3GPP TSG-RAN WG2 Meeting #119 Electronic R2-22XXXXX

Elbonia, 17 – 26 Aug 2022

**Agenda item: 5.3.1.1.1**

**Source: ZTE Corporation (Rapporteur)**

**Title: Report of [AT119-e][008][NR1516] RRC Conn Control II (ZTE)**

**WID/SID: RRC Conn Control II**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the report of the following email discussion:

* [AT119-e][008][NR1516] RRC Conn Control II (ZTE)

 Scope: Treat [R2-2208474](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208474.zip), [R2-2208476](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208476.zip), [R2-2208553](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208553.zip), [R2-2208550](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208550.zip), [R2-2208551](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208551.zip), [R2-2208552](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208552.zip), [R2-2208579](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208579.zip), [R2-2208580](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208580.zip), [R2-2208581](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208581.zip), [R2-2207400](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2207400.zip), [R2-2207401](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2207401.zip), [R2-2208402](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208402.zip), [R2-2208403](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208403.zip), [R2-2208691](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208691.zip). Determine agreeable parts, For agreeable parts, agree CRs.

 Intended outcome: Report, Agreed CRs, LS out if applicable

 Deadline: Schedule 1

A **first round** with **Deadline for comments W1 Friday August 19th 1900 UTC** to settle scope what is agreeable etc

# 2 Contact Points

Respondents to the email discussion are kindly asked to fill in the following table.

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| Huawei, HiSilicon | Zhenzhen Cao | caozhenzhen@huawei.com |
| OPPO | ShiCong | shicong@oppo.comlihaitao@oppo.com – 3.4 |
| vivo | Yitao Mo (Stephen) | yitao.mo@vivo.com |
| Qualcomm Inc | Mouaffac | mambriss@qti.qualcomm.com  |
| Nokia |  | amaanat.ali@nokia.com |
| MediaTek | Felix Tsai | chun-fan.tsai@mediatek.com |
| NEC | Hisashi Futaki | hisashi.futaki @ nec.com |
| Samsung | Sangyeob Jung | sy0123.jung@samsung.com |
| CATT | Erlin Zeng | erlin.zeng@catt.cn |
| ZTE | Mengjie ZhangFei Dong | zhang.mengjie@zte.com.cn - 3.4dong.fei@zte.com.cn -3.1~ 3.3 |
| Intel | Sudeep Palat | Sudeep.k.palat@intel.com |
| Fujistu | Takako SandaMeiyi Jia | Sanda.takako @ fujitsu.comJiameiyi @ fujitsu.com |
| Ericsson | Antonino Orsino | antonino.orsino@ericsson.com |
| Apple | Fangli XU | fangli\_xu@apple.com |
| Sequans | Olivier Marco | omarco@sequans.com |

# 3 Discussion

## 3.1 *P0-AlphaSets For Msg.A*

[R2-2208474](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208474.zip) Correction for field description on PUSCH MediaTek Beijing Inc. CR Rel-16 38.331 16.9.0 3423 - F NR\_2step\_RACH-Core

[R2-2208476](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208476.zip) Correction for field description on PUSCH MediaTek Beijing Inc. CR Rel-17 38.331 17.1.0 3424 - A NR\_2step\_RACH-Core

|  |
| --- |
| **Issue:**Current field descripton for p0-AlphaSets only specify 4-step RACH when no set is configured, 2-step RACH is not specified. |

