3GPP TSG-RAN WG2 #111-e R2-20xxxxx

Electronic Meeting, 17th – 28th August 2020

Agenda Item: 6.1.1

Source: Ericsson

Title: [AT111-e][013][NR16] RRC Misc I

Document for: Discussion, Decision

# 1 Introduction

This document is to kick off the following email discussion:

* **[AT111-e][013][NR16] RRC Misc I (Ericsson)**

Scope: Treat [R2-2007641](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2007641.zip), [R2-2007642](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2007097.zip), [R2-2007020](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2007119.zip), R2-2006915, [R2-2008040](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2008040.zip), [R2-2008041](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2008041.zip), R2-2008109 (proponents to drive), include other corrections to be merged with R16 RRC rapporteur CR (if any)

Part 1: Decision whether to make corrections, identify agreeable parts.

Deadline: Aug 20, 0900 UTC.

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

Deadline: Aug 26, 0900 UTC.

# 2 Discussion

To make it easier to find the correct contact delegate in each company for potential follow-up questions, the rapporteur encourages the delegates who provide input to provide their contact information in this table:

|  |  |
| --- | --- |
| Company | Delegate contact |
| Nokia, Nokia Shanghai Bell | Tero Henttonen ([tero.henttonen@nokia.com](mailto:tero.henttonen@nokia.com)) |
| MediaTek | Nathan Tenny (nathan.tenny@mediatek.com) |
| Intel | Sudeep Palat (sudeep.k.palat@intel.com) |
| Qualcomm Incorporated | Masato Kitazoe (mkitazoe [at] qti.qualcomm.com |
| Huawei, HiSilicon | Yang Zhao (zhaoyang@huawei.com) |
| vivo | Wenjuan Pu (wenjuan.pu@vivo.com) |
| CATT | Jing Liang (liangjing@catt.cn) |
| Fujitsu | jiameiyi@cn.fujitsu.com |
| Ericsson | Håkan Palm L <hakan.l.palm@ericsson.com> |
| Samsung | Himke Vandervelde ([himke.vandervelde@samsung.com](mailto:himke.vandervelde@samsung.com)) |

Companies are requested to add their comments for each of the treated CRs of this email discussion in the boxes below (one for each CR to be treated).

### 2.1.1 ASN.1 Correction to maintain backwards compatibility

[R2-2007641](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2007641.zip) ASN.1 corrections to maintain backwards compatibility Ericsson, Nokia, Nokia Shanghai Bell, Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1869 - F TEI16

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Nokia, Nokia Shanghai Bell | Proponent | As the CR states, these were not noticed during CR implementation but break backward-compatibility with Rel-15 specifications. That’s why we think these are absolutely necessary and unfortunately there is no way to properly fix these except with NBC changes. |
| MediaTek | Yes | We agree these are clear bugfixes in the ASN.1. |
| Intel | Yes | Agree with the issue and provided solution. |
| Qualcomm Incorporated | Yes |  |
| Huawei, HiSilicon | Yes |  |
| vivo | Yes | We think these corrections are right and necessary. |
| CATT | Yes |  |
| Ericsson | Proponent,  Yes |  |
| Samsung | Yes | We assume cover page will be updated with sentence indicating changes are NBC |

### 2.1.2 Correction to DLInformationTransferMRDC and RRCReconfigurationComplete

[R2-2008109](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2008109.zip) Correction on DLInformationTransferMRDC and RRCReconfigurationComplete Samsung CR Rel-16 38.331 16.1.0 1989 - F LTE\_NR\_DC\_CA\_enh-Core Late

