3GPP TSG-RAN WG2 #112e R2-20xxxxx

Electronic meeting, November 2nd – 13th 2020

Agenda Item: 6.4.2

Source: Ericsson

Title: Summary of [AT112-e][708][V2X] SL related RRC procedure

Document for: Discussion, Decision

# 1 Introduction

This document is to kick off the following email discussion:

* [AT112-e][708][V2X] SL related RRC procedure (Ericsson)

Discuss CRs (including need of changes) in the above list (in Recommendation2) and prepare the agreeable CR in R2-2010937 (discussion summary in R2-2010936 if needed). CR will be agreed by email. Deadline is 12:00pm 11/12/2020 (UTC).

**Deadline Phase 1:** Collect companies’ views and formulate proposals, by Friday November 6th 12:00 UTC

**Deadline Phase 2:** Further review proposals and related CRs, by Thursday November 12nd 1200 UTC

# 2 Contact Information

|  |  |
| --- | --- |
| Company (Name) | Email |
| Ericsson (Tony) | antonino.orsino@ericsson.com |
| OPPO (Qianxi) | qianxi.lu@oppo.com |
| CATT (Da) | wangda@catt.cn |
| Huawei (Xiao) | [xiaoxiao6@huawei.com](mailto:xiaoxiao6@huawei.com) |
| Samsung (Hyunjeong) | hyunjeong.kang@samsung.com |
| Apple (Zhibin Wu) | [zhibin\_wu@apple.com](mailto:zhibin_wu@apple.com) |
| MediaTek (Nathan) | nathan.tenny@mediatek.com |
| Intel (Ansab) | [ansab.ali@intel.com](mailto:ansab.ali@intel.com) |
| Qualcomm (Dan) | dvassilo@qti.qualcomm.com |
| vivo(Boubacar) | kimba@vivo.com |

# 3 Discussion

## 3.1 SDAP entity reconfiguration

R2-2009406 Correction on SDAP related procedures and configurations in TS 38.331 Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2070 - F 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | Yes |  |
| Ericsson | No | We are not sure the change is correct. The proposed change said that the SDPA entity should be *(re)configured*, but the section in which is added is that one fort he sidelink DRB *addition.*  This sounds a bit strange. If the SDAP entity already exist, shouldn’t the reconfiguration oft he SDAP entity part of the sidelink DRB modification? |
| Interdigital | Yes |  |
| CATT | Yes |  |
| Huawei | Yes | Without this change, the SDAP entity cannot be reconfigured when the mapping of PC5 QoS flow to SLRB changes. |
| Samsung | Yes |  |
| LG | Yes |  |
| ZTE | Yes with comment | Agree on the intention of adding the missing SDAP entity reconfiguration procedure. For editorial changes, 1) “Among all configured instances of *SL-SDAP-Config* with per destination”, the “with ” can be removed; 2) “Indicates the list of QoS profile of the NR sidelink communication...”, the “SL” before QoS profile can be kept. |
| Apple | Yes |  |
| MediaTek | Yes |  |
| Intel | Yes |  |
| Qualcomm | No with comment | We agree with the intent of the CR, but share the views expressed by Ericsson that this correction should be applied to the section of sidelink DRB modification. |
| vivo | Yes |  |