**Question 1: Do companies think the issue mentioned in R2-2208474/R2-2208476 is valid?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | Yes/No | This doesn't seem to be a RAN2 issue. |
| OPPO | No | ***p0-AlphaSets***configuration {p0-pusch, alpha} sets for PUSCH (except msg3 and msgA PUSCH), i.e., { {p0,alpha,index1}, {p0,alpha,index2},...} (see TS 38.213 [13], clause 7.1). When no set is configured, the UE uses the P0-nominal for msg3 PUSCH, P0-UE is set to 0 and alpha is set according to msg3-Alpha configured for msg3 PUSCH.As specified in field description, this filed is not used to configure p0-pusch and alpha for 4-step RACH or 2-step RACH as yellow highlighted. The last sentence intends to clarify how to handle the case when the set is absent, i.e., UE shall refer to P0-nominal for msg3 PUSCH. There is no motivation to also introduce MsgA PUSCH as a reference, so we think current spec is clear and no change is needed. |
| vivo | Yes with comments | We agree witht the first change. For the second cahgne, it is not so accurate. *msg3-Alpha* will not be used for MsgA PUSCH if *msgA-Alpha* is provided. Anyway, all the details are given in the 38.213 spec, we don’t see the necessity to clarify everything clearly in the RRC field description.  |
| Qualcomm Inc | Yes | We agree with the intention of the CR |
| Nokia | Yes | We are okay to clarify the dependencies in the field description if the other companies think this is not clear |
| MediaTek | Yes (Proponent) | For HW’s comments, indeed this is related to RAN1 and specified in 38.213, clause 7.1. (show below)OPPO’s comment is not fully correct. When the set is configured, it is not used for msg3 and msgA PUSCH. However, when no set is configured, the UE still need to find some values for P0\_NOMINAL, PUSCH as specified in 38.213. Current 38.331 only explain the default value for 4-step case, not 2-step case.For vivo’s comments, it is correct from RAN2’s point of view. However, the terminology in RAN1 spec, it is still use P0\_NOMINAL for PUSCH. However, indeed we agree that 38.213 is clear in this. It is just 38.331 seems deacribe only for 4-step RACH but not 2-step RACH.We suggest the following two WF:1. RAN2 to remove “When no set is configured, the UE uses the P0-nominal for msg3 PUSCH, P0-UE is set to 0 and alpha is set according to msg3-Alpha configured for msg3 PUSCH.” And let RAN1 spec (38.213) to cover the no set is configured case.
2. RAN2 to cover all cases as we proposed.
 |
| NEC | Yes |  |
| Samsung  | No | p0-AlphaSets is not for RACH. It is for PUSCH other than PUSCH transmission for MsgA/Msg3. In case this parameter is not configured, for PUSCH transmissions other than PUSCH transmission for RACH, UE uses the parameters configured for msg3. So there is no issue. |
| CATT | No | It is stated in the description that *po-AlphaSets* is used to configure {p0-pusch, alpha} sets for PUSCH except msg3 and msgA PUSCH. And when no set is configured, the UE will use the value configured for msg3 PUSCH, i.e. P0-nominal for msg3 PUSCH and P0-UE is set to 0 and alpha is set to msg3-Alpha. It is also specified that:***msg3-Alpha***Dedicated alpha value for msg3 PUSCH (see TS 38.213 [13], clause 7.1). When the field is absent the UE applies the value 1.So we think there is no issue. |
| ZTE |  | We have a similar view with vivo, considering the product will anyway follow TS38.213, we can follow majorities’view to decide whether we need to do the complement for 2-step RACH (e.g. cover both or not), But we do not think remove a correct sentence is a good choice. |
| Fujitsu | Yes  | We think that the issue is valid. |
| Ericsson | No | P0-nominal is not used for MsgA PUSCH. Also, if *msgA-Alpha* is provided, the corresponding Alpha from msg3 is not used. All seems clear in R2 and R1 specs. |
| Xiaomi | Yes | We agree with the intention to align with the 38.213 for the case when p0-AlphaSets is not configured. In this case, Po for all the PUSCH (either msg3/msgA PUSCH or not) uses the Po of msg3/msgA.  |
| Apple | Yes |  |

If the issue is valid, companies are invited to provide the comments on the change:

1. Add more field description for p0-AlphaSets when no set is configured to cover power related parameter for 2-step RACH case

|  |
| --- |
| ***p0-AlphaSets***configuration {p0-pusch, alpha} sets for PUSCH (except msg3 and msgA PUSCH), i.e., { {p0,alpha,index1}, {p0,alpha,index2},...} (see TS 38.213 [13], clause 7.1). When no set is configured, the UE uses the P0-nominal for msg3 PUSCH and msgA PUSCH, P0-UE is set to 0 and alpha is set according to msg3-Alpha configured for msg3 PUSCH and msgA PUSCH. |

**Question 2: If companies think the issue is valid, do companies agree with above change suggested in R2-2208474/R2-2208476?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | No | Should be discussed in RAN1 first, and even it is needed, most likely there should be separate configurations. |
| OPPO | No |  |
| Qualcomm Inc | No | the CR doesn't fully address the issue  |
| MediaTek | Yes (Proponent) | Could QC also let us know which part is not addressed ?  |
| NEC | Maybe | We are fine to wait for RAN1 confirmation, if required. If these changes are added now, do we also need "and msgA PUSCH" for msg3-Alpha? *msg3-Alpha*Dedicated alpha value for msg3 PUSCH and msgA PUSCH (see TS 38.213 [13], clause 7.1). When the field is absent the UE applies the value 1. |
| Samsung | No |  |
| Fujitsu  | No  |  |
| Ericsson | No |  |
| vivo | No | Only the first change is needed.  |
| Xiaomi | No | Suggested change as follow:

|  |
| --- |
| ***p0-AlphaSets***configuration {p0-pusch, alpha} sets for PUSCH (except msg3 and msgA PUSCH), i.e., { {p0,alpha,index1}, {p0,alpha,index2},...} (see TS 38.213 [13], clause 7.1). When no set is configured, the UE uses the P0-nominal for msg3/msgA PUSCH, P0-UE is set to 0 and alpha is set according to msg3-Alpha configured for msg3 PUSCH and msgA-Alpha configured for msgA PUSCH.. |

 |
| Apple | Maybe | We are fine with the first change. But for the 2nd change, msgA-Alpha should be used for the MsgA-PUSCH transmission if configured.  |
|  |  |  |
|  |  |  |
|  |  |  |

## 3.2 Bearer Type Change

[R2-2208553](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208553.zip) Considerations on sn-fieldlength change in the case of bearer type change ZTE Corporation, Sanechips, Nokia, Nokia Shanghai Bell, CATT discussion Rel-15 NR\_newRAT-Core

Chair comment: Postponed last meeting

[R2-2208550](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208550.zip) CR on 38.331 for sn-FieldLength change for the case of bearer type change ZTE Corporation, Sanechips, Nokia, Nokia Shanghai Bell, CATT CR Rel-15 38.331 15.18.0 3436 - F NR\_newRAT-Core

[R2-2208551](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208551.zip) CR on 38.331 for sn-FieldLength change for the case of bearer type change ZTE Corporation, Sanechips,Nokia, Nokia Shanghai Bell, CATT CR Rel-16 38.331 16.9.0 3437 - A NR\_newRAT-Core

