**3GPP TSG-RAN WG2 Meeting #111-eR2-200xxxx**

**Online, 17–28 August 2020**

**Agenda item: 5.4.1.1**

**Source: CATT**

**Title: Report of ‎[AT111-e][004][NR15] L2 Parameters and Security (CATT)‎**

**Document for: Discussion and Agreement**

# 1 Introduction

This is to report the result of the following email discussion in RAN2#111-e Meeting [1].

* [AT111-e][004][NR15] L2 Parameters and Security (CATT)

Scope: Treat [R2-2008038](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2008038.zip), [R2-2008039](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2008039.zip), [R2-2006891](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2006891.zip), [R2-2006892](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2006892.zip), [R2-2007348](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2007348.zip), [R2-2007349](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2007349.zip), [R2-2006993](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2006993.zip), [R2-2006994](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2006994.zip) (proponents to drive)

Part 1: Decision whether to make corrections, identify agreeable parts. Identify Controversial issues for on-line treatment (if any).

Deadline: Aug 20, 0900 UTC.

Part 2: For agreeable parts, continuation to agree CRs.

Deadline: Aug 26, 0900 UTC.

The remainder of this document is organized as the following. The discussions are in Section 2 and the conclusions are summaried in Section 3.

# 2 Discussion

## 2.1 Reconfiguring RoHC and setting the drb-ContinueROHC simultaneously

Companies are invited to provide their views/comments on the following CRs in the following table.

R2-2008038‎ Reconfiguring RoHC and setting the drb-ContinueROHC simultaneously Qualcomm Incorporated CR Rel-15‎ ‎38.331‎ ‎15.10.0‎ ‎1978‎ ‎-‎ F NR\_newRAT-Core

R2-2008039‎ Reconfiguring RoHC and setting the drb-ContinueROHC simultaneously Qualcomm Incorporated CR Rel-16‎ ‎38.331‎ ‎16.1.0‎ ‎1979‎ ‎-‎ A NR\_newRAT-Core

**Table 1**

|  |  |  |
| --- | --- | --- |
| Company Name | Views:  Agree as is; Agree with changes; Disagree | Comments |
| Qcom | Agree | Proponent: RoHC continuity is not possible unless the RoHC configuration is preserved upon the reception of the ReconfigurationWithSync. Hence adding such restriction is justified |
| Nokia | Agree | Agree that the drb-ContinueROHC need not be set to “true if the ROHC context is reconfigured. |
| MediaTek | Agree |  |
| CATT | Agree |  |
|  |  |  |
|  |  |  |
| Huawei, HiSilicon | Maybe no | First, the motivation is just to avoid some bad network configuration, which basically can be handled by network implementation, as we did for many other configurations.  Secondly, not sure it is absolutely true that the network cannot reconfigure anything in headerCompression IE in case of drb-ContinueROHC indicated. For example, the network could be possible to reconfigure maxCID to increase the value.  We prefer to leave this to network implementation. But if majorities are fine with the change, we can also accept it. |
| ZTE  (LiuJing) | Agree |  |
| Intel | Agree | The restriction is reasonable and good to capture. |
| vivo | Agree | Agree the intention of the CR. Considering smart NW will not reconfigure ROHC and set drb-ContinueROHC to “true” simultaneously, such restriction may not need to be specified. But, we are fine if all of companies support to add such restriction. |
| Samsung | Agree | We assume the network implementation does the proposed behavior but the clarification seems OK. |

**Proposed conclusion:**

TBD

## 2.2 On UE behaviour after TAT expiry due to reconfigurationWithSync

Companies are invited to provide their views/comments on the following CRs in the following table.

R2-2006891‎ CR to clarify UE behaviour after TAT expiry due to reconfigurationWithSync ZTE Corporation, ‎Sanechips CR Rel-15‎ ‎38.331‎ ‎15.10.0‎ ‎1750‎ ‎-‎ F NR\_newRAT-Core

R2-2006892‎ CR to clarify UE behaviour after TAT expiry due to reconfigurationWithSync ZTE Corporation, ‎Sanechips CR Rel-16‎ ‎38.331‎ ‎16.1.0‎ ‎1751‎ ‎-‎ A NR\_newRAT-Core

