**3GPP TSG-RAN WG2 Meeting #115 electronic R2-2108987**

**Online, 9th – 27th August 2021**

Agenda item: 6.2.2

**Source: Huawei, HiSilicon**

**Title: Summary [AT115-e][705][V2X/SL] Miscellaneous CRs on RRC (Huawei)**

**Document for: Discussion and Decision**

# Introduction

This document is the summary of below offline discussion:

* [AT115-e][705][V2X/SL] Miscellaneous CRs on RRC (Huawei)

 **Scope:** Discuss CRs in R2-2107166, R2-2107167, R2-2107437, R2-2108178, and R2-2108219 in an offline discussion, and if agreeable merge them into rapporteur’s miscellaneous CRs.

 **Intended outcome:** Agreeable 38.331 CR in R2-2108985 and 36.331 CR in R2-2108986, and discussion summary in R2-2108987 if needed. Agreeable 38.323 CR in R2-2108988 if PDCP correction is needed. Will be approved by email.

 **Deadline:** 8/24 13:00pm UTC

# Correction CRs to be discussed for TS 38.331

### On changes proposed in Rapporteur CR R2-2107166

* + 1. First change

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| **Summary of changes**  | **Reason for changes** |
| Change IE *sl-ConfigDedicatedNR* to *sl-ConfigDedicatedForNR* in clauses 5.3.1.1, 5.5.3, and 5.8.1. | The IE *sl-ConfigDedicatedNR* in NR *RRCReconfiguration* message in TS 38.331 provides the dedicated configurations for NR sidelink communication. In E-UTRA system, the configurations for NR sidelink communication contained in *sl-ConfigDedicatedNR* are embedded in the IE *sl-ConfigDedicatedForNR* of *RRCConnectionReconfiguration* message, as an octet string. In clauses 5.3.1.1, 5.5.3, and 5.8.1 of the current specification, it should be IE *sl-ConfigDedicatedForNR* whitin the *RRCConnectionReconfiguration* message as specified in TS 36.331. |

**Q1: Would your company disagree with the above proposed change?**

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|  Company | Comments |
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* + 1. Second change

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| **Summary of changes**  | **Reason for changes** |
| In clause 5.8.2, modify the UE RRC state in the conditions for NR sidelink communication operation in limited service state. | According to TS 38.304 clause 4.3, a UE that is provided with so called “limited service” is in RRC\_IDLE state. In clause 4.5, it is pointed out that if the UE in RRC\_IDLE fulfils the conditions to support NR sidelink communication or V2X sidelink communication in limited service state as specified in TS 23.287 clause 5.7, the UE may perform NR sidelink communication or V2X sidelink communication. Therefore, in clasue 5.8.2 of current specification, for the conditions to support NR sidelink communication operation in limited service state, the UE shall only be in RRC\_IDLE state. |

**Q2: Would your company disagree with the above proposed change?**

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|  Company | Comments |
| OPPO | After checking with our SA2/CT1 colleague, when UE in limited service, at least it can perform emergency call, which could be in RRC\_CONNECTED state, so we do not see the need of the proposed change. |
| vivo | Agree with the above proposed change.According to SA2 specification TS 23.287 cited as blow, it seems the limited service state is only applicable to CM\_IDLE(i..e, RRC\_IDLE).5.7 Support for V2X communication for UEs in limited service stateA UE in limited service state shall only use the radio resources and procedure available in CM-IDLE mode for V2X communication over PC5 reference point, for details see TS 36.300 [9] and TS 38.300 [11]. |
| Qualcomm | We do not see the need for the proposed change |
| Rapp | According to TS 38.304, clause 4.3, clause 4.4, the “limited service” is provided while a UE is in RRC\_IDLE state, where the so called “limited service” includes emergency calls, ETWS and CMAS on an acceptable cell. This means in RRC\_IDLE state, the UE can make emergency calls, unlike what is commented by OPPO. According to both 38.306 and 23.287, as pointed by vivo, it can be seen that this “limited service state” is used as specific term instead of one general term and refers to state RRC\_IDLE. Apparently “or RRC\_CONNECTED” was erroneously placed within the parentheses after “if UE’s serving cell”, and shall be removed, since it would be misleading and incorrect from technical perspective. |
| Ericsson | We also don’t see the need to have this change. A UE in “limited service” is not equal to say that a UE is in RRC\_IDLE. In fact, when the UE is in limited service it can only originate emergency calls and receive ETWS notifications (nothing else). |
| Apple | No. The change is not needed. |
| Rapp2 | Rapp is not convinced by the reasoning that the change is not needed. It is apparently error case which need to be correct. Recommend to discuss further.  |