[R2-2208552](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208552.zip) CR on 38.331 for sn-FieldLength change for the case of bearer type change ZTE Corporation, Sanechips, Nokia, Nokia Shanghai Bell, CATT CR Rel-17 38.331 17.1.0 3438 - A NR\_newRAT-Core

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description of the issue:****Observation 1: According to the L2 action of the bearer type change defined in the TS 37.340, the RLC entity of a DRB shall be released in one node and newly established in the other node for bearer type change case (MCG to SCG, or SCG to MCG).****Table A-1: L2 handling for bearer type change with and without a security key change due to a change of the termination point.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bearer type change from rowto col** | **MCG** | **Split** | **SCG** |
| **no change of termination point****(no key change)** | **change of termination point****(key change)** | **no change of termination point****(no key change)** | **change of termination point****(key change)** | **no change of termination point****(no key****change)** | **change of termination point****(key change)** |
| MCG | N/A | PDCP:Re-establishMCG RLC:See Note 1MCG MAC:See Note 1SCG RLC:No actionSCG MAC:No action | PDCP: ReconfigureMCG RLC: No actionMCG MAC: No actionSCG RLC: EstablishSCG MAC: Reconfigure | PDCP:Re-establishMCG RLC:See Note 1MCG MAC:See Note 1SCG RLC:EstablishSCG MAC:Reconfigure | PDCP:RecoveryMCG RLC:See Note 3MCG MAC:ReconfigureSCG RLC:EstablishSCG MAC:Reconfigure | PDCP:Re-establishMCG RLC:See Note 3MCG MAC:ReconfigureSCG RLC:EstablishSCG MAC:Reconfigure |
| Split | PDCP:RecoveryMCG RLC:No actionMCG MAC:No actionSCG RLC:See Note 4SCG MAC:Reconfigure | PDCP: Re-establishMCG RLC: See Note 1MCG MAC: See Note 1SCG RLC: See Note 4SCG MAC: Reconfigure | N/A | PDCP:Re-establishMCG RLC:See Note 1MCG MAC:See Note 1SCG RLC: See Note 1SCG MAC: See Note 1 | PDCP: RecoveryMCG RLC:See Note 3MCG MAC:ReconfigureSCG RLC: No actionSCG MAC:No action | PDCP:Re-establishMCG RLC:See Note 3MCG MAC:ReconfigureSCG RLC: See Note 1SCG MAC: See Note 1 |
| SCG | PDCP:RecoveryMCG RLC: EstablishMCG MAC: ReconfigureSCG RLC: See Note 4SCG MAC: Reconfigure | PDCP:Re-establishMCG RLC:EstablishMCG MAC:ReconfigureSCG RLC:See Note 4SCG MAC:Reconfigure | PDCP:ReconfigureMCG RLC: EstablishMCG MAC: ReconfigureSCG RLC: No actionSCG MAC: No action | PDCP:Re-establishMCG RLC:EstablishMCG MAC:ReconfigureSCG RLC:See Note 1SCG MAC: See Note 1 | N/A | PDCP:Re-establishMCG RLC:No actionMCG MAC:No actionSCG RLC:See Note 1SCG MAC:See Note 1 |

NOTE 3: For EN-DC and NGEN-DC: Re-establishment and release. For NE-DC and NR-DC: Release.NOTE 4: For NE-DC: Re-establishment and release. For EN-DC, NGEN-DC and NR-DC: Release.**Observation 2: Given the lack of the *sn-Fieldlength* information of DRBs in the inter-node RRC message, the L2 action to the bearer type change defined in TS 37.340 can not be implemented due to the restriction of ‘*The value of sn-FieldLength for a DRB/multicast MRB shall be changed only using reconfiguration with sync’*** |

**Question 3: Do companies agree with the above issue observed in above?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | Yes | The intention of this CR should be aligned with the intention of the spec text, but the spec may be ambiguous. |
| OPPO | Yes | We think the potential misunderstanding is that the field description says the sn-Fieldlength can be changed only by using reconfiguration with Sync, however for the bearer type change defined in 37.340, the RLC will be release/established in MCG/SCG for MCG/SCG or SCG/MCG bearer type change case. Then, if the value of sn-Fieldlength can only be changed by reconfiguration with sync, it means for the MCG/SCG or SCG/MCG bearer type change cases, the sn-Fieldlength should be the same. However somehow it’s not feasible because there is no such info in the inter-node message. |
| vivo | Yes | We agree with the analysis mentioned.  |
| Ericsson | Yes |  |
| Qualcomm Inc | Yes |  |
| Nokia | Yes | As proponent we also think the current text which is restrictive could be done away with. |
| MediaTek | No | The scenario mentioned here is more like release RLC entity and add a new one. In this flow, we don’t consider this as “*change*” of RLC SN length. So, the NW is already allowed to configure the SN without limitation by current description.However, we can accept to have some clarification if majority prefer.ZTE: Please see the observation 1, the RLC entity is released from source node and a new RLC entity is easblished in target node, but there is no any information exchange (e.g. inter-node RRC signalling) between two nodes about the ordinary value of the *sn-FieldLength,* as a result, target node may establish the new RLC entity with a **different** value with the relased RLC entity in the source node. The problem is, accoding to the current description in 38.331, absolutely a violation to the restriction sentence,Please see below:***sn-FieldLength***Indicates the RLC SN field size, see TS 38.322 [4], in bits. Value *size6* means 6 bits, value *size12* means 12 bits, value *size18* means 18 bits. The value of ***sn-FieldLength* for the DRB** shall be changed only using reconfiguration with sync. The network configures only value *size12* in *SN-FieldLengthAM* for SRB. |
| NEC |  | We agree with the Observation 1. For the Observation 2, it is still not clear whether the restriction of “The value of *sn-FieldLength* for a DRB/multicast MRB shall be changed only using reconfiguration with sync” is (or should be) applicable to this scenario where SCG/MCG RLC entity release an RLC bearer and the RLC bearer is newly established by MCG/SCG RLC entity? It seems not, as we understand Option 2-1 below is current intention.. ZTE: Yes, 2-1 is current intention. Maybe the original intention of such restriction sentence is not aiming at bearer type change, but this sentence is actually a restricton to the implementation of bearer type change defined in 37.340 |
| Samsung | Yes |  |
| CATT | Yes |  |
| ZTE | Yes | Proponent |
| Intel | Yes (with comment) | We agree with the observation if the current specifications is read strictly as written. The original text restriction was not meant to cover this case. |
| Fujitsu | Yes |  |
| Xiaomi | Yes |  |
| Apple | No | For O1, the L2 action of the bearer type change defined in the TS 37.340 can be implemented when the configuration of *sn-Fieldlength* is not changed. For O2, if both nodes belong to the same NW vendor, the nodes can provide the configuration follow the same rules, and the *sn-Fieldlength*configuration can be assumed known by each other.  |
| Sequans | No | The sn-FieldLength is part of the RLC-Config of an RLC entity.Only that sn-FieldLength (associated to that RLC entity) for a DRB/multicast MRB can be changed only using reconfiguration with sync.Agree with Mediatek that the scenario considered implies different RLC entities hence the restriction does not apply.We can also follow majority but the spec is clear to us. |

