3GPP TSG-RAN WG2 #121bis-e Tdoc R2-23xxxxx

Electronic meeting, Apr 17th – 26th, 2023

Agenda Item: 5.1.3.1

Source: Ericsson

Title: [AT121bis-e][002][NR1516] RRC 1

Document for: Discussion, Decission

# 1 Introduction

The following document summarizes the following email discussion:

* [AT121bis-e][002][NR1516] RRC 1 (Ericsson)

 Scope: Treat [R2-2303635](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303635.zip), [R2-2303636](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303636.zip), [R2-2303282](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303282.zip), [R2-2303283](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303283.zip), [R2-2303284](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303284.zip), [R2-2303285](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303285.zip), [R2-2302881](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2302881.zip), [R2-2302882](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2302882.zip), [R2-2304093](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2304093.zip), [R2-2304094](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2304094.zip), [R2-2304095](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2304095.zip)
Ph1: Determine agreeable parts. Ph2: For agreeable parts, if any, reflect these in agreeable CRs.

 Intended outcome: Report, If applicable: In-Principle-Agreed CRs

 Deadline: Schedule 1

Discussions with Deadline Schedule 1:

A first round with **Deadline W1 Thursday April 21th 1200 UTC** to settle scope what is agreeable etc

A Final round with Final deadline W2 Wednesday April 26th 1000 UTC (EOM) to settle details / agree CRs etc.

Companies are invited to fill in contact details.

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| --- | --- |
| **Company** | **Contact details** |
| Ericsson | hakan.l.palm@ericsson.com |
| Qualcomm Inc | mambriss@qti.qualcomm.com  |
| MediaTek | chun-fan.tsai@mediatek.com |
| Xiaomi  | Wangshukun3@xiaomi.com |
| OPPO | shicong@oppo.com |
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|  |  |

# 2 Discussion

## 2.1 SIB and PosSIB mappings to SI message

high level decision done at previous meeting – Discussion on CRs was postponed

[R2-2303635](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303635.zip) SIB and PosSIB mappings to SI message Ericsson, MediaTek Inc. CR Rel-16 38.331 16.12.0 3895 1 F NR\_newRAT-Core, NR\_pos-Core [R2-2301452](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2301452.zip)

[R2-2303636](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303636.zip) SIB and PosSIB mappings to SI message Ericsson, MediaTek Inc. CR Rel-17 38.331 17.4.0 3894 1 F NR\_newRAT-Core, NR\_pos-Core [R2-2301451](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2301451.zip)

**Q1. Do companies agree with the intention and need of the CRs above?**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Ericsson (proponent) | Yes |  |
| Qualcomm Inc | Yes | Changes are aligned with our understanding. |
| MediaTek | Yes | We co-sing the CR |
| Xiaomi  | Yes  |  |
| OPPO | Yes |  |
| ZTE | Yes |  |
| Lenovo | Yes |  |
| Nokia, Nokia Shanghai Bell | No | Some of the changes are touching text that has been there since (at least) LTE Rel-8 – so what exactly is the ambiguity there? The cover page seems to imply these are editorial, without telling any good reasons. Comments to the exact changes:1. Clarified that “SIBs and posSIBs are mapped to the different SI messages” means that an SI message contains either only SIBs or only posSIBs.
* Why is this ambiguous? The existing text already says they are mapped to different messages, so what is the possible erroneous reading here?
1. Clarified that SI messages transmitted within one SI-window have the same content.
* This text is almost word to word the same as has been there since LTE Rel-8 (see below for excerpt from 36.331 v8.21.0, clause 5.2.1.2) – why is this a problem now? What exactly is the possible misinterpretation and why is it different in LTE and NR?