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Nokia, Nokia Shanghai Bell | Partly | We agree with the procedural text changes, but for the inter-node message we think it would be better to retain the existing structure and just limit that only one of the messages can be sent at a time in this release. That way it’s easier to extend this case if ever needed. |
| MediaTek | Partial | <1> For the first change in 5.3.5.3, I understand the deleted text is for the case that   * MCG failure occurs in (NG)EN-DC and fast recovery is triggered (while SRB3 is configured) * The NW send E-UTRAN RRC Connection Reconfiguration within *DLInformationTransferMRDC* via SRB3. This E-UTRAN RRC Connection Reconfiguration also embed NR RRC Reconfiguration message for SCG reconfiguration.   Then it will go this clause. So it seems that we should not deleted it.  <2> For the second change in 5.3.5.3, it seems correct but this is related to mobility and the WI code in the CR does not include NR\_Mob\_enh-Core. Also the change seems not related to the title. Perhaps better to move this change to other mobility CR ?  <3> For the change in ASN.1 code, we think it is reasonable to have a choose structure in *DLInformationTransferMRDC*. |
| Intel | Yes | No strong view on the choice structure. But note that previously, both the fields were optional. Now the dl-DCCH-Message-r16 is mandatory which could limit the extension possibility in a future release which may not include either of these choices. One solution if we keep the CHOICE is to make dl-DCCH-Message-r16 optional.  OK with the other changes. |
| Qualcomm Incorporated | Agree with the intention | NOTE 2 in the section 5.3.5.3 also mentions the case where RRCReconfiguration is received within DLInformationTransferMRDC via SRB3. This should also be corrected.  The added sentence for the change ‘3’ in the CR coversheet does not seem to make it limited to NR-DC case. |
| Huawei, HiSilicon | partly | For the first change, we agree with MTK’s comments, and we think this should not be simply removed but perhaps move to another place. We see R2-2006934 could be an option.  For the second change, not sure whether it is essential as the added condition is already included:the *conditionalReconfiguration* is included in *RRCReconfiguration* which is contained in *nr-SCG* for NR-DC. |
| vivo | Partial | * For the first change in 5.3.5.3. it is not correct：   We agree with MediaTek, the deleted text is for SCG reconfiguration delivered within DLInformationTransferMRDC. And the other case (SCG reconfiguration delivered not within *DLInformationTransferMRDC*) can be found in the specification as following:  2> else (*RRCReconfiguration* was received via SRB3) but not within *DLInformationTransferMRDC*:  And similar SCG reconfiguring can be found in 5.3.5.3 for NR-DC as following:  1> else if the *RRCReconfiguration* message was received via SRB3 (UE in NR-DC):  2> if the *RRCReconfiguration* message was received within *DLInformationTransferMRDC*:  3> if the *RRCReconfiguration* message was received within the *nr-SCG* within *mrdc-SecondaryCellGroup* (NR SCG RRC Reconfiguration):  Hence, we think the first change in 5.3.5.3 is not needed.   * We agree with the second change in 5.3.5.3.   For the third change, we agree with intel and prefer to make dl-DCCH-Message-r16 optional for future extension. |
| CATT | Partly | No strong view on the choice structure, but it may be possible to also carry NR Reconfiguration message for some NR parameter change together with the E-UTRA Reconfiguration message.  In (NG)EN-DC, *RRCReconfiguration* can be received within *DLInformationTransferMRDC* via SRB3, see Note2 in 5.3.5.3. So the second change is not needed.   * No strong view on the third change. |
|  |  |  |
| Ericsson (Tony) | Partly | Procedural text change are okay.  However we prefer to not touch the ASN.1 and we do not agree with the last proposed change. We have exactly the same structure in the ULInformationTransferMRDC message and we do not see why we should have something different fort he DL message. |
| Samsung (Seungbeom) | Partly | 1st correction: We agree on MTK's 1st comment, which says we should keep the condition as it is. We didn't consider the case when submitting the CR.  2nd correction: Given Qualcomm's comment, it would be better to limit the new condition to NR-DC case as follows:  *if the RRCReconfiguration message was received via SRB1 within the condRRCReconfig within the conditionalReconfiguration* ***(UE in NR-DC, conditionalReconfiguration was received in RRCReconfiguration via SRB1):***  3rd correction: We agree choice format may have been nicer, but we think this is merely nice to have improvement. We in general prefer to avoid NBC for such cases |

### 2.1.3 Remaining ASN.1 review issues

[R2-2007642](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2007642.zip) Remaining ASN.1 review issues Ericsson CR Rel-16 38.331 16.1.0 1870 - F NR\_eMIMO-Core, TEI16