If companies think the issue is valid, please provide the comments on the below options for resolving above issue:

* **Option 1: Implement the bearer type change via *reconfigurationwithSynch* or bearer add/release, some clarifications in the current TS 37.340 are needed.**
* **Option 2: Loose the restriction of the *sn-fieldlength* change defined in TS 38.331. the correction on TS 38.331 is needed.**
* **Option 2-1: Narrowing down the range of restriction of the *sn-filedlength* change from DRB level to RLC level such as ‘the value of sn-fieldlength of a RLC entity for a DRB shall be changed only using reconfiguration with sync’**
* **Option 2-2: Remove the restriction sentence ‘the value of sn-fieldlength for a DRB shall be changed only using reconfiguration with sync’ in the field description of *sn-FieldLength***
* **Option 3: Include the information element *sn-fieldlength* in the inter-node message, the correction on TS 38.331 is needed, and need send an LS to RAN3.**

**Question 4: If the issue is confirmed, which option do you prefer?**

|  |  |  |
| --- | --- | --- |
| Company | Option | Comments |
| Huawei, HiSilicon | 2-1 | Option 2-1 we think should be original intention of the spec text. |
| OPPO | Prefer Option1/3 |  |
| vivo | Option 2-1 | Option 2-1 resolves the issue with minimum restriction change.  |
| Ericsson | 2-1 | This was the intention from the beginning |
| Qualcomm Inc | 2-1 |  |
| MediaTek | 2-1 |  |
| NEC | 2-1 | Agree with Huawei and Ericsson  |
| Samsung | 2-1 | Same view as Huawei |
| CATT | 2-1 |  |
| ZTE | 2-1 |  |
| Intel | Option 2-1 preferred | Our preference is for option 2-1. The original text restriction was not meant to cover this case and better to clarify that. |
| Fujitsu | 2-1 |  |
| Xiaomi | 2-1 |  |
| Apple | Option 1 | Option 1 is fine, but the further clarification seems unnecessary. |
| Sequans | 2-1 |  |

For companies who prefer option 2-1, please comments on the corresponding change present in the CR R2-2208550, R2-2208551, R2-2208552:

|  |
| --- |
| ***R15/R16:******sn-FieldLength***Indicates the RLC SN field size, see TS 38.322 [4], in bits. Value *size6* means 6 bits, value *size12* means 12 bits, value *size18* means 18 bits. The value of *sn-FieldLength* of a RLC entity for the DRB shall be changed only using reconfiguration with sync. The network configures only value *size12* in *SN-FieldLengthAM* for SRB. |
| ***R17:******sn-FieldLength***Indicates the RLC SN field size, see TS 38.322 [4], in bits. Value *size6* means 6 bits, value *size12* means 12 bits, value *size18* means 18 bits. The value of *sn-FieldLength* of a RLC entity forthe DRB/multicast MRB shall be changed only using reconfiguration with sync. The network configures only value *size12* in *SN-FieldLengthAM* for SRB. |

**Question 5: If the issue is confirmed, do companies agree with the change provided in R2-2208550/R2-2208551/R2-2208552?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | Yes | The changes look good.For the conditional presence for *Reestab*, “The field is mandatory present at bearer setup” should be “The field is mandatory present at RLC bearer setup.” |
| vivo | Yes |  |
| Ericsson | Yes |  |
| Qualcomm Inc | Yes |  |
| NEC | Yes |  |
| Samsung | Yes |  |
| CATT | Yes |  |
| ZTE | Yes |  |
| Intel | Yes |  |
| Fujitsu | Yes |  |
| Xiaomi | Yes |  |
| Sequans | Yes but | Usually don’t use "a RLC entity", but "an RLC entity". |
|  |  |  |
|  |  |  |