*Each SI message is associated with a SI-window and the SI-windows of different SI messages do not overlap. That is, within one SI-window only the corresponding SI is transmitted. The length of the SI-window is common for all SI messages, and is configurable. Within the SI-window, the corresponding SI message can be transmitted a number of times in any subframe other than MBSFN subframes, uplink subframes in TDD, and subframe #5 of radio frames for which SFN mod 2 = 0.*Also note that this may have some ambiguity with the change 5 (see below)1. Clarified that each SIBs and each PosSIB (with and without GNSS Generic Assistance Data) are mapped to a single SI message.
* The proposed text uses „mapped“, and we don’t understand why that is better than the existing „contained“. Let’s not change the wordings unless there is a clear problem.
1. Clarified that posSIBs of same *posSibType* carrying GNSS Generic Assistance Data for different GNSS/SBAS (identified by *gnss-id/sbas-id*, see TS 37.355 [49]), are mapped to different SI messages.
* Fine to add the reference to 37.355.
1. Added currently missing text that segmented SIBs/PosSIBs are contained in consecutive transmissions of the SI message according to the SI message periodicity.
* Does this now mean that different segments can be sent within the same SI-window? That was not the understanding we had based on RAN2#121, so we don’t really see the value of this as it might add more ambiguity.
 |
| Apple | Yes  | We are fine to improve the text for better readability.For the “mapped vs contained“ issue raised by Nokia for change 3, we have no strong view. Either is fine.For Change 5, our understanding is that segments of the same SIB are transmitted in consecutive SI transmissions according to SI periodicity, not in the same SI window. So, the newly added sentence is correct. |

**Q2. If “yes” on Q2.1, please provide detailed comments on the CR.**

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| **Company** | **Comments** |
| Ericsson (proponent) | Rel-17 CR should be Cat A (error at tdoc allocation, CR cover page is correct). |
| Lenovo | Change 5 below has been implemented differently in R16/R17.*5. Added currently missing text that segmented SIBs/PosSIBs are contained in consecutive transmissions of the SI message according to the SI message periodicity.** In R16:
	+ *For SIBs and posSIB that are segmented, the segments are contained in consecutive transmissions of the SI message, according to the SI message periodicity.*
* In R17:
	+ *For SIBs and posSIBs with segments, the segments are contained in SI messages transmitted according to the SI message periodicity, with one segment of a particular sibType/posSibType in each SI message;*

To us the R17 version looks better and should be adopted in R16 as well. In this context the text can be improved, see below.*For SIBs and posSIBs with segments, the segments ~~are~~ contained in SI messages are transmitted according to the SI message periodicity, with at most one segment of a particular sibType/posSibType in each SI message;* |
| Nokia, Nokia Shanghai Bell | See above – If anything is needed, we should aim to do minimal changes, i.e. probably at most change 4. Also, since this CR claims it has no inter-operability problems, we would like to understand why this is needed: The reason for change is very much lacking in this detail, so for any change we do, we would like to understand why there is any ambiguity.Cover page is also missing (“No”) ticks for “Other specs affected” |
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## 2.2 drb-ContinueROHC

[R2-2303282](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303282.zip) Clarification on drb-ContinueROHC ZTE Corporation, Sanechips discussion Rel-15 NR\_newRAT-Core

In this contribution, the followong proposals and observations are made:
**Observation 1:** Based on current specification, when drb-ContinueROHC field is included, the UE shall continue ROHC during PDCP re-establishment, otherwise, the UE shall reset ROHC.
**Observation 2:** If drb-ContinueROHC was signalled before, but the network does not include the parent Need M IE pdcp-Config in follow up RRC message, the UE behaviors are different.
**Observation 3:** Based on the definition of Need N, the UE does not store the Need N field.
**Observation 4:** There are other examples in 38.331 that when parent Need M IE is not included, its child Need N field will be treated as “not present”.
**Proposal 1:** RAN2 confirms that during PDCP re-establishment, when pdcp-Config is not included and Need M works, the child Need N IE drb-ContinueROHC is treated as “not present” and the UE shall reset ROHC protocol (i.e. the UE does not store the drb-ContinueROHC field for future use).