**Proposal 1: RAN2 to discuss whether remove “or RRC\_CONNECTED” from conditions for NR sidelink communication operation in limited service state in clause 5.8.2 in TS 38.331.**

* + 1. Third change

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| **Summary of changes**  | **Reason for changes** |
| Change “NR sidelink communication transmission’ to ‘NR sidelink communication reception” in clause 5.8.7. | Clause 5.8.7 describes the actions when a UE capable of NR sidelink communication that is configured by upper layers to receive NR sidelink communication. Thus, in this clause, the chosen cell is for NR sidelink communication reception, not for NR sidelink communication transmission. |

**Q3: Would your company disagree with the above proposed change?**

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|  Company | Comments |
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* + 1. Fourth change

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| **Summary of changes**  | **Reason for changes** |
| Modify the description of sidelink DRB release condition in clause 5.8.9.1a.1.1. | As clause 5.8.9.3 describes, when sidelink radio link failure is detected, the UE shall release the DRBs, SRBs of the related destination then indicate the release of the PC5-RRC connection to the upper layers. It means that a sidelink DRB release can be initiated when sidelink radio link failure is detected. Therefore, in description of the sidelink DRB release in current specification clause 5.8.9.1a.1.1, the condition “when the corresponding PC5-RRC connection is released due to sidelink RLF being detected, according to clause 5.8.9.3” is not clear and shall be “when the sidelink radio link failure is detected, according to clause 5.8.9.3”. This description is also consistent with the description of SRB release due to sidelink radio link failure in clause 5.8.9.1a.3.  |

**Q4: Would your company disagree with the above proposed change?**

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|  Company | Comments |
| ZTE | In R16, we agree that there is only one event that will cause PC5 RRC connection to be released. We think it is not suitable to remove “corresponding PC5-RRC connection is released due to ” from the original description. Since the reason why DRB is released is corresponding RRC connection is release, not just radio link failure is detected. |
| OPPO | Logically speaking, RLF will directly trigger PC5-RRC connection release. Then the PC5-RRC connection release will trigger SL-DRB release. We do not see a problem in the original wording so not see the need of this change. |
| vivo | Disagree with the above proposed change.We think current specification is correct. It is also in line with the subsequent bullet by the description with “the corresponding PC5-RRC connection is released”.  |
| Nokia | We share Oppo’s view and do not see a need to change the current wording. |
| Lenovo | In current spec for SL-RLF (5.8.9.3), the PC5-RRC connection is considered released only after SL-DRB/SRB is released, together with discard related radio configuration and reset MAC. And SL-DRB release is after SL-RLF detected. So we think the above correction is ok |
| Qualcomm  | Agree with the above comments noting the proposed change is not necessary.  |
| Rapp | As we cannot converge on the need of this change, it is not agreed.  |
| Ericsson | We agree with the other companies that this change is not needed. |
| Apple | Change is not needed. |
| Samsung | We agree with the companies view above that no need to change the current wording. |

**Proposal 2: Change of “Modify the description of sidelink DRB release condition in clause 5.8.9.1a.1.1.” in TS 38.331 is not agreed.**

* + 1. Editorial changes

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| **Summary of changes**  | **Reason for changes** |
| Fix the editorial errors. | Some editorial errors still exist  |