For companies who prefer option 2-2, please comments on the corresponding change present in the CR R2-2208550, R2-2208551, R2-2208552:

|  |
| --- |
| **R15/R16:*****sn-FieldLength***Indicates the RLC SN field size, see TS 38.322 [4], in bits. Value *size6* means 6 bits, value *size12* means 12 bits, value *size18* means 18 bits. The network configures only value *size12* in *SN-FieldLengthAM* for SRB. |
| **R17:*****sn-FieldLength***Indicates the RLC SN field size, see TS 38.322 [4], in bits. Value *size6* means 6 bits, value *size12* means 12 bits, value *size18* means 18 bits. The network configures only value *size12* in *SN-FieldLengthAM* for SRB. |

**Question 6: If the issue is confirmed, do companies agree with the change provided in R2-2208550/R2-2208551/R2-2208552?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## 3.3 PDCP *discardTimer*

[R2-2208579](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208579.zip) 38.331 cr(Rel-17) correction on the condition of configuring discardTimer Xiaomi CR Rel-17 38.331 17.1.0 3447 - F NR\_newRAT-Core

*Moved from 6.0.3*

[R2-2208580](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208580.zip) 38.331 cr(Rel-16) correction on the condition of configuring discardTimer Xiaomi CR Rel-16 38.331 16.9.0 3448 - F NR\_newRAT-Core

*Moved from 6.0.3*

[R2-2208581](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2208581.zip) 38.331 cr(Rel-15) correction on the condition of configuring discardTimer Xiaomi CR Rel-15 38.331 15.18.0 3449 - F NR\_newRAT-Core

*Moved from 6.0.3*

|  |
| --- |
| **Issue:**According to 38.323, it says that:“a) *discardTimer*This timer is configured **only for DRBs**. The duration of the timer is configured by upper layers TS 38.331 [3]. In the transmitter, a new timer is started upon reception of an SDU from upper layer.”However, in 38.331, the discardTimer IE uses condition setup, which has the following condition:“The field is mandatory present **in case of SRB or DRB setup**. Otherwise the field is optionally present, need M.”Thus, there is misalignment between 38.331 and 38.323. |

**Question 7: Do companies think the issue raised by R2-2208581 is valid?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Technical Comments |
| Huawei, HiSilicon | No | The current text has no problem. The network will not signal it when it is not needed. |
| OPPO | Yes | Seems this is a typo in 331 the parent IE is drb, i.e., not related to SRB at all? |
| vivo | No | Combining SDAP and RRC specs, we can know that the NW would only configure this timer for DRBs, which is the intended behavior. There is no misalignment.  |
| Nokia | No | Agree with Huawei |
| MediaTek | No | The intention is fine but see very little chance that the current wording will lead to wrong implementation |
| NEC | No | The corresponding field is within “drb” branch. No need to update. |
| CATT | No | Share the above views there this does not seem to be critical issue to correct. |
| ZTE | No strong view |  We can accept this change if majorities like. |
| Intel | May be No | Since the field is within the drb SEQUENCE, there should not any confusion that it is applicable only for DRB. |
| Fujitsu | No strong view | This seems typo. But the current text does not cause any problem. |
| Ericsson | No | This is not an essential correction. A discard timer would not be configured for SRB. |
| Xiaomi | Yes | Given this field is in DRB branch, it is wrong to use the condition setup which mentions both SRB and DRB. It would give the wrong impression that if SRB is setup, then this field in DRB must exist. |
| Apple | No | The change is technically correct. However, the *discardTimer* is configured for DRBs only (also applies to e.g., headerCompression and RoHC), as can be seen from “drb” before the start of the ASN.1 sequence. Strictly speaking, one would also have to adjust Cond “*Setup1*” and “*Setup2*”, but the current code looks cleaner the way it is. |
| Sequans | No | Agree with NEC |

If above issue is confirmed, companies are invited to provide the comments on the suggested solution in R2-2208581:

* To align with 38.323 that *discardTimer* is only applicable to DRB.

|  |
| --- |
| DCP-Config ::= SEQUENCE { drb SEQUENCE { discardTimer ENUMERATED {ms10, ms20, ms30, ms40, ms50, ms60, ms75, ms100, ms150, ms200, ms250, ms300, ms500, ms750, ms1500, infinity} OPTIONAL, -- Cond DRB pdcp-SN-SizeUL ENUMERATED {len12bits, len18bits} OPTIONAL, -- Cond Setup2 pdcp-SN-SizeDL ENUMERATED {len12bits, len18bits} OPTIONAL, -- Cond Setup2 headerCompression CHOICE { notUsed NULL, rohc SEQUENCE { maxCID INTEGER (1..16383) DEFAULT 15/\*omit for short\*/DRB This field is mandatory present when the corresponding DRB is being set up, absent for SRBs. Otherwise this field is optionally present, need M.  |

**Question 8: If the issue is confirmed, do companies agree with above change provided in R2-2208581?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| OPPO | Yes with | It’s ok the update the spec, but it seems this is a typo.BTW, the format of the CR needs to be adjusted |
| Xiaomi | Yes as proponent |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## 3.4 DAPS

[R2-2207400](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2207400.zip) Correction to RLF configuration in case of DAPS HO Fujitsu CR Rel-16 38.331 16.9.0 3255 - F NR\_Mob\_enh-Core

[R2-2207401](file:///C%3A%5CUsers%5Cmtk65284%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CTSGR2_119-e%5CDocs%5CR2-2207401.zip) Correction to RLF configuration in case of DAPS HO Fujitsu CR Rel-17 38.331 17.1.0 3256 - A NR\_Mob\_enh-Core

|  |
| --- |
| **Issue:**According to current TS 38.331, if any DAPS bearer is configured,* In case that *rlf-TimersAndConstants* is not configured for a cell group, or the *SpCellConfig* contains the *rlf-TimersAndConstants* but the received *rlf-TimersAndConstants* is set to *release*, the UE shall use values for timers T301, T310, T311 and constants N310, N311 for the target cell group, as included in *ue-TimersAndConstants* received in SIB1.