[R2-2303283](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303283.zip) Clarification on handling of Need N fields ZTE Corporation, Sanechips CR Rel-15 38.331 15.21.0 4002 - F NR\_newRAT-Core

[R2-2303284](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303284.zip) Clarification on handling of Need N fields ZTE Corporation, Sanechips CR Rel-16 38.331 16.12.0 4003 - A NR\_newRAT-Core

[R2-2303285](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303285.zip) Clarification on handling of Need N fields ZTE Corporation, Sanechips CR Rel-17 38.331 17.4.0 4004 - A NR\_newRAT-Core

**Q3. Do companies agree with P1 in** [R2-2303282](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2303282.zip)**?**

**Proposal 1:** RAN2 confirms that during PDCP re-establishment, when pdcp-Config is not included and Need M works, the child Need N IE drb-ContinueROHC is treated as “not present” and the UE shall reset ROHC protocol (i.e. the UE does not store the drb-ContinueROHC field for future use).

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| **Company** | **Yes/No** | **Comments** |
| Ericsson | Yes | It is clear that Need N field is one-shot and not memorized by UE. |
| Qualcomm Inc | No |  it’s a clear violation to the 38.331 spec section 6.1.2***For downlink RRC message and sidelink PC5 RRC 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. Thus, if the parent is absent the UE shall not release the field unless the absence of the parent field implies that.***Since the Parent IE (pdcp-Config) is not present to consider the Need Code of the Child IE, nor the absence of the parent IE does imply the release (as it’s a Need M), therefore considering the Child IE and its Need Code by releasing it, is considered against the behaviour described above in the spec.  |
| MediaTek | Yes | By definition, Need N for one-shot behavior.Also in this particular case, there is procedure text saying that the UE only indicating “*drb-ContinueROHC* is configured” to PDCP if *drb-ContinueROHC* is included. PDCP entity shall NOT continue ROHC if this field is not present. 1> for each *drb-Identity* value included in the *drb-ToAddModList* that is part of the current UE configuration and not configured as DAPS bearer:2> if the *reestablishPDCP* is set:3> [Skip unrelated part]3> if *drb-ContinueROHC* is included in *pdcp-Config*:                               4> indicate to lower layer that *drb-ContinueROHC* is configured; |
| Xiaomi  | Yes  | For need N code, it is one-short and is not stored.If network wang to use this filed, the network should indicate again. It makes sense that the delta configuration filed only apply to the stored fields. |
| OPPO | Yes |  |
| ZTE | Yes | Proponent.According to the definition of Need N, the field is not stored by the UE.*No action* (one-shot configuration that is not maintained)Used for (configuration) fields that are not stored and whose presence causes a one-time action by the UE. Upon receiving message with the field absent, the UE takes no action.So in case the parent IE(Need M) is not present, in theory, the UE should not remember what the previous value was and take actions. If we change this principle, it will cause problems to many other Need N fields. |
| Lenovo | Yes | This is implied by the definition of Need N. |
| Nokia, Nokia Shanghai Bell | Yes (see comments) | As Qualcomm states, this is a case for the parent-child handling of need codes: If the parent ios absent, the child need codes are not checked.Then this seems rather clear in 38.323 already: If the field is not configured then ROHC is reset. So we don’t see any need for a CR here – Need N is not stored according to definition. |
| Apple | Yes | In our understanding "Action 1" is the right interpretation. Need-N is for one-shot and it takes precedence over Need-M. So, the clarification in Proposal 1 looks correct. |

**Q4. Do companies agree with the intention and need of the CRs above?**

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| **Company** | **Yes/No** | **Comments** |
| Ericsson | Maybe | A CR is not essentially needed, since already clear (see above). If anyway RAN2 thinks this need clarification in Guidelines, see below for comments.The change should be captured in a 38331 Rapp CR of non-controversial changes. |
| Qualcomm  | No | . |
| MediaTek | Maybe | Current SPEC already implies the behavior proposed by P1. No strong need to have this CR or not. |
| Xiaomi  | Yes  | It makes the spec more clear and can be captured in Rapp CR. |
| OPPO | Maybe | We agree with Ericsson, if companies agree a clarification is needed, we’re ok to capture it in the rapp-CR. |
| ZTE | Yes | We think CR is needed especially if companies have different understandings.We don’t have strong view on individual CR or rapporteur CR as long as the spec is clarified. |
| Lenovo | No | We don’t see the stringent need to further clarify the handling of Need N fields. |
| Nokia, Nokia Shanghai Bell | No | The current specification already makes this clear: We don’t see the problem in this specific case. |
| Apple | Not necessarily | In general, to initiate a definition update of the Need Code itself may be a bit strong, as this will impact not just *drb-ContinueROHC* but a lot other variables and places in the ASN.1 code. On the other hand, Need N is indeed not part of the ASN.1 sketch in clause 6.1.2 - and it’s only an example. Updating the Rel-15 spec at this late stage may still bear a risk. We are OK to keep it as is, even though not strongly against adding an example. |