**Q5: Would your company disagree with any of the proposed editorial changes?**

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|  Company | Comments |
| OPPO | We see quite a lot of change from ‘and’ to ‘or’, just it seems cosmetic since it is also ‘and’ used in LTE spec without ambiguity, so do not see the need to do this kind of change. |
| vivo | No strong view, fine with all the editorial changes. |
| Rapp | Rapp would insist on correcting those editorial errors. For the example provided by OPPO, these messages are understood as mutually exclusive, so “or” is more suitable. One more editorial error will be corrected, which is pointed out by Nokia, in clause 6.3.5, the double “configure configure” error.  |
| Ericsson | In general we are fine with these editorial changes, but good to be careful to change “and” with “or” and vice versa, as the meaning can be completely different. |

**Proposal 3: All editorial changes for TS 38.331, except “and/or” changes, are agreed.**

### On changes proposed in R2-2107437 and R2-2108178

Changes proposed are based on the same RAN1 LS [1] and the diffidence is on the way of implementation, one is “only specify value 1” and another is “specify both value 1 and value 0”. Companies can choose among options and can provide further comments on the wording.

* Option 1: The wording in R2-2107437: “Value 1 indicates the corresponding RB is used for PSFCH transmission and reception.”
* Option 2: The wording in R2-2108178: “Value 0 in the bitmap indicates that the corresponding PRB is not used for PSFCH transmission and reception while value 1 indicates that the corresponding PRB is used for PSFCH transmission and reception (see TS 38.213 [13]).”
* Option 3: Not to support both CRs

**Q6: Which option your company support?**

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|  Company | Option | Comments |
| Huawei, HiSilicon | 2 | We prefer this implementation for its completeness of the description. Also we think it shall be “corresponding PRB”, not “corresponding RB”.  |
| ZTE | 1 | Generally specking, in IE description, when we describes one bit is used to enable or indicate something, we only capture “value 1” or “value 0”. Since the behaviour of opposite value can be derived from the captured value, we do not need to capture both of them explicitly.To echo Huawei’s comments: Yes, we agree it should be “PRB”, not “RB”. We think rapporteur can apply the modification if option1 is adopted. |
| OPPO | 2 | It is clearer |
| CATT | 2 | Proponent. |
| vivo | 1 | Compared with Option 1, the wording in Option 2 is a bit redundant. Since the value “0” and “1” are the logical variables, describing one of them is enough. This is also consistent ASN.1 style with other filed description, Take the UAC filed description as an example as below.***uac-BarringForAccessIdentity***Indicates whether access attempt is allowed for each Access Identity. The leftmost bit, bit 0 in the bit string corresponds to Access Identity 1, bit 1 in the bit string corresponds to Access Identity 2, bit 2 in the bit string corresponds to Access Identity 11, bit 3 in the bit string corresponds to Access Identity 12, bit 4 in the bit string corresponds to Access Identity 13, bit 5 in the bit string corresponds to Access Identity 14, and bit 6 in the bit string corresponds to Access Identity 15. Value 0 means that access attempt is allowed for the corresponding access identity.[Comments to vivo from CATT]Thanks for your example firstly. But your description is one side directed and misleading. Take below two field descriptions as examples:1, ***ssb-ToMeasure***The set of SS blocks to be measured within the SMTC measurement duration. The first/leftmost bit corresponds to SS block index 0, the second bit corresponds to SS block index 1, and so on. Value 0 in the bitmap indicates that the corresponding SS block is not to be measured while value 1 indicates that the corresponding SS block is to be measured (see TS 38.215 [9]). When the field is not configured the IAB-MT measures on all SS blocks. Regardless of the value of this field, SS blocks outside of the applicable smtc are not to be measured. See TS 38.215 [9] clause 5.1.1.2, inOneGroupWhen maximum number of SS/PBCH blocks per half frame equals to 4 as defined in TS 38.213 [13], clause 4.1, only the 4 leftmost bits are valid; the UE ignores the 4 rightmost bits. When maximum number of SS/PBCH blocks per half frame equals to 8 as defined in TS 38.213 [13], clause 4.1, all 8 bits are valid. The first/ leftmost bit corresponds to SS/PBCH block index 0, the second bit corresponds to SS/PBCH block index 1, and so on. When maximum number of SS/PBCH blocks per half frame equals to 64 as defined in TS 38.213 [13], clause 4.1, all 8 bit are valid; The first/ leftmost bit corresponds to the first SS/PBCH block index in the group (i.e., to SSB index 0, 8, and so on); the second bit corresponds to the second SS/PBCH block index in the group (i.e., to SSB index 1, 9, and so on), and so on. Value 0 in the bitmap indicates that the corresponding SS/PBCH block is not transmitted while value 1 indicates that the corresponding SS/PBCH block is transmitted. |
| Nokia | 2 |  |
| Lenovo | 2 | Option 2 is clearer |
| Qualcomm | 2 | Prefer the wording in R2-2108178 |
| Rapp |  | Thanks for the discussion, it is clear “one value” implementation and “two values” implementation are both acceptable. Rapp would choose 2 based on simple majority.  |
| Ericsson | 2 |  |
| Apple | 2 |  |
| Samsung | 2 | This option looks clearer. |