However, regarding SIB1, UE implementation can be different, including SIB1 for source cell or SIB1 for target cell. Also, UE and gNB may have different understandings on the SIB1. |

**Question 9: Do companies think the issue raised by R2-2207400/R2-2207401 is valid?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Technical Comments |
| Huawei, HiSilicon | Yes |  |
| OPPO | No | We think the current spec is correct because UE does not read target cell’s SIB1 during DAPS HO. |
| vivo | No | Obviously, it is referred to as the SIB1 for target cell based on the procedural text. There is no room for misunderstanding. |
| Nokia | No | This does not look essential correction as the text seems already clear |
| MediaTek | No | Same view as Vivo |
| NEC | No | but if companies’ views are different, then we are fine to have some corrections. Our understanding is the same as the intention of the changes.  |
| Samsung | Yes |  |
| CATT | No | It is obvious that the SIB1 is refered to the target cell, and considering the RRCReconfiguration message containing the rlf-TimersAndConstants is for the target cell, so the SIB1 mentioned in the procedure should also refer to the SIB1 of target cell. |
| ZTE | No | Same view as Vivo |
| Intel | No | UE does not read the SIB1 of the target cell until some time after completion of the HO. So it has to continue with the source cell values until it has acquired the SIB1 of the target cell. We don’t consider this a big issue as it is only for a short period and if indeed this is an issue, network can provide the value over dedicated signalling. |
| Fujitsu  | Yes (proponent) | First, the UE can have valid SIB1 for both source cell and target cell.Secondly, for other configuration, e.g. RLC entities, the UE establishes the RLC entities with the same configuration as for source cell group and then reconfigures the RLC entites if related configuration for target cell group is received. If no explicit statement, the same rule could be used for the RLF parameters by some companies.If the UE and the gNB have different understandings on SIB1, RLF may be declared too late and RRC reestablishment is initiated. So, we think that the issue is essential and needs to be solved. |
| Ericsson | No strong view | The CR describes the correct behaviour. The question is if this clarification is worth having a CR for. We would be very surprised if a UE would use set these timers&constants for the target to the values for the SIB1 for the source. |
| Xiaomi | No |  |
| Apple | No | UE perform the RLC configuration for the target SpCell during the DAPS, it’s straightforward that the SIB1 is the target cell’s SIB1. We donot see any ambiguity according to the current spec description.  |

If above issue is confirmed, companies are invited to provide the comments on the suggested solution in R2-2205563:

The following changes are suggested:

* Add “for the target SpCell” to specify that the UE uses RLF parameters received from target cell for target cell group, in chapter 5.3.5.5.6, 5.3.5.5.7

|  |
| --- |
| **The First change:**5.3.5.5.6 RLF Timers & Constants configurationThe UE shall:1> if the received *rlf-TimersAndConstants* is set to *release*:2> if any DAPS bearer is configured:3> use values for timers T301, T310, T311 and constants N310, N311 for the target cell group, as included in *ue-TimersAndConstants* received in *SIB1* for the target SpCell;2> else:3> use values for timers T301, T310, T311 and constants N310, N311, as included in *ue-TimersAndConstants* received in *SIB1*; |
| **The Second change:**5.3.5.5.7 SpCell ConfigurationThe UE shall:1> if the *SpCellConfig* contains the *rlf-TimersAndConstants*:2> configure the RLF timers and constants for this cell group as specified in 5.3.5.5.6;1> else if *rlf-TimersAndConstants* is not configured for this cell group:2> if any DAPS bearer is configured:3> use values for timers T301, T310, T311 and constants N310, N311 for the target cell group, as included in *ue-TimersAndConstants* received in *SIB1* for the target SpCell;2> else3> use values for timers T301, T310, T311 and constants N310, N311, as included in *ue-TimersAndConstants* received in *SIB1*; |

**Question 10: If the issue is confirmed, do companies agree with above change in R2-2207400/R2-2207401**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | Yes |  |
| NEC |  | We do not see a strong need but can follow majority view. |
| Samsung | Yes |  |
| Fujitsu  | Yes  | The changes can solve the raised issue. |
| Ericsson | Yes |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

[R2-2208402](file:///D%3A/Documents/3GPP/tsg_ran/WG2/RAN2/2208_R2_119-e/Docs/R2-2208402.zip) Clarification on headerCompression for DAPS bearer ZTE Corporation, Sanechips CR Rel-16 38.331 16.9.0 3416 - F NR\_Mob\_enh-Core