## 3.2 SL related reset operation

R2-2009713 Correction on sidelink reset configuration Ericsson CR Rel-16 38.331 16.2.0 2118 - F 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | See comment | Intention agreeable, suggest rewording as follows:    Since SRB of specified configuration does not need to be mentioned at all, and it is a bit contradictory to say the configuration in *RRCRecofnigurationSidelink* is included but later say DRB configuration is not included.  And we wonder what is the reason for the „*may*“ here, can it be removed? |
| Ericsson | Yes with comment | We are fine with OPPO suggestion. The reason of why there is “may” here is because some radio configuration are optional and thus some of them may not be present. This is also the same formulation that we have for Uu. |
| Interdigital | Yes | Ok with the suggested rewording. However, we think may can be kept. |
| CATT | Yes with comment | We are also fine with OPPO suggestion wording. We also think “may” is correct. |
| Huawei | Yes | No strong view. Since it is to change informative texts, we can follow majority’s view whether to make it clearer. |
| Samsung | Yes with comment | We are fine with OPPO’s rewording. |
| LG | Yes | Ok with OPPO’s suggested text. |
| ZTE | No | NOTE: Sidelink radio configuration is not just the resource configuration but may include other configurations included in the *RRCReconfigurationSidelink* message. The radio configuration does not include the sidelink SRBs and DRBs of this destination.  We have concerns about the above NOTE,   1. What does the “resource configuration” and “other configurations” refer to? Actually, there is no resource configuration in *RRCReconfigurationSidelink*.   In addition, there is no SL SRBs configuration in *RRCReconfigurationSidelink*, so it is not necessary to emphasize “the radio configuration does not include the sidelink SRBs”. |
| Apple | Yes | OK with the latest change with rewording. We are fine with “may” to be present in this NOTE. |
| MediaTek | Yes | OK with OPPO’s rewording. We think “may” is a little confusing but can accept if most companies prefer to keep it. |
| Intel | Yes | We do not have a strong view on the need for the note, but share the view from ZTE that it is not necessary to include the mention of “sidelink SRB” |
| Qualcomm | Yes with comment | We agree with the view expressed by other companies that the “may” should be retained. |
| vivo | See comment | OK with OPPO’s re-wording suggestion.  Further, but it may still be confusing what the “resource configuration” and “other configurations” as ZTE’s concern. We further suggest to add some wording clarifications as highlighted in yellow.. |

R2-2010302 Correction on trigger of SL specific MAC reset in TS 38.331 Huawei, Hisilicon CR Rel-16 38.331 16.2.0 2205 - F 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | Yes with comment | Intention agreeable, i.e., the processing for **connection release requested by upper layers** is missing.  On the other hand, this CR put the steps into the section of „SRB release“, which is not very decent – one alternative is similar to section 5.8.9.3 handling RLF case, to have a separate section for the parrellel case, i.e., **connection release requested by upper layers.** |

|  |  |  |
| --- | --- | --- |
| LG | Yes |  |

|  |  |  |
| --- | --- | --- |
| Ericsson | Yes with comment | Agree with OPPO. |
| Interdigital | Yes |  |
| CATT | Yes | Agree with OPPO. |
| Huawei | Yes | This is to add a missing case for SL MAC reset, as agreed before. |
| Samsung | Yes |  |
| ZTE | Yes with comments | Agree on the intention of adding the missing case (PC5-RRC connection is released due to a request from upper layer) triggering SL MAC reset. But the proposed change seems a little redundant with the description in section 5.8.9.3, maybe an unified description on triggering SL specific MAC reset for detecting SL RLF and PC5-RRC connection released requested by upper layers can be considered. |
| Apple |  | Agree with the intention, but the text need to be merged with section 5.8.9.3. |
| Intel | Yes |  |
| Qualcomm | Yes with comment | Share the view expressed by others that this change should be in 5.8.9.3 |
| vivo | Yes |  |

## 3.3 Operations related to SL-RSRP configuration

R2-2009520 Correction on Stored Sidelink Measurement Configuration Apple, Ericsson CR Rel-16 38.331 16.2.0 2085 - F 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | See comment | Change-2 is OK for us.  For change-1, although we understand the intention, yet the initiation condition for as-configuration is missing in the whole spec, not just for measurement, because we rely on the section 5.8.9.1.1 for that    There is no need to go into details, so we do not think change- 1 is needed. |

|  |  |  |
| --- | --- | --- |
| LG | Yes |  |
| MediaTek | Yes with comment | Agree with OPPO: This is not really part of SRB release, and it would be good to have a section for „connection release requested by upper layers“. |