**Proposal 4: CR in R2-2108178 is agreed. CR in R2-2107437 not agreed.**

### On change proposed in R2-2108219

The intention of the change was considered as agreeable and the main concern was on the wording in the last meeting. We can discuss on this revised wording and on whether it shall be RRC CR or PDCP CR.

“NOTEX: When integrity check failure concerning SL-SRB1 for a specific destination is detected, the UE sends an indication to the upper layers [57].”

* Option 1, agreed as RRC CR
* Option 2, agreed as PDCP CR
* Option 3, not to agree the change

**Q7: Which option your company support?**

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|  Company | Option | Comments |
| Huawei, HiSilicon | 1 | There are many similar description related to “integrity check failure” in RRC spec, e.g. in clause 5.3.7.2, 5.3.13.3, 5.3.13.5, 5.7.3.2, 5.7.3.3, especially in clause 5.8.9.3. We think this NOTE should be included in RRC spec. |
| ZTE | 1 |  |
| OPPO | 1 | In PDCP spec, there is already the text that “- if integrity verification fails:- indicate the integrity verification failure to upper layer;”, so means that all IP check failure would be reported to RRC first, and then it is up to RRC to do the subsequent operation. |
| CATT | 1 | Same view as OPPO. |
| vivo | 1 | Clarification in RRC CR is the last meeting agreement. |
| Nokia | 1 |  |
| Lenovo | 1 |  |
| Qualcomm | 1 |  |
| Rapp |  | Change in R2-2108219 will be merged in Rapp’s Misc RRC CR for 38.331.  |
| Ericsson | 1 | However, we respectfully disagree with the proposal from Rapporteur to merge this in the Rapporteur CR. The CR can be agreed as it is without the need to merge it with any other CR. |
| Apple | 1 |  |
| Samsung | 1 |  |

**Proposal 5: CR in R2-2108219 is agreed as RRC CR.**

## On Rapporteur’s miscellaneous CR R2-2107167 for TS 36.331

* 1. First change

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| **Summary of changes**  | **Reason for changes** |
| Change *SIB19* to *SystemInformationBlockTypex19, SIB21* to *SystemInformationBlockTypex21, SIB26* to *SystemInformationBlockTypex26, SIB28* to *SystemInformationBlockTypex28* in clauses 5.2.2.36, 6.2.2 and 6.3.1. | The system information block element broadcasted by the E-UTRAN is written in the form of ‘*SystemInformationBlockTypex’, where x is the number ranging from 1 to 29.* ‘*SIBx*’ with x ranging from 1 to 14 is dedicated to the system information block element in NR system. Therefore, *SIB19, SIB21, SIB26, SIB28* in clauses 5.2.2.36, 6.2.2 and 6.3.1 should be changed to *SystemInformationBlockTypex19, SystemInformationBlockTypex21, SystemInformationBlockTypex26, SystemInformationBlockTypex28*, respectively. |