**Table 2**

|  |  |  |
| --- | --- | --- |
| Company Name | Views:  Agree as is; Agree with changes; Disagree | Comments |
| Qcom | Agree | Agree with the intention of the CR, as delta Signaling is not possible during ReconfigurationWithSync for these fields. |
| Ericsson (Antonino Orsino) | Agree | We are okay to clarify that delta signaling does not apply for those fields. |
| Nokia | Agree | The existing specification is a bit inconsistent with this so the NOTE could be useful. |
| MediaTek | Agree with changes | The added NOTE 1 should be corrected to refer to 38.321, not 36.321 |
| CATT | Agree |  |
| Huawei, HiSilicon | Agree | Fine to clarify it given that the procedure is complicated. |
| ZTE  (LiuJing) | Agree | Thanks MediaTek for spotting the error, will be fixed. |
| Intel | Agree | It is useful to clarify to avoid misunderstanding on whether RRC configuration is also released and delta signalling can be applied. |
| vivo | Agree | Agree with MTK that the reference in NOTE 1 should be updated to refer to 38.321. |
| Samsung | Agree | Agree to the intention and adding a NOTE. |

**Proposed conclusion:**

TBD

## 2.3 On NR PDCP COUNT wrap around

Companies are invited to provide their views/comments on the following CRs in the following table.

[R2-2007348](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2007348.zip) Clarification on NR PDCP COUNT wrap around Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.10.0 1834 - F NR\_newRAT-Core

[R2-2007349](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_111-e\Docs\R2-2007349.zip) Clarification on NR PDCP COUNT wrap around Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.1.0 1835 - A NR\_newRAT-Core

**Table 3**

|  |  |  |
| --- | --- | --- |
| Company Name | Views:  Agree as is; Agree with changes; Disagree | Comments |
| Qcom | Agree |  |
| Ericsson (Antonino Orsino) | Agree (Rapporteur CR) | We are fine with the change, but maybe we can include it in the Rapporteur’s CR. |
| Nokia | Agree but no merge to rapporteur CR proposed by Nokia | The change is not an editorial change really but a change of meaning. Would not prefer to put the CR to rapporteur CR as the basic understanding seems to have been incorrect. |
| MediaTek | No strong view | We do not really see the difference on UE behaviour. Anyway, the UE follow NW instruction on key refresh. With or without this change, the NW could update the key whenever it want.  However, indeed key refresh does not solve COUNT wrap around. So, okay to have this change. |
| CATT | No strong view | Same view as MTK. No essential change actually. |
| Huawei, HiSilicon | No strong view | We think it is not a functional change, as there is no confusion in current spec to implementation, but it is more like a little flaw of clarification.  If it is fine to majorities, we are ok to merge it into the Rapporteur CR. |
| ZTE | Agree | We are fine with the change, and ok to merge it into the Rapporteur CR. |
| Intel | No strong view | The proposed changes only impact guidance to the network, which is already clear elsewhere in SA3 specs. We don’t see this as an essential change but OK if others find it useful. |
| vivo | Agree | We are fine to have this change. |
| Samsung | Disagree | We have some sympathy with the intention but the current text seems fine.  Our understanding is that COUNT wrap around can imply COUNT reuse with the same security key.  If the majority are sensitive to the use of “COUNT wrap around” and prefer to have “COUNT reuse”, then we can clarify it further, e.g. replace it with “reuse of the *COUNT* with the same RB identity and with the same key” since COUNT reuse itself has no problem if the security key is updated. |

**Proposed conclusion:**

TBD

## 2.4 On Presence Condition of securityConfig

Companies are invited to provide their views/comments on the following CRs in the following table.

R2-2006993‎ Correction on Presence Condition of securityConfig CATT CR Rel-15‎ ‎38.331‎ ‎15.10.0‎ ‎1761‎ ‎-‎ F NR\_newRAT-Core

R2-2006994‎ Correction on Presence Condition of securityConfig CATT CR Rel-16‎ ‎38.331‎ ‎16.1.0‎ ‎1762‎ ‎-‎ F NR\_newRAT-Core