[R2-2208403](file:///D%3A/Documents/3GPP/tsg_ran/WG2/RAN2/2208_R2_119-e/Docs/R2-2208403.zip) Clarification on headerCompression for DAPS bearer ZTE Corporation, Sanechips CR Rel-17 38.331 17.1.0 3417 - A NR\_Mob\_enh-Core

|  |
| --- |
| **Issue:**For DAPS bearers, the PDCP entity is configured with two sets of security functions and keys and two sets of header compression protocols, associated with source cell and target cell, respectively. So the target cell can reconfigure *headerCompression* for PDCP entity associated with DAPS bearer. According to the field description for *headerCompression*, the network reconfigures *headerCompression* only upon reconfiguration involving PDCP re-establishment, and without any *drb-ContinueROHC*. However, for DAPS bearers, no PDCP re-establishment shall be performed. The network only reconfigures the PDCP entity to configure or release DAPS. |

**Question 11: Do companies think the issue raised by R2-2208402/R2-2208403 is valid?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Technical Comments |
| Huawei, HiSilicon | Yes |  |
| OPPO |  | Not sure what is the case for NW configuring headerCompression when reconfiguring the PDCP entity to release DAPS. We understand it simply removes the source set. |
| vivo | Yes |  |
| Qualcomm Inc | Yes | ROHC can be changed upon DAPS bearer reconfig. The current spec does not capture this |
| MediaTek | Not sure | We don’t understand why NW has to configure headerCompression when releasing DAPS. |
| NEC | Yes | It seems valid issue. |
| Samsung | Yes |  |
| CATT | Yes |  |
| ZTE | Yes |  |
| Intel | Yes |  |
| Fujitsu  | No  | As specified iin TS 38.323, PDCP entity is "reconfigured" for DAPS bearer, but header compression protocol is established and configured for the target, or released from the source. Therefore headercompression protocol is not "reconfigured" in DAPS case. |
| Ericsson | Yes |  |
| Xiaomi | Yes |  |
| Apple | Yes |  |

If above issue is confirmed, companies are invited to provide the comments on the suggested solution in R2-2208402/R2-2208403:

The following changes are suggested:

* Update the field description for *headerCompression* to clarify that the network reconfigures *headerCompression* only upon reconfiguration involving PDCP re-establishment or involving PDCP entity reconfiguration to configure or release DAPS, and without any *drb-ContinueROHC*.

|  |  |
| --- | --- |
| – *PDCP-Config*

|  |
| --- |
| ***headerCompression***If rohc is configured, the UE shall apply the configured ROHC profile(s) in both uplink and downlink. If *uplinkOnlyROHC* is configured, the UE shall apply the configured ROHC profile(s) in uplink (there is no header compression in downlink). ROHC can be configured for any bearer type. ROHC and EHC can be both configured simultaneously for a DRB. The network reconfigures *headerCompression* only upon reconfiguration involving PDCP re-establishment or involving PDCP entity reconfiguration to configure or release DAPS, and without any *drb-ContinueROHC*. Network configures *headerCompression* to *notUsed* when *outOfOrderDelivery* is configured. |

 |

**Question 12: If the issue is confirmed, do companies agree with above change in R2-2208402/R2-2208403**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | Yes,but | In the above change, the wording “to configure or release DAPS” has some ambiguities, e.g. it may be understood that non-DAPS bearer(s) will be configured with headerCompression.So we propose to improve the wording as below:…. or involving PDCP entity reconfiguration to configure DAPS bear(s) or to release DAPS bear(s) |
| vivo | Agree with intention | DAPS should be DAPS bearer. |
| Qualcomm Inc | Yes |  |
| MediaTek |  | The sentence becomes very long and difficult to read.  |
| NEC | Yes | agree with Huawei to add “bearer” |
| Samsung | Yes |  |
| CATT | Yes |  |
| ZTE | Yes | Agree with the wording suggested by Huawei. |
| Intel | Yes with comment | Agree with Huawei’s suggested update. |
| Fujitsu | No | PDCP entity reconfiguration case, "~~re~~configure" is correct. |
| Ericsson | Yes | The original wording is sufficiently good in our mind. But OK to do the Huawei-change if some feel strongly for that. |
| Xiaomi | Yes |  |
| Apple | Yes |  |

[R2-2208691](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CRAN2%5C2208_R2_119-e%5CDocs%5CR2-2208691.zip) Clarification on reestablishRLC for DAPS HO ZTE Corporation, Sanechips **Late**

|  |  |  |
| --- | --- | --- |
| **Issue:***Observation 1: According to the current RRC specs, when the security key is changed for the target cell, the NW should set the reestablishRLC to true for the RLC entity associated with the target cell, regardless of whether the RLC bearer is associated with a DAPS bearer or not.*

|  |
| --- |
| ***reestablishRLC***Indicates that RLC should be re-established. Network sets this to *true* at least whenever the security key used for the radio bearer associated with this RLC entity changes. For SRB2, multicast MRBs and DRBs, unless full configuration is used, it is also set to *true* during the resumption of the RRC connection or the first reconfiguration after reestablishment. For SRB1, when resuming an RRC connection, or at the first reconfiguration after RRC connection reestablishment, the network does not set this field to *true.* |