|  |  |  |
| --- | --- | --- |
| Ericsson | Yes |  |
| Interdigital | Yes |  |
| CATT | Yes |  |
| Huawei | See comments | For Change 1, i.e. adding one more trigger for *RRCRecofnigurationSidelink*, we, as pointed out in the summary, would like to add it into 5.8.9.1.1, instead of 5.2.2.4.13 as currently proposed by the CR. The reason is that **the triggers of *RRCReconfigurationSidelink* are now all specified and gathered in subclause 5.8.9.1.1**, and this framework should not be broken. Otherwise, we may start to distribute the triggers everywhere in the Spec. A very simple change, if made in 5.8.9.1.1, is as follows:  *- the (re)configuration of the peer UE to perform NR sidelink measurement and report.*  For the need of Change 2, we have no strong view and are fine to follow majority’s view. However, if companies want to change, the current change in the CR is not accurate, because for NR SL communication procedures in TS 38.331, we don’t use “Out-of-coverage” as the RRC state that allows the UE to use preconfiguration. Reason is that the preconfiguration usage is not limited to out of coverage case (i.e. no NR coverage on Uu), but also applies to the case that the UE has NW coverage in Uu but cannot get RAN-provided SL configurations for the SL carrier — This is how the current SL procedures (e.g. NR SL communication reception/transmission, CBR configurations, etc.) work, and should be followed. |
| Samsung | See comment | The second change is fine.  Regarding 1st change, we have similar view with OPPO and HW and the change is not needed. |
| ZTE | No | For change 1), we tend to agree with the Proposal 4-3 proposed by rapp in R2-2010986.  It is obviously that in coverage UE obtains sidelink measurement configuration from SIB12 or dedicated RRC signalling and stores it while OoC UE obtains it from pre-configuration, the change 2) is not so necessary. |
| Apple | Yes | For change 1), we are fine with the rapporteur suggestion to make a simpler change in 5.8.9.1.1. |
| MediaTek | See comment | Agree with Huawei that change 1 could go in 5.8.9.1.1.  On change 2, we understand Huawei’s point and it seems somewhat difficult to come up with a simple change that reflects the whole situation accurately. But we tend to think the problem is real (the UE that moves out of coverage or otherwise loses access to a RAN-provided configuration is not currently guided to switch over to preconfiguration, and the configuration from SIB12 is not accurately described as being “for this destination”), and maybe some more discussion is needed to converge on a good solution. |
| Intel | See comment | For the first change, we also share the view with OPPO and Huawei that it is not necessary to support. We are fine with the second change. |
| Qualcomm | No | For change 1) we are fine with the rapporteur suggestion. We don’t see change 2) as necessary |
| vivo | See comment | Agree with Huawei. |

## 3.5 SL synchronization related

R2-2008942 Discussion on synchronization procedure under in-device coexistence operation LG Electronics France discussion Rel-16 38.331 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | See reply to the following question |  |
| Ericsson | No | We prefer the solution in [R2-2010442](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_112-e/Docs/R2-2010442.zip) |
| Interdigital | No | Also prefer a note |
| CATT | No for Opt 1‎ | For Opt 2, i.e., to add a NOTE, we slight prefer the NOTE added in [R2-2010442](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_112-e/Docs/R2-2010442.zip). |
| Huawei | No | No normative texts are needed as what we analyzed in our paper below, R2-2010442, because the issue is already handled in RAN1 Spec. |
| LG | Yes | We believe a clarification is needed to avoid a possible ambiguity in understanding the operations specified in 38.213 and 38.331 spec, under in-device coexistence. Otherwise, some vendors may make UE to transmit/receive subframe boundary aligned signals while others may not, which causes an inter-vendor interoperability issue for IDC operation.  Based on discussions with some companies, if most of companies have common understanding that the normative text in 38.331 does not need to be changed, we agree to add a NOTE in Section 5.8.6.2 of TS 38.331 as follows.  ***NOTE: When NR SL and LTE SL are time-division multiplexed and UE knows the frame indexes for the two SL RAT, the UE transmits and receives with subframe boundary alignment between NR/LTE SL under in-device coexistence operation, as specified in Section 16.7 of TS 38.213.*** |
| Samsung | No | Prefer R2-2010442 |
| ZTE | See comment | We prefer Opt 2, i.e. Add a NOTE for clarification in Section 5.8.6.2 of TS 38.331. |
| Apple | No | Prefer R2-2010442 |
| MediaTek | No | Prefer R2-2010442 |
| Intel | No | We prefer to either do nothing or add a note as per R2-2010442 |
| Qualcomm | See comment | We do not see a need to change the normative text, but are fine with the note suggested in Opt 2 of R2-2008942 |
| vivo | No | Prefer to add some clarification with a NOTE. |

