitted due to a measurement gap or a LBT failure, in addition to current description where PUCCH is not transmitted due to UL/SL prioritization. Majority of companies’ view in email discussion [AT118-e][707] is to have a general description covering all cases where the UE should start the HARQ RTT timer for SL when PUCCH is not transmitted successfully. In addition, retransmission timer for SL (drx-RetransmissionTimerSL) should be started as well according to the expiry of drx-HARQ-RTT-TimerSL that was started due to the above conditions.

**Change**: Modify DRX conditions so that the UE starts the drx-RetransmissionTimerSL for a SL HARQ process when the drx-HARQ-RTT-TimerSL expires and the HARQ NACK feedback for the corresponding HARQ process is not transmitted on PUCCH due to all cases. Modify DRX conditions so that the UE starts the drx-HARQ-RTT-TimerSL for a SL HARQ process after the end of a PUCCH resource corresponding to a SL HARQ feedback when the PUCCH transmsision is not transmitted due to all cases.

**5.7 Discontinuous Reception (DRX)**

(omit)

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 not transmitted on PUCCH; or

2> if the PUCCH resource is not configured for the SL grant:

3> start the *drx-RetransmissionTimerSL* for the corresponding HARQ process in the first symbol after the expiry of *drx-HARQ-RTT-TimerSL*.

(omit)

2> if the PDCCH indicates an SL transmission:

3> if the PUCCH resource is configured:

4> start the *drx-HARQ-RTT-TimerSL* for the corresponding HARQ process in the first symbol after the end of the corresponding PUCCH resource for the SL HARQ feedback;

4> stop the *drx-RetransmissionTimerSL* for the corresponding HARQ process.

**Q31: Would you company agree the corrections proposed in R2-2208365?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | In terms of clearly specifying the RAN2 agreement, it is preferable to keep the current text.  Moreover, in the email discussion ([AT118-e][707]) of the last meeting, the majority view was to keep the current text.  *[Summary Q19] Out of 13 companies*  *Yes: 4*  *No: 7 (keep current text)*  *Follow the majority: 2* |
| Apple | Disagree |  |
| xiaomi | Disagree | Same view as LG. |
| OPPO | See comments | We understand the first correction is also being discussed in [511], so tend to wait for conclusion from [511]. |
| Nokia | Disagree |  |
| ASUSTeK | Agree | In [AT118-e][707], the result when discussing how to handle HARQ timer for SL on Uu is as follow, where majority of companies can agree on a more general text to cover all cases:  [Summary Q11] Out of 13 companies  Yes: 3  Yes with change 2: Removing “due to a measurement gap or a LBT failure”  No: 2  No strong view: 2  Others: (5 companies) Removing the “due to UL/SL prioritization” in the current text.  We also agree with OPPO that the conclusion of the change should be aligned with discussion in [511]. |
| NEC | Disagree |  |
| vivo | Agree | We think the change can be more general to cover all cases and it is ok to us to go that way. |
| Lenovo | Disagree |  |
| Qualcomm | Disagree | Reflect RAN2’s agreement |

**[Summary]**

## 2.13 For changes in R2-2208549

### 2.13.1 1st Change:

**Reason for change**: When considering the SL active time for receiving SL-CSI reporting, it is not clear in the specification on when to start considering the time period of latency bound of SL CSI reporting.

**Change**: Modified description on active time for SL-CSI reporting so that the SL active time includes the time while the SL-CSI reporting MAC CE has not been received in the period of sl-LatencyBoundCSI-Report configured by RRC after the transmission of the request of SL-CSI reporting.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

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

- the SL-CSI reporting MAC CE has not been received in the period of *sl-LatencyBoundCSI-Report* configured by RRC after the transmission of the request of SL-CSI reporting ; or

**Q32: Would you company agree 1st change proposed in R2-2208549?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Disagree | Current text is clear enough. |
| Apple | See comment | Agree with the intention, but think the two bullets can be simplified with "when *sl-CSI-ReportTimer*  is running” |
| xiaomi | Disagree | Same view as LG. |
| OPPO | Disagree | Current text is clear enough. |
| Nokia | No strong view | Sympathy for the intention |
| ASUSTeK | Agree | Proponent. In our understanding, *sl-CSI-ReportTimer* is used in Rx UE while this condition is for request-transmitting UE, so the conditions need to be specified without using the timer. |
| NEC | Disagree |  |
| vivo | Disagree | Current text is more preferable since this bullet focus on the case that SL CSI reporting MAC CE is received. |
| Lenovo | Disagree |  |
| Qualcomm | Disagree | Prefer the current text |

**[Summary]**

### 2.13.2 2nd Change:

**Reason for change**: When considering the SL active time for announced periodic transmissions, the current specification does not cover the cases of multiple-slot transmission and periodic transmission with single transmission opportunity.

**Change**: Clarified that SL active time can include multiple slots or include single periodic transmission opportunity announced by a Tx UE.

**5.28.2 Behaviour of UE receiving SL-SCH Data**

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

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

**Q33: Would you company agree 2nd change proposed in R2-2208549?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Agree |  |
| Nokia | Agree |  |
| ASUSTeK | Agree |  |
| NEC | Agree |  |
| vivo | agree |  |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## 2.14 For changes in R2-2208599

### 2.14.1 Change:

**Reason for change**:

In Rel-16, when the UE performs logical channel selection in a resource pool configured with PSFCH, the logical channels are selected according to the value of sl-HARQ-FeedbackEnabled of the highest priority logical channel.

|  |
| --- |
| 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  3> if PSFCH is configured for the sidelink grant associated to the SCI:  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. |

For Rel-17 SL Power Saving, a new UE type (i.e., Type A UE) which is not capable of PSFCH and S-SSB reception has been specified, and the PSFCH reception capability is introduced as FG 32-2, see in R1-2202928. However, according to the current specification, PSFCH reception capability is not cosidered. In other words, a Type A UE may select logcial channels with sl-HARQ-FeedbackEnabled being set to enabled, and transmit the multiplexed TB with HARQ feedback enabled indicator in SCI, but cannot actually receive the HARQ feedback because of its capability. This may decrese the reliablity of data in the HARQ-enabled logcial channels or make the TX UE fail to perform necessary retransmissions.

Therefore, the impact of UE capability with or w/o PSFCH reception should be captured.

**Change**: In 5.22.1.4.1.2, the LCH selectionconsidering not only the PSFCH resource configuration, but also the UE capability of PSFCH reception.

**5.22.1.4.1.2 Selection of logical channels**

(omit)

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

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.

**Q34: Would you company agree 2nd change proposed in R2-2208599?**

|  |  |  |
| --- | --- | --- |
| Company | Agree/Disagree | Further comments |
| LG | Agree |  |
| Apple | Agree |  |
| xiaomi | Agree |  |
| OPPO | Disagree | We fail to understand the proposed issue why “a Type A UE may select logcial channels with sl-HARQ-FeedbackEnabled being set to enabled, and transmit the multiplexed TB with HARQ feedback enabled indicator in SCI”? since it doesn’t have the ability to receive PSFCH, i.e., it will not generate SL-SCH data W/ HARQ feedback. |
| Nokia | Disagree | Agree with OPPO |
| NEC | Agree |  |
| vivo | Agree | Proponent.  To OPPO’s question, yes the UE without PSFCH reception capability should not general a TB with HARQ attributes set to enabled, but current specification allows UE to do that because only PSFCH resource configuration but no UE capability is considered in the spec. That is why we suggest this change. |
| Lenovo | Agree |  |
| Qualcomm | Agree |  |

**[Summary]**

## Conclusion