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Nokia, Nokia Shanghai Bell | Partly | The intent seems fine but the language for the field description change for the PL resources is not:  For the " *If this field is not configured,...* ***should be no more than 4***", it’s unclear what the text means as it’s not a requirement: Better use e.g. "*If this field is not configured,* ***network does not configure more than 4 RS resources for the pathloss estimates in PUCCH, PUSCH, or SRS configurations***". And even here it’s not clear if this is 4 for each configuration or 4 in total over all of the PUCCH/PUSCH/SRS configurations – we understood it to be 4 each, but would like to verify everyone has the same understanding. |
| MediaTek | Partly | We agree with Nokia’s comment that it’s better to have a clear “network does not configure“ statement.  Our reading of the RAN1 agreement is that 4 is the *total* number, based on the wording of the decision from RAN1#99 (as quoted in R1-2001260, red highlighting added):  **Agreement (RRC impact)@RAN1#99**  On power control for PUSCH, PUCCH, and SRS, the total number of maximum configurable pathloss RSs, in including those supported in Rel-15, by RRC is 64   * Note: Such pathloss reference signals are for configuration purpose only, and UE is still only required to track up to 4 pathloss RSs for any PUSCH, PUCCH, and SRS transmissions.   + “Up to 4 pathloss RSs” applies the total number of pathloss RSs for PUSCH, PUCCH, and SRS   By the way, this field name totally ignores the hyphenation rules and should be “enablePRLS-UpdateForPUSCH-SRS”. It seems like we could fix the field name while we’re fixing the description. |
| Intel | Yes, but | Agree with Nokia comment on “network does not configure...” |
| Qualcomm Incorporated | Yes | ASN.1 part of the CR should be landscape orientation.  It is our understanding that the network can configure up to 4 pathloss estimation RSs **in total** for PUCCH, PUSCH, and SRS.  Here is RAN1 agreement text.  **Agreement:**  **When the number of RRC configured PL RSs for pathloss estimates for PUCCH, PUSCH and SRS is greater than 4**, UE is not required to track the RSs which are not activated by MAC-CE.   1. Note: How to capture above into the spec will be discussed at RAN1#100bis. 2. Note: Further consider the configuration cases when the default PL RS is not enabled or enabled.   Conclusion:  If MAC-CE based PL RS activation/update is not enabled, UE is not expected to be configured with more than 4 PL RS. |
| Huawei, HiSilicon | Yes | The principle is OK. There is misalignment on the ASN.1 field and field description, like enablePLRSupdateForPUSCHSRS, two “-” are missing. Seems enableDefaultBeamPlForPUSCH0\_0, enableDefaultBeamPlForPUCCH, enableDefaultBeamPlForSRS have similar problem. |
| vivo | Yes | Agree with Nokia comment. |
| CATT | Yes | The principle is OK. And we agree with Nokia comment on “network does not configure...” |
| Ericsson | Yes | We agree that Nokia proposal on text enhancement should be done.  We are still investigating with RAN1 colleagues, we have to ensure we capture correct understanding correctly.  Editorials on field names should be fixed. |
| Samsung | Partly | Agree with Nokia. It could be worded better e.g. 'If the field is not configured, network configures at most 4 RS resources for pathloss estimates .. |
|  |  |  |