**Q8: Would your company disagree with the above proposed change?**

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|  Company | Comments |
| OPPO | This change also logically touches the legacy spec although the proposed CR is only for R16, does it really needed? |
| Lenovo | We are not so sure whether the change is needed, since in the definition of *SystemInformation message in 36.331*, there also has the term of sib19, sib21 etc. On the other hand, we are wondering if it is a typo “x”: *SystemInformationBlockTypex19, SystemInformationBlockTypex21, SystemInformationBlockTypex26, SystemInformationBlockTypex28* |
| Rapp | Rapp assume that we can live with long name SystemInformationBlockTypex and short name SIBx used at the same time. It is not critical to correct. Everyone understand them both. No ambiguity issues or technical issues. Not to agree this change.  |

**Proposal 6: Change on SIBx to *SystemInformationBlockTypex* in TS 36.331 is postponed.**

* 1. Second change

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| **Summary of changes**  | **Reason for changes** |
| Change *sl-ConfigDedicatedNR* to *sl-ConfigDedicatedForNR* in clause 5.5.3. | The IE *sl-ConfigDedicatedForNR* in *RRCConnectionReconfiguration* message is a container for providing the dedicated configurations for NR sidelink communication. The octet string contains the NR *RRCReconfiguration* message as specified in TS 38.331, which includes fields related to NR sidelink communication, i.e. *sl-ConfigDedicatedNR*, *measConfig* and/or *otherConfig*. The IE *sl-ConfigDedicatedNR* in NR *RRCReconfiguration* message in TS 38.331 provides the dedicated configurations for NR sidelink communication. Obviously, IEs *sl-ConfigDedicatedForNR* and *sl-ConfigDedicatedNR* are funcitionally different. However, *sl-ConfigDedicatedNR* is misused in clause 5.5.3 of the current specification. |

**Q9: Would your company disagree with the above proposed change?**

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|  Company | Comments |
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* 1. Editorial changes

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| **Summary of changes**  | **Reason for changes** |
| Fix the editorial errors. | Some editorial errors still exit. |

**Q10: Would your company disagree with the any of the proposed editorial changes?**

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|  Company | Comments |
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**Proposal 7: All other changes (i.e., no comments received) for TS 38.331 and TS 36.331 are agreed.**

# Conclusions

**Proposal 1: RAN2 to discuss whether remove “or RRC\_CONNECTED” from conditions for NR sidelink communication operation in limited service state in clause 5.8.2 in TS 38.331.**

**Proposal 2: Change of “Modify the description of sidelink DRB release condition in clause 5.8.9.1a.1.1.” in TS 38.331 is not agreed.**

**Proposal 3: All editorial changes for TS 38.331, except “and/or” changes, are agreed.**

**Proposal 4: CR in R2-2108178 is agreed. CR in R2-2107437 not agreed.**

**Proposal 5: CR in R2-2108219 is agreed as RRC CR.**

**Proposal 6: Change on SIBx to *SystemInformationBlockTypex* in TS 36.331 is postponed.**

**Proposal 7: All other changes (i.e., for which no comments are received) for TS 38.331 and TS 36.331 are agreed.**

# Reference

1. R2-2106912, LS on RRC parameter for PSFCH RB set, RAN1.
2. R2-2107166, Miscelleneous CR on 38.331, Huawei, HiSilicon.
3. R2-2107167, Miscelleneous CR on 36.331, Huawei, HiSilicon.
4. R2-2107437, Correction on TS 38.331 from the latest RAN1 decisions, ZTE Corporation, Sanechips.
5. R2-2108178, Corrections on RRC parameter PSFCH RB set, CATT.
6. R2-2108219, CR on SL-SRB1 integrity check failure, vivo, Ericsson.