**Table 4**

|  |  |  |
| --- | --- | --- |
| Company Name | Views:  Agree as is; Agree with changes; Disagree | Comments |
| Qcom | Agree | current spec is ambiguous from ASN1 when the parent securityConfig IE was to be included. with the proposed change, the parent IE is now mandated for RB add/termination point change, along with child IEs. |
| Ericsson | Disagree | We believe that network implementation can solve it as is quite straightforward that if a child IE should be present, also his parent IE should be obvisously present. According to this, we do not want to have this NBC at this stage. |
| Nokia | Disagree | Cannot understand what is the real problem caused by the ASN.1 as of today. Then the change in itself is NBC and not acceptable as Ericsson says at late stage of implementation. |
| MediaTek | Agree | 38.331 6.1.2 specifies that  “For downlink messages, the need codes, conditions and ASN.1 defaults specified for a particular (child) field only apply in case the (parent) field including the particular field is present”  It is in general a little bit confused whether to do with parent IE while the child IE is mandatory present. The clause in 6.1.2 is not taken into account properly when presence conditions for nested IE's / fields are specified. In this particaulr case of security configuration, we think that the original intention is that parenet IE should also present. So, we think the CR is correct.  We don’t understand why some companies claim that it is NBC. It seems that current implementation is that, -- “if a child IE should be present, also his parent IE should be obvisously present”. This is aligned with the intention of the CR. So, the CR should be acceptable.  In addition, R16 CR should be Cat “A” unless it is not a mirror CR. |
| CATT | Agree | To Ericsson:  In our understanding, this CR is consistent with the intention why we specified these conditions, So it is backward compatible. The purpose of this CR is only for clarification.  To Nokia:  According to the current version of TS 38.331 (please note the section 6.1.2), there are no explicit words to prevent a gNB from sending a *RRCReconfiguration* message which indicates to add a DRB, but without providing the *securityConfig* field, nor providing its two child fields. Such message contradicts with our purpose that we must provide the two child fields within the corresponding *RadioBearerConfig* whenever we setup a DRB, may be seen from the UE as an invalid message, and thus causes RLF. It should be fixed.  To MediaTek: Yes the Rel-16 CR should be Cat “A”. |
| Huawei, HiSilicon | Agree | Agree with MediaTek’s observation, the conditions to child fields only apply when the parent field is configured and cannot be used as the condition of the parent field.  There was some confusion previously, and given that there is still some confusion now, we agree that it would be better to clarify. |
| ZTE | Disagree | We agree that current spec says the condition of child fields only apply when the parent field is configured.  But in current ASN.1, we have so many conditions describing in which cases a field should be mandatory present, but without declaring the same thing in parent field.  For instance, the *reconfigurationWithSync* field in *SpCellConfig*, currently the condition defines several cases that *reconfigurationWithSync* field should be mandatory present. But for the parent field “spCellConfig” in CellGroupConfig, it simply uses “OPTIONAL, Need -M”.  If we follow the CR’s principle, then the condition of reconfigurationWithSync field should also be added to the parent IE “spCellConfig”.  We believe network implemetation can solve it as it is quite straightforward. If this needs to be changed, then several CRs can be provided in the future to modify other places. |
| Intel | Disagree | We have discussed this few times before. The confusion always comes from the sentence “For downlink messages, the need codes, conditions and ASN.1 defaults specified for a particular (child) field only apply in case the (parent) field including the particular field is present”. The previous conclusion has been that word “condition” in that sentence is misleading and we should consider to remove it.  The use of conditions in NR RRC are guidance on when network has to configure the field. It does not trigger any error handling.  When a child field should be included based on the condition, the parent field should be included.  We can’t possibly add a condition for every parent field that has a condition in child field. If we make this change based on the arguments provided, we should be checking all the fields and follow the same for consistency – which seems not so useful to do. |
| vivo | Disagree | The current spec has specified that “For downlink messages, the need codes, conditions and ASN.1 defaults specified for a particular (child) field only apply in case the (parent) field including the particular field is present”. Considering that smart NW can avoid some bad configuration, the change in ASN.1 may not be needed. In addition, the proposed change may add new confusion and reduce the readability of the specification asthe new added “*RBTermChange2* and “*RBTermChange1*” have similar explanation. |
| Samsung | Disagree | Agree to the intention but it seems straightforward that the parent IE should be present if its child IE should be present.  We are reluctant to change this at this late time since no critical problem would be foreseen. |
|  |  |  |

**Proposed conclusion:**

TBD

# 3 Conclusion

TBD

# 4 References

[1] R2-111e Chair Notes 2020-08-17 1000 UTC.docx