### 2.1.4 Conditional presence of *si-RequestConfigSUL*

[R2-2007020](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2007020.zip) Clarification on the presence of the field *si-RequestConfigSUL* Fujitsu CR Rel-16 38.331 16.1.0 1772 - F NR\_newRAT-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Nokia, Nokia Shanghai Bell | Yes | Seems better to refer to the actual field names. Italicization should be added to *supplementaryUplink* and *servingCellConfigCommon*, though. |
| MediaTek | No | We think the existing description is clear enough and don’t really see the need for a change. However, if something is needed, wouldn’t it also be needed in Rel-15? |
| Intel | Yes | It is useful to correct this though it may not be that essential. |
| Qualcomm Incorporated | Yes |  |
| Huawei, HiSilicon | Yes | Same view as Intel. |
| vivo | Yes | We agree with the intention, but we think the *supplementaryUplink* in the proposed text should be *supplementaryUplinkConfig*. |
| CATT | No | The change seems has the same meaning as “serving cell is configured with a supplementary uplink”. It is a cell specific downlink configuration within system information. |
| Fujitsu | Proponent | On the comment from CATT:   * In section 5.2.2.4.2, it is specified that UE considers supplementary uplink as configured in the serving cell if a cell specific downlink configuration is present within system information, and if the SUL band indicated in this configuration can be supported by the UE based on the UE capability * In our understanding, if “serving cell is configured with a supplementary uplink” is used in a presence condition, the network will check whether the configuration is provided to the UE and whether the UE can support the configuration. Meanwhile, the network only check whether the configuration is provided to the UE if the change is agreed. |
| Ericsson (Rapporteur) | Maybe | I agree with CATT that that the change has same meaning as the original text.  Also I agree with Vivo comment that supplementaryUplink should be *supplementaryUplinkConfig.*  If we agree on this change (I am ok if majority view), then also Rel-15 should be changed, and we can have the change in the Rapporeur’s CR. |
| Samsung | Yes | Fine for the change but it is minor so it would be better to be merged into the Rapporteur CR. |