*Observation 2:* *According to the text procedure in 5.3.5.5.4 RLC bearer addition/modification, the UE will not use the reestablishRLC, if the RLC bearer is associated with a DAPS bearer, or if any DAPS bearer is configured and the RLC bearer is associated with an SRB.*

|  |
| --- |
| 5.3.5.5.4 RLC bearer addition/modificationFor each *RLC-BearerConfig* received in the *rlc-BearerToAddModList* IE the UE shall:1> if the UE's current configuration contains an RLC bearer with the received *logicalChannelIdentity/LogicalChannelIdentityExt* within the same cell group:2> if the RLC bearer is associated with an DAPS bearer, or2> if any DAPS bearer is configured and the RLC bearer is associated with an SRB:3> reconfigure the RLC entity or entities for the target cell group in accordance with the received *rlc-Config*;3> reconfigure the logical channel for the target cell group in accordance with the received *mac-LogicalChannelConfig*;2> else:3> if *reestablishRLC* is received:4> re-establish the RLC entity as specified in TS 38.322 [4];3> reconfigure the RLC entity or entities in accordance with the received *rlc-Config*;3> reconfigure the logical channel in accordance with the received *mac-LogicalChannelConfig*;3> if *servedMBS-RadioBearer* is received:4> associate this logical channel with the PDCP entity identified by *servedMBS-RadioBearer*; |

There are some misalignment between the field description of *reestablishRLC* and the text procedure on RLC bearer addition/modification. According to the field description, the NW must configure *reestablishRLC* when the security key used for the radio bearer associated with this RLC entity changes, even if the radio bearer is associated with the DAPS bearer or SRB in DAPS HO. But the UE will ignore this IE based on the text in RRC specs. So no need such strict restriction on *reestablishRLC* for DAPS bearer and SRB in DAPS HO. |

**Question 13: Do companies agree with the above issue observed in above?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | No | It was discussed at RAN2#112-e meeting. In the report below, section 2.3 is about RLC reestablishment discussion for DAPS (for discussing the CR R2-2010297). The majority of views is that in case of DAPS, a new RLC entity is established for the target, so it is not a reconfiguration of source RLC. In addition, lots of companies think if such changes are agreeable, we may have to specify alll cases for RLC re-establishment. In the end, the relevant CR was not agreed.R2-2010727 [AT112-e][213][MOB] DAPS RRC corrections Ericsson discussion Rel-16 NR\_Mob\_enh-Core, LTE\_feMob-CoreFor the issue mentioned in Q13, we understand that RLC re-establishment is not needed, and there is no need to update the current spec.ZTE: Thanks Huawei to track back the discussion history for RLC reestablishment. However, the issue here is different from that was discussed in R2-2010727. Our intention is to clarify that the NW implementation for DAPS should not be restricted by the existing text “Network sets this to true at least whenever the security key used for the radio bearer associated with this RLC entity changes. ”.But it seems companies may have different understanding on whether the restriction “Network sets this to true at least whenever the security key used for the radio bearer associated with this RLC entity changes. ” is applicable to DAPS HO or not:* **Understanding 1**: the restriction is applicable to any case where the security key used for the radio bearer is changed (i.e. including DAPS HO, considering that there is only one radio bearer for the source and the target, but the key for the target is changed), so the NW must set reestablishRLC for DAPS bearer or SRB in DAPS HO when the target security key is changed.
* **Understanding 2**: the restriction is not applicable to DAPS HO. Since a new RLC entity is established for the target, it is not a reconfiguration of source RLC. So it is not counted as a case that the security key used for the radio bearer associated with this RLC entity is changed.

Our initial clarification is based on understanding 1. So the intention is to loosen the current restriction for DAPS bearer or SRB in DAPS HO. But it may be better to clarify the understanding among companies before discussing whether some change is required for the current spec. |
| OPPO | Yes |  |
| vivo | No | Agree with Huawei.  |
| MediaTek |  No | Agree with Huawei. |
| Samsung | No |  |
| CATT | No | We agree there may be some misalignment between the field description of reestablishRLC and the text procedure on RLC bearer addition/modification. But as the UE will ignore the field as per the text procedure, so no issue will be led in, hence the restriction is not needed. |
| ZTE | Yes | See our response to Huawei’s comment. |
| Intel | No | Agree with Huawei. But OK to discuss further. |
| Fujitsu | No |  |
| Ericsson | No | Agree with Huawei |
| Xiaomi | No |  |
| Apple | Yes |  |
| Sequans | No | No issue so better to keep the specification simpler. |
|  |  |  |

If above issue is valid, companies are invited to provide the comments on the suggested proposal and change in R2-2208691:

The following proposal is suggested to remove the restriction on reestablishRLC for DAPS bearer and SRB in DAPS HO:

**Proposal 1: The NW may or may not configure the *reestablishRLC* for a RLC bearer if the RLC bearer is associated with a DAPS bearer, or if any DAPS bearer is configured and the RLC bearer is associated with an SRB.**

And the corresponding change is provided:

|  |  |
| --- | --- |
| – *RLC-BearerConfig*

|  |
| --- |
| ***reestablishRLC***Indicates that RLC should be re-established. If the RLC bearer is associated with a DAPS bearer, or if any DAPS bearer is configured and the RLC bearer is associated with an SRB, network may or may not set this to *true*. Otherwise, network sets this to *true* at least whenever the security key used for the radio bearer associated with this RLC entity changes. For SRB2 and DRBs, unless full configuration is used, it is also set to *true* during the resumption of the RRC connection or the first reconfiguration after reestablishment. For SRB1, when resuming an RRC connection, or at the first reconfiguration after RRC connection reestablishment, the network does not set this field to *true.* |

 |

**Question 14: If the issue is valid, do companies agree with above proposal and change in R2-2208691**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| Huawei, HiSilicon | No | See our comments for Q13. |
| OPPO | Yes |  |
| ZTE | Yes |  |
| Apple | Yes |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# 4 Conclusion

TBD.