**Q5. If “yes” on Q3, please provide detailed comments on the CRs.**

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| **Company** | **Comments** |
| Ericsson | Ok to add new Need N field in example, but simplify the text e.g. as- if *field1* in *RRCMessage-IEs* is absent, UE does not modify or take any action on child fields configured within *field1* (regardless of their need codes); |
| MediaTek | Ericsson wording is okay for us |
| ZTE | We think the wording in CR is clearer. For Ericsson’s proposal, we are not sure if there is misunderstanding on the handling of child Need M fields (as the UE needs to maintain those configuration, not completely no action). If not, we are fine with Ericsson’s proposal. |
| Nokia, Nokia Shanghai Bell | The proposed CR text is not wrong but as this is already handled by the parent-child need code handling, we don’t see the urgent need to add it. |

## 2.3 RLC-Config

[R2-2302881](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2302881.zip) Correction on Need code of IE RLC-Config Intel Corporation CR Rel-16 38.331 16.12.0 3969 - F NR\_IIOT-Core

[R2-2302882](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2302882.zip) Correction on Need code of IE RLC-Config Intel Corporation CR Rel-17 38.331 17.4.0 3970 - F NR\_IIOT-Core, NR\_NTN\_solutions-Core

**Q6. Do companies agree with the intention and need of the CRs above?**

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| **Company** | **Yes/No** | **Comments** |
| Ericsson | Yes | We agree the Need N should have been Need R, and are fine to change to this.One could expect that networks always include t-StatusProhibit-v1610 when a value from this range is used (since not clear that UE keeps the value, if rlc-Config-v1610 is included). |
| Qualcomm Inc | Yes | CR seems aligned with the previous agreement  |
| MediaTek | See comment | The inter-operability analysis is not so correct, if UE implemented this as “Need M”, there may be some inter-operability issue. We can change to Need R, but prefer also saying “networks always include *t-StatusProhibit-v1610* when a value from this range is used” as commented by Ericsson.In this case, Need R or Need M does not make too much difference but anyway better to change Need N. |
| Xiaomi  | Yes  | it is fine and the change is aligned with previous agreements. But I wonder whether there is CB issue at this time point? |
| OPPO | Yes |  |
| ZTE | Yes |  |
| Lenovo | Yes |  |
| Nokia, Nokia Shanghai Bell | Yes but | This is similar issue as for the *secondaryDRX*, for which we had an email discussion until this meeting. Obviously the intent is right (as it was already spotted in Rel-16 ASN.1 review!), but now we need to consider what to do for it.By definition, Need N fields are not stored (unless they effect some form of “state change” in the UE), so the field interpretation as Need M would be wrong. The question is mainly what fixing this issue now means – we assume that if we agree to the CR, then we should make it clear that all networks and UEs implementing the extension shall also implement this CR. |
| Apple | Yes |  |

**Q7. If “yes” on Q3, please provide detailed comments on the CR.**

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| **Company** | **Comments** |
| Ericsson | See above. If change from Need N to Need R is not acceptable in RAN2, we should describe the expected nw workaround as above (networks always include t-StatusProhibit-v1610 when a value from this range is used). Then, change to Need M or Need R does not matter. t-StatusProhibit-v1610 can be released thanks to the Need R on rlc-Config-v1610. |
| Lenovo | With regards to the 2nd change in the R17 CR („Change the Need code of t-ReassemblyExt-r17 to Need R“), the CR cover page can be improved by saying that these issues were already discussed during R17 ASN.1 review (X606, X607) and agreed in RAN2#118-e, NTN session. However, it was missed to implement the changes in TS 38.331 V17.1.0. |
| Nokia, Nokia Shanghai Bell | If we want to be backward-compatible, we should take similar approach as was done for the secondaryDRX issue. Otherwise, as Ericsson states, we have functionally NBC CR and have to state all UEs and networks have to implement it. |
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## 2.4 Coreset0 for PSCell