### 2.1.5 Extension scenarios for ToAddMod lists

[R2-2006915](file:///D:/Documents/3GPP/tsg_ran/WG2/TSGR2_111-e/Docs/R2-2006915.zip) Extension scenarios for ToAddMod lists MediaTek Inc. discussion Rel-16 NR\_newRAT-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Nokia, Nokia Shanghai Bell | Yes | The explanations and discussion in this document are very good and we agree with the intent fully. We also have two additional points for consideration:   * If we were to retain the critical extension for list, it is possible that the same ToReleaseList may be usable for entries configure by either ToAddModList, which can cause confusion. This has been discussed also earlier (see [R2-1811179](http://3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_103/Docs/R2-1811179.zip)) * The consequence of using NCE extensions is also that in general, ToAddMod-list entries should (typically) allow extendibility via ellipsis. While we understand this is always a case-by-case consideration, the guidelines could also incorporate suggestion on that (while also mentioning that for size-critical cases this is not always desirable and other mechanisms can be also used). This is primarily to ensure extendibility is not forgotten when creating new ToAddMod-list entries. |
| MediaTek | Proponent | On the comments from Nokia:   * The confusing use of the ToRelease list seems difficult to avoid without artificial restrictions (e.g. always defining a new ToRelease list even if not functionally needed). We tend to think this could be clarified in field descriptions in the (hopefully rare) case that the critical extension mechanism is used. * The point on extensible ToAddModList entries seems sound and a description could be added to section A.4.3.x in the TP.   Some additional comments were received offline, including that the proposed nomenclature is not aligned with what we have used in LTE (where the „Ext“ suffix is used to extend the number of entries in a list). We tend to think that it’s simplest to keep consistent practices with what we have done already in 38.331, but a different naming convention could be discussed (and then we would need to make a pass through the existing cases to adjust names, remembering that name changes are backward compatible).  The use of the word „deprecate“ was also questioned as being possibly too strong, and we would be willing to soften it to „discourage“ if companies prefer this.  Extensions in multiple releases (e.g. extending the list size in one release and adding fields in a later release) seem like they will always be challenging to maintain cleanly. However, we haven’t found a good way to describe this case, and it is difficult to prepare for in individual cases, since by definition we don’t know when it will happen. |
| Intel | Yes | Agree in general with the proposals and TP. Some minor comments:  We agree that “deprecate" is too strong as we may need to use it in some exceptional cases.  The additional overhead from use of the extension marker for the list elements could be a concern. |
| Huawei, HiSilicon | Yes in principle | We are fine with P1/P2/P3/P6.  Regarding P4, the wording is a bit unclear, does it mean it is switched from the extended list to the original list, and “explicitly release the contents” means the network shall use ToReleaselist or not? For some configuration like BWP, it could be deleted and re-added as well. We suggest to improve the wording as "The network does not include xxxToAddModList-rN (respectively xxxToAddModList without suffix) in this <IE name, e..BWP, serving cell, etc> as long as there are Xxx's configured in this <IE name> using xxxToAddModList without suffix (respectively xxxToAddModList-rN)”.  Regarding P5, we think it is better to clarify that either the field description contains the full UE requirement, even it is duplicated from the Annex; or we move this part from the Annex A to a normative section as a UE requirement, and field description does not need to repeat and could refer to that part. |
| vivo | Yes |  |
| CATT | Yes | It is a set of rules to extend the toAddModList for different cases, mostly focus on “without extension marker”, “size extension” and/or “field extension”. |
| Ericsson | Postpone | We appreciate this CR by MediaTek, and support the proposals and TP in principle.  As for now, we have some comments on the TP:   * Could number the examples for easier referencing them in the text * Just asking: Example 3 we do not use in Rel-16 38331? * One question on the ToReleaseLists in the last/3rd example: Is there really a need for the originalToReleaseListExt-rN list. Should not releasing an ID by any of the other ToRelease lists result to the complete liist item is released (and the ID is not in use any more)? Maybe the originalToReleaseList2-rN is the redundant list? * Typo: The elements of originalToReleaseList2-rN should be of type ListElementId-rN, not ListElementId. * Should the TP/Examples also show the IDs and their extensions in a more clear way. This caused some confusion in Rel-16.   Maybe agreeing the TP is not critical at this meeting and we could allow until next meeting for companies to discuss (so we propose email discussion until next meeting). |
| Samsung |  | We appreciate the effort to define a general guideline, hoping it will help to align future cases and avoid further inconsistencies. Some remarks:   * We agree NCE should be used by default * P4: We think that in general we need to clarify the UE requirements regarding switching between critical extension versions (in normative section). It would probably actually be best to start with a general clarification (i.e. for fields other than lists). We think that in LTE, the principle is as follows:   1. Upswitch (from Rel-N to Rel-N+M): Delta signaling is used i.e. if network wants to add some field introduced in later release, it can just signal this extension   2. Downswitch: Upon switch in reverse direction, full configuration is used (as legacy network does not support release of the later extension)   + We understand that what is proposed for lists deviates from a), but agree the proposal is simple and probably the only option available for critical versions of lists introduced in R16. Whether to generally adopt this for future cases may require further discussion given the overhead and deviation (but maybe acceptable if CE is rarely used for lists) * Extending list size and adding field for entries in NCE manner: We think that in LTE the general principle is as follows:   1. Add a parallel list for entries upto the R15 size limit for signalling the additional R16 fields   2. Add a further list for configuring the additional R16 entries using a new IE defining these additional entries (i.e. an R-16 version of the IE/ information structure defining the entry that covers covers R15 and R16 fields)   3. A further list for releasing the additional R16 entries (perhaps we only allow the additional R16 IDs i.e. PUCCH-SpatialRelationInfoId-v1620   We understand the proposal is that for NR we instead do the following:   1. Add a list for configuring the additional R16 entries using the same IE defining as used for the R15 entries 2. Add a parallel list for signalling the additional R16 fields, that covers both the entries of the original list as well as the additional entries introduced in R15   We note that normally when introducing a critical version of an message/ IE, we don’t just stick the new parameters at the end, but merge them somewhere at the appropriate location within the information structure. Although this may be cumbersome, it ensure that the information structure is properly maintained. We do not have a strong concern regarding this approach, but merely want to ensure we take a conscious decision..   * Nomenclature: we think the proposal again deviates from LTE principles, but understand this is done mainly to align with what is most commonly used in NR. Neverhteless, guideline should maybe reflect what we think is the desirable approach. Anyhow, LTE convention was as follows (and is most consistent with what we do for extension of non-list fields):   + ListExt-RN for the list containing additional entries (beyond original list size) as introduced in RN i.e. as in   + List-vNx for the parallel list to transfer additional fields i.e. as in 1) above   Perhaps it’s best to take some more time to develop these guidelines and the associated TP |

# Conclusion

In the previous sections we made the following observations:

Based on the discussion in the previous sections we propose the following:

# References

[1]