R2-2010442 On synchronization alignment between V2X SL and NR SL in the in-device coexistence environment Huawei, HiSilicon discussion

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | Yes |  |
| Ericsson | Yes |  |
| Interdigital | Yes |  |
| CATT | Yes |  |
| Huawei | Yes, with comment | Our first preference is to do nothing. If companies want some forms of clarification, a NOTE referencing TS 38.213 is more than enough. |
| LG | Yes | Similar to LGE response to R2-2008942 above, we believe a clarification is needed to avoid a possible ambiguity in understanding the operations specified in 38.213 and 38.331 spec, under in-device coexistence. As a result, we support adding a note in TS38.331.  Regarding the NOTE that was proposed in R2-2010442, we suggest to use the same terminology as in TS38.213 as follows:  NOTE X: How the UE achieves subframe boundary alignment between V2X sidelink communication and NR sidelink communication under in-device coexistence ~~(if both are performed by the UE)~~ is as specified in TS 38.213, subcases 16.7.  We’re ok with either this NOTE or the one suggested in the response to R2-2008942 above. |
| Samsung | Yes |  |
| ZTE | Yes | Agree to not introduce normative functional change on the current synchronization procedures, instead, a “NOTE” referring to TS 38.213 can be added. |
| Apple | Yes |  |
| MediaTek | Yes | We see some clarification value in the NOTE. |
| Intel | Yes |  |
| Qualcomm | Yes | We support not introducing additional normative functional changes, but are fine to add a clarifying note. Either the note in R2-2008942 or the note in R2-2010442 are satisfactory. |
| vivo | Yes | We think LG’s re-wording is fine. It is inline with the title in TS 38.213. 16.7 Operation for in-device coexistence Further, minor correction to change the word “ subcases” into “subclause”. |

## 3.6 SL CG handling during the RLF case

R2-2010060 Correction on SL configured grant type 1 validity under RLF Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.2.0 2171 - F 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | No | The related text in 331 is to allow the usage of exceptional pool when there is no configured grant provided.  For the case when both exceptional pool and configured grant are provided during T310, the following note in MAC spec can solve the issue, i.e., relying on CG resource.  *NOTE 1: If the MAC entity is configured with Sidelink resource allocation mode 2 to transmit using a pool of resources in a carrier as indicated in TS 38.331 [5] or TS 36.331 [21], the MAC entity can create a selected sidelink grant on the pool of resources based on random selection or sensing only after releasing configured sidelink grant(s), if any.* |

|  |  |  |
| --- | --- | --- |
| LG | Yes | The proposal text describes the RAN2 agreement even more clearly. Although the MAC specification explains that selected sidelink grant can be created after releasing configured sidelink grant, it is necessary to have more clear text in the RRC specification that the exceptional pool can be used when the T310 timer expires if the configured sidelink grant is configured. |