[R2-2304093](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2304093.zip) Clarification on presence of Coreset0 for PSCell Ericsson CR Rel-15 38.331 15.21.0 4054 - F NR\_newRAT-Core

[R2-2304094](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2304094.zip) Clarification on presence of Coreset0 for PSCell Ericsson CR Rel-16 38.331 16.12.0 4055 - A NR\_newRAT-Core

[R2-2304095](http://www.3gpp.org/ftp//tsg_ran/WG2_RL2/TSGR2_121/Docs//R2-2304095.zip) Clarification on presence of Coreset0 for PSCell Ericsson CR Rel-17 38.331 17.4.0 4056 - A NR\_newRAT-Core

**Q8. Do companies agree with the intention and need of the CRs above?**

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| **Company** | **Yes/No** | **Comments** |
| Ericsson (proposent) | Yes |  |
| Qualcomm Inc  | Yes |  |
| MediaTek | Maybe | Fine to have this CR although we think the agreement in previous meeting is enough |
| Xiaomi  | Yes  |  |
| OPPO | Yes |  |
| ZTE | No | We understand the intention of CR, but we think it is already captured in the current spec.The meaning of kSSB value (ssb-SubcarrierOffset) is shown in below table:

|  |  |  |
| --- | --- | --- |
| Frequency | Case1: Coreset0 of SIB1 is present | Coreset0 of SIB1 is not present |
| Case2: next CD-SSB is indicated  | Case3: no CD-SSB is indicated |
| FR1 | kSSB ≤ 23 | 24≤ kSSB ≤ 29 | kSSB = 31 |
| FR2 | kSSB ≤ 11 | 12≤ kSSB ≤ 13 | kSSB = 15 |

When we say CORESET0 is broadcast in MIB (i.e. ssb-SubcarrierOffset indicates the location of RMSI), it means SIB1 is broadcast (the second column), in this case, the blue sentence of the condition applies, so for PSCell, the network shall provide the field in ServingCellConfigCommon (not commonSIB, so it is sent via dedicated signalling).For the modified sentence, it is not relevant to this scenario, it is for the case when CORESET#0 is not broadcast in SIB1, but network can still configure CORSET#0 in RRC\_CONNECTED so that CORESET#0 can be associated with search spaces configured in overlapping dedicated BWPs.

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| Conditional Presence | Explanation |
| *InitialBWP-Only* | If *SIB1* is broadcast the field is mandatory present in the *PDCCH-ConfigCommon* of the initial BWP (BWP#0) in *ServingCellConfigCommon*; it is absent in other BWPs and when sent in system information. If SIB1 is not broadcast and there is an SSB associated to the cell, the field is mandatory present for a PSCell and is optionally present otherwise, Need M, in the *PDCCH-ConfigCommon* of the initial BWP (BWP#0) in *ServingCellConfigCommon* (still with the same setting for all UEs). In other cases, the field is absent. |

 |
| Nokia, Nokia Shanghai Bell | No | The CR intent may be fine but the actual change is not correct: It is mandating CORESET#0 presence always for all PSCells! We agree it would be good to make the condition clear, but note that the sentence starts with this:“If SIB1 is not broadcast and there is an SSB associated to the cell,“ 🡪 This doesn’t yet tell there is CORESET#0 present in the PSCell – in fact it refers to NSA-only cell (without SIB1), which normally means CORESET#0 is NOT present in the cell, as indicated by field descriptions of *pdcch-ConfigSIB1* and *ssb-SubcarrierOffset* (see also 38.213, clause 13).We are not yet sure how to make the correction workable, so maybe we can take a timeout until May meeting to figure that out? |
| Apple | Ok to agree to the CR |  |

**Q9. If “yes” on Q3, please provide detailed comments on the CR.**

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| **Company** | **Yes/No** | **Comments** |
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Summary: TBD

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1. TBD

# Conclusion

The following is proposed as outcome of this email discussion.

[Proposal 1 TBD](#_Toc132639938)

# Appendix