|  |  |  |
| --- | --- | --- |
| Ericsson | Yes | We think the clarification makes sense and it is, indeed, needed in RRC. We support this. |
| Interdigital | No | The change results in unitended behavior when CG is not configured. We think this agreement should be handled in the MAC (and the note mentioned by OPPO seems sufficient). |
| CATT | Yes | We prefer to have such clarification in RRC spec and the proposal text in this CR makes sense. |
| Huawei | No | Share OPPO’s view, basically. The enhancement of resuming the SL CG usage had actually been discussed quite a lot during previous meetings, and finally it was agreed that the prohibition of using exceptional pool, before the SL CG is released, is specified in the MAC, with the below note in TS 38.321.  *NOTE 1: If the MAC entity is configured with Sidelink resource allocation mode 2 to transmit using a pool of resources in a carrier as indicated in TS 38.331 [5] or TS 36.331 [21], the MAC entity can create a selected sidelink grant on the pool of resources based on random selection or sensing only after releasing configured sidelink grant(s), if any.*  This note means that when SL CG type 1 is configured, then even if an exceptional pool is configured, it cannot be used until the SL CG type 1 is released at the moment when T311 starts as specified in TS 38.331. Therefore, the previous RAN2 agreements referenced by the above CR is already realized by the current Spec. |
| Samsung | No | Agree with OPPO |
| ZTE | No | For the agreement “Configured SL grant type 1 will be used while T310 is running.”, it is specified in MAC spec with below NOTE in TS 38.321:  *NOTE 1: If the MAC entity is configured with Sidelink resource allocation mode 2 to transmit using a pool of resources in a carrier as indicated in TS 38.331 [5] or TS 36.331 [21], the MAC entity can create a selected sidelink grant on the pool of resources based on random selection or sensing only after releasing configured sidelink grant(s), if any.*  With regard to the change of adding additional descriptions to explicitly say that the exceptional pool can only be used after the T310 of the MCG expires (and thus T311 starts), it is covered by “T311 is running”. |
| Apple | NO | Agree with the rapporteur |
| MediaTek | No | Agree with OPPO and Huawei. |
| Intel | No | As per Huawei’s comment, we believe that the current specification already covers the scenario of allowing usage of exceptional pool, so no need for further change. |
| Qualcomm | Yes | We agree that the proposed text clarifies the RAN2#108 agreement |
| vivo | NO | We also think the CR intention has already been captured by a NOTE in TS 38.321. |

## 3.7 Correction related to SL RLF procedure

R2-2009711 Correction on setting of sl-FailureList in SidelinkUEInformation Ericsson CR Rel-16 38.331 16.2.0 2116 - F 5G\_V2X\_NRSL-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree (Y/N)? | Comments |
| OPPO | Yes |  |

|  |  |  |
| --- | --- | --- |
| LG | Yes |  |

|  |  |  |
| --- | --- | --- |
| Ericsson | Yes |  |
| Interdigital | Yes |  |
| CATT | Yes |  |
| Huawei | Yes, with comments | We share the intention. The specific change can be further reviewed during the CR reiewing phase. |
| Samsung | Yes |  |
| ZTE | No | We see the change is not necessary. It is clearly in the current spec that if sidelink RLF or sidelink reconfiguration failure is declared, the sl-failure related fields are set, in another word, if no SL RLF or reconfiguration failure is happened, the sl-failure related fields will not be set and included. |
| Apple | Yes with comments | Agree with the intention, but the change in the CR is not OK. The first 2-level bullet has already included the RLF case, so it is not appropriate to add a new level-2 bullet dedicated for RLF case. The proposed if conditions and related changes shall remain as a new level-4 bullet in clause 5.8.3.3. |
| MediaTek | Yes with comment | To ZTE’s comment, the current logic always requires the UE to “include sl-FailureList” and set the list entries “for each destination for which it reports the NR sidelink communication failure”. So we understand that if the message is sent when no failure is detected, the UE will send an empty sl-FailureList. With the CR, it will not include the sl-FailureList at all.  We also agree with Apple that this should not be a level 2 bullet. We tend to think a layer 3 bullet (parallel to “if configured to receive NR SL communication” and “if configured to transmit NR SL communication”) would be the right place, but this can be fine-tuned in CR drafting. |
| Intel | Yes | We think it is good to clarify the clauses for sidelink radio link failure or sidelink RRC reconfiguration failure case. |
| Qualcomm | No | We don’t see this change as necessary, but rather an optimization to avoid sending an empty field. |
| vivo | Yes |  |

# 4 Conclusion

According to the previous sections the following proposals are made: