3GPP TSG-RAN WG2 Meeting #112 electronic R2-2010xxx

Online, November 2nd – 13th, 2020

Source: CATT

Title: Summary of [AT112-e][040][IIOT] RRC and UE cap Corrections

Agenda Item: 6.5.2

Document for: Discussion and Decision

# Introduction

This contribution provides a summary of the following email discussion:

* [AT112-e][040][IIOT] RRC and UE cap Corrections (CATT)

Scope: Treat tdocs in AI 6.5.2, and AI 6.5.5 (see below)

Intended outcome: Intermediate: Determine agreeable parts. Final: For agreeable parts, agreed CRs.

Deadline: Intermediate deadline(s) by Rapporteur, Final: Thu Nov 12, 1200 UTC

Short Deadline: UE Cap Endorsed CRs 38306 (if agreeable): Nov 6.

This email discussion addresses contributions [2][8]. [1] addresses the topic of UL skipping which is already covered by email discussion #16 and so is not treated in this offline.

In general the questions first discuss whether the raised issues are valid and require a CR, and then companies supporting fixing the issues are asked whether they support the proposed CR as is or would have an alternate CR.

The email discussion first addresses 38.306 CR which has a short deadline: Nov 6 24:00 UTC (Phase 1).

Then 38.331 CRs are discussed with Nov 9 24:00 UTC deadline, and which can be answered by companies in a 2nd phase.

**Contact from companies**

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# Discussion

# 38.306 CR (Nov 6 24:00 UTC deadline)

R2-2009376 Correction on the pre-requisite condition for dci-UL-PriorityIndicator-r16 Huawei, HiSilicon CR Rel-16 38.306 16.2.0 0426 - F NR\_IIOT-Core

This CR raises the issue that the RAN1-agreed dependency of the UL priority indication in DCI with mixed DCI formats capability (*dci-UL-PriorityIndicator-r16* = RAN1’s feature group 12-1a) on both “UL intra-UE multiplexing/prioritization of overlapping channel/signals with two priority levels in physical layer” (*dci-UL-PriorityIndicator-r16* = RAN1’s feature group 12-1) and “Monitoring DCI format 1\_2 and DCI format 0\_2” (*dci-Format1-2And0-2-r16* = RAN1’s feature group 11-1) is missing in TS 38.306.

| Definitions for parameters | Per | M | FDD-TDD  DIFF | FR1-FR2  DIFF |
| --- | --- | --- | --- | --- |
| ***dci-UL-PriorityIndicator-r16***  Indicates whether the UE supports the priority indicator field configured in DCI formats 0\_1 and 0\_2 in a BWP when configured to monitor both DCI formats 0\_1 and 0\_2 in the BWP. | UE | No | No | No |

**Q1a: Do you agree the dependency of *dci-UL-PriorityIndicator-r16* with *ul-IntraUE-Mux-r16* and *dci-Format1-2And0-2-r16* should be captured in its parameter definition?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | Yes |  |
| Samsung | Yes |  |
| Ericsson | Yes |  |
| Sharp | Yes |  |
| Nokia | Yes |  |
| LG | Yes |  |
| Huawei | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| MediaTek | Yes |  |
| vivo | Yes |  |
| Intel | Yes |  |
| Apple | Yes |  |
| Futurewei | Yes |  |

**Q1b: If you answered “Yes” to Q1a, do you also agree the CR? And if not, please propose an alternate TP.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
| CATT | Yes |  |
| Samsung | Yes |  |
|  |  |  |
| Ericsson | Yes for the content | We are fine with the changes in the proposed CR. Since there will be a Mega CR for capability (see [AT112-e][015][NR16] UE cap Main (Intel)), the agreed change should be merged into the Mega CR.  As a matter of fact, this paper should be submitted in AI 6.1.2 not in IIoT WI.  6.1.2 NR Feature Lists and UE capabilities  Includes NR UE capability updates related to R1 and R4 feature lists. Including [Post111-e][900][NR16] UE capabilites (Intel) |
| Sharp | Yes |  |
| Nokia | Yes | Agree with Ericsson this should be integrated into the Mega CR |
| LG | Yes | Agree with Ericsson |
| Huawei | Yes |  |
| OPPO | Yes | Agree with Ericsson |
| Xiaomi | Yes |  |
| ZTE | Yes | Agree with Ericsson |
| MediaTek | Yes | Agree with Ericsson |
| vivo | Yes |  |
| Intel | Yes | Agree that the CR should be merged into Mega CR. The draft CR should be endorsed in the IIoT session, and then it can be merged into Mega CR. |
| Apple | Yes |  |
| Futurewei | Yes |  |

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| **Summary:**  All companies agree with the CR and suggest it is included in the Mega CR for capability discussed in [AT112-e][015][NR16] UE cap Main (Intel).  **Proposal 1: The changes in the 38.306 CR in R2-2009376 are agreed and merged in the Mega CR for capability.** |

# 38.331 CRs (Nov 9 24:00 UTC deadline)

### Time aspects

R2-2008864 Clarification on referenceTimePreferenceReporting in RRC Reconfiguration Procedure CATT CR Rel-16 38.331 16.2.0 2021 - F NR\_IIOT-Core

This proposed CR addresses the functionality of UE reporting a preference in being provisioned with reference time information. It points out that the description of *referenceTimePreferenceReporting* in clause 5.3.5.9 “Other configuration” is missing, which makes the description of RRC reconfiguration procedure incomplete. This prevents UE to report *referenceTimeInfoPreference* even if gNB configured *referenceTimePreferenceReporting* to the UE.

**Q2a: Do you agree that the description of *referenceTimePreferenceReporting* in clause 5.3.5.9 “Other configuration” is missing and requires a CR?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | Yes |  |
| Samsung | Yes |  |
| Ericsson | Yes | The current RRC spec is correct, but it just jumps over the subclause 5.3.5.9 and goes directly into the subclause 5.7.4.2, as shown below in the subclause 5.7.4.2  1> if configured with *referenceTimePreferenceReporting* to provide preference in being provisioned with reference time information:  With that being said, we should align procedure text for all UE assistance information related info sent in the *otherConfig*. |
| Nokia | Yes |  |
| LG | Yes |  |
| Huawei | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| MediaTek | Yes |  |
| vivo | Yes |  |
| Intel | Yes |  |
| Apple | Yes |  |
| Futurewei | Yes |  |
| QC | Yes |  |

**Q2b: If you answered “Yes” to Q2a, do you also agree the CR? And if not, please propose an alternate TP.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
| CATT | Yes |  |
| Samsung | Yes |  |
| Ericsson | No | There are other impacted parts not considered if the intention of the CR is agreed.  The first is to make sure the network can “turn off” UE reporting.  5.3.5.9 Other configuration  1> if the received *otherConfig* includes the *referenceTimePreferenceReporting*:  2> consider itself to be configured to provide UE reference time assistance information in accordance with 5.7.4;  1> else  2> consider itself not to be configured to provide UE reference time assistance information in accordance with 5.7.4  The second change is to remove the RRC configuration parameter *referenceTimePreferenceReporting* to align with the rest of the spec and also align with the newly added text in 5.3.5.9.  5.7.4.2 Initiation  1> if configured with *referenceTimePreferenceReporting* to provide preference in being provisioned with reference time information:  2> if the UE did not transmit a *UEAssistanceInformation* message with *referenceTimeInfoPreference* since it was configured to provide preference; or  2> if the UE's preference changed from the last time UE initiated transmission of the *UEAssistanceInformation* message including *referenceTimeInfoInterestPreference*:  3> initiate transmission of the *UEAssistanceInformation* message in accordance with 5.7.4.3 to provide preference in being provisioned with reference time information. |
| Nokia | Yes |  |
| LG | Yes |  |
| Huawei | No | Ericsson’s version seems better |
| OPPO | No | Slightly prefer Ericsson’s version. |
| Xiaomi | Yes |  |
| ZTE | No | Agree with Ericsson. |
| MediaTek | No | Ericsson’s version is more consistent with the rest of the specification |
| vivo | No | Ericsson’s version is preferred. |
| Intel | No | Agree with the change proposed by Ericsson. |
| Apple | No | Slightly prefer Ericsson’s version. |
| Futurewei | No | Agree that Ericsson’s version (including the second change) is more consistent with the style used on the legacy text for the other UE assistance information, except that we don’t need “in accordance with 5.7.4” in “consider itself not to be configured …”, i.e.,  2> consider itself not to be configured to provide UE reference time assistance information ~~in accordance with 5.7.4~~  Otherwise, “in accordance …” may potentially be interpreted in a way that narrows the scope of what the UE is not configured to do. |
| Qualcomm | No (soft) | Ericsson version is ok |

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| **Summary:**  All companies agree that the description of *referenceTimePreferenceReporting* in clause 5.3.5.9 “Other configuration” is missing and requires a CR, but a majority (9 vs 5) prefer an alternate TP proposed by Ericsson explicitly capturing that the network can “turn off” UE reporting, and removing the RRC configuration parameter “*referenceTimePreferenceReporting*” at initiation (Clause 5.7.4.2). A corresponding alternate draft CR is provided in the draft folder.  **Proposal 2: The description of *referenceTimePreferenceReporting* is added in clause 5.3.5.9 “Other configuration” as captured in the draft CR: *38.331\_CR2021\_(Rel-16)\_R2-20xxxxx referenceTimePreferenceReporting - Alt*.** |

R2-2010101 Correction on UE preference for reference time information provisioning Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2173 - F NR\_IIOT-Core

This CR addresses the UE assistance information for reference time information provisioning and points out that such preference can explicitly mention that the UE prefers not to be provisioned with reference time information. Therefore it is suggested to clarify this possibility in the related RRC procedures, which would then also align with stage 2 description.

**Q3a: Do you agree that RRC procedures related to UE assistance information for reference time information provisioning should be clarified to also capture that the UE can use this assistance information to indicate that it prefers not to be provisioned with reference time information?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | Yes | Although not so critical, we think this clarification contributes to make the procedural text more consistent with the ASN.1 and 38.300.  Note while checking the CR we spotted another typo in the RRC text related to *referenceTimeInfoPreference*, see Q3b. So we think at least one CR is needed related to UE assistance information for reference time information provisioning. |
| Samsung | No strong view | This is not an essential correction but a clarification without UE behavior. UAI format already supports UE indicates the time provisioning is not necessary. We are also fine to agree the CR, since there is no functional change. |
| Ericsson | No | In the subclause 5.7.4.3, it is clearly written that the UE can set the bit either to true or to false.  1> if transmission of the *UEAssistanceInformation* message is initiated to provide an indication of preference in being provisioned with reference time information according to 5.7.4.2 or 5.3.5.3:  2> if the UE has a preference in being provisioned with reference time information:  3> set *referenceTimeInfoPreference* to *true*;  2> else:  3> set *referenceTimeInfoPreference* to *false*.  There is no need to complicate the previous two procedure parts in 5.7.4.1 and 5.7.4.2 to fill in the details. If one follows the same logic in the CR, then we need to add all the details for all other types of the UE assistance information, such as IDC assistance information, DRX parameters, etc..  Lastly, there is no issue with the current text. Also, we don’t see any discrepancy between stage 2 and RRC, stage 2 is supposed to provide a high-level description that might not be easy to get from RRC spec. |
| Nokia | No | We do not see the necessity for such change |
| LG | No |  |
| Huawei | Yes | It is simple clarification. The possible ambiguity of other UE assistance information should not prevent this clarification. The session 5.7.4.3 might be the very place that such clarification would add value: when UE set *referenceTimeInfoPreference* to *false,* the first line shall cover: if transmission of the *UEAssistanceInformation* message is initiated to provide an indication of preference in not being provisioned with reference time information according to 5.7.4.2 or 5.3.5.3. |
| OPPO | No | It seems not necessary. |
| Xiaomi | No |  |
| ZTE | No | We also think that it seems to be an unnecessary change. |
| MediaTek | No | We find the current text to be sufficiently clear |
| vivo | No | The current text is clear enough. |
| Intel | No | Agree with Ericsson. |
| Apple | No | We do not think this change is needed. “Preference in being provisioned” (the existing text) is already clear enough and actually more suitable. Putting the (not) looks confusing. |
| Futurewei | No | “Preference in”, or as used more commonly, “preference on”, merely means a position in favor of one way (or the other) on the issue that follows, without answering which way is the preferred position. Hence, the current text is correct. If anything needs to be changed here, change “in” to “on” and correct the typo that CATT has identified.  Note: “Preference for something” would be used when “something” is the definite answer to the question of the preference. However, it is not the case here. |
| QC | No | Current text is ok, as explained by Ericsson |

**Q3b: If you answered “Yes” to Q3a, do you also agree the CR? And if not, please propose an alternate TP.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
| CATT | No | The Huawei’s CR is good but as mentioned above it should also fix the below typo in RRC text clause 5.7.4.2 (we just spotted):  2> if the UE's preference changed from the last time UE initiated transmission of the *UEAssistanceInformation* message including *referenceTimeInfo~~Interest~~Preference*:  3> initiate transmission of the *UEAssistanceInformation* message in accordance with 5.7.4.3 to provide preference in (not) being provisioned with reference time information. |
| Huawei |  | Fine to correct the above typo. |
| MediaTek |  | Only a correction to the typo, that CATT raises above, is needed |
| Apple |  | Same view as MediaTek. |
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| **Summary:**  Only 2 companies (CATT, Huawei) support the proposal, and most companies agree to fix the typo spotted by the Rapporteur. Therefore it is proposed to agree:  **Proposal 3: The clarification addressed in R2-2010101 is not needed.**  **Proposal 4: The typo *referenceTimeInfo~~Interest~~Preference* in clause 5.7.4.2 shall be fixed.** |

R2-2010102 Correction regarding TimeReferenceSFN only for CG Type 1 Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2174 - F NR\_IIOT-Core

This proposed CR addresses the configured grant configuration and aims at clarifying in its field description that the parameter *timeReferenceSFN* is only applied to Type 1 configured grants. One argument being that this already explicitly mentioned for the equivalent sidelink parameter, *sl-TimeReferenceSFN-Type1*.

**Q4a: Do you agree a clarification is needed in the field description of *timeReferenceSFN* explicitly capturing that it only applies to Type 1 configured grants?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | No | We think the field description refers to the appropriate clause in MAC specification and there is no room for ambiguity. |
| Samsung | No strong view | It is a simple text clarification which is correct. For type 2 CG, SFN does not to be configured at all. |
| Ericsson | No | The field is included in the rrc-ConfiguredUplinkGrant and every field within rrc-ConfiguredUplinkGrant is for type 1  No fields within rrc-ConfiguredUplinkGrant have added the suffix type-1 or have clarification that it is for type 1. If we follow the same logic in the CR, then every field inside rrc-ConfiguredUplinkGrant needs to be changed including the legacy Rel-15 fields.. |
| Nokia | No | We do not see the necessity for such change |
| LG | No |  |
| Huawei | Yes | It is simple clarification for the benefit of a reader who might search directly into this field description. So a simple addition of “type 1” before “configured grant configuration” could help a bit. We observe that every field for rrc-ConfiguredSidelinkGrant-r16 do have type-1 suffix. |
| OPPO | No | Current spec is clear. |
| Xiaomi | NO | Agree with the understanding from Ericsson |
| ZTE | No | It seems not necessary. |
| MediaTek | No strong view |  |
| vivo | No | Agree with Ericsson. |
| Intel | No | TS 38.321 is clear on this aspect. |
| Apple | No | We agree with the intention of the CR, however, there is no ambiguity and we have the same understanding as Ericsson. |
| QC | No | Current spec is clear |

**Q4b: If you answered “Yes” to Q4a, do you also agree the CR? And if not, please propose an alternate TP.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
| Samsung | Yes |  |
| Huawei | Yes |  |
| MediaTek | Yes |  |
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| **Summary:**  The CR is only supported by the proponent.  **Proposal 5: The clarification addressed in R2-2010102 is not pursued.** |

### EHC

R2-2010103 Correction regarding reconfigure EHC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2175 - F NR\_IIOT-Core

This CR addresses the Ethernet Header Compression configuration field (*ethernetHeaderCompression*) and proposes adding the condition that *drb-ContinueEHC-DL* or *drb-ContinueEHC-UL* are not configured for expecting the network to reconfigure EHC upon reconfiguration involving PDCP re-establishment.

**Q5a: Do you agree it is needed to clarify that *drb-ContinueEHC-DL* and *drb-ContinueEHC-UL* should not be configured for the network to reconfigure *ethernetHeaderCompression* upon reconfiguration involving PDCP re-establishment for downlink or uplink, respectively?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | Yes |  |
| Samsung | Yes |  |
| Ericsson | Yes |  |
| Sharp | Yes |  |
| Nokia | Yes |  |
| LG | Yes |  |
| Huawei | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| MediaTek | Yes |  |
| vivo | Yes |  |
| Intel | Yes |  |
| Apple | Yes |  |
| Futurewei | Yes |  |
| QC | Yes |  |

**Q5b: If you answered “Yes” to Q5a, do you also agree the CR? And if not, please propose an alternate TP.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
| CATT | No | The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment for downlink or uplink, and when *drb-ContinueEHC-DL* or *drb-ContinueEHC-UL* are not configured respectively. |
| Samsung | No | We don’t need to specify downlink or uplink because the parameter name already implies that information as follows:  The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment without *drb-ContinueEHC-DL* and *drb-ContinueEHC-UL*. |
| Ericsson | No | The *ethernetHeaderCompression* field states that it is only for bi-directional DRB, so both DL and UL are involved. The understanding is that both directions get PDCP re-establishment at the same time. In other words, PDCP re-establishment is always triggered for both UL/DL at the same time. The simpler change can be that  The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment and with neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* configured |
| Sharp | Yes |  |
| Nokia | No | Samsung’s suggestion seems to be the simplest |
| LG | No | We prefer Samsung’s text. |
| Huawei |  | CATT version is fine for us. EHC is configured for DL and UL separately and we want to reflect this principle here. When PDCP re-establishment triggered for both UL/DL at the same time, our version and CATT version shall cover this case. |
| OPPO | Yes | CATT’s version is also ok. |
| Xiaomi | No | We prefer the proposed changes from Samsung. |
| ZTE | No | Agree with Samsung. |
| MediaTek | Yes | CATT’s version seems cleaner |
| vivo | No | CATT’s version is preferred. |
| Intel | No | Agree with Samsung’s suggestion. |
| Apple | No | Samsung’s change seems simpler and is also aligned with the description of *headerCompression*, which follows a similar logic. |
| Futurewei | No | Agree with Ericsson that PDCP re-establishment with EHC on involves both UL and DL. The issue is that the network needs to reconfigure *ethernetHeaderCompression* when either *drb-ContinueEHC-DL* or *drb-ContinueEHC-UL* is not configured, as well as when both are not configured.  Text change suggested by Ericsson says only when both are not configured, which is insufficient. Text suggested by Samsung could also be interpreted as when both are not configured. Two possible ways to improve Samsung’s text are as follows:  The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment without both *drb-ContinueEHC-DL* and *drb-ContinueEHC-UL* being configured.  Or,  The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment with *drb-ContinueEHC-DL* or *drb-ContinueEHC-UL* or both notbeing configured. |
| QC | No | Samsung version preferred |

**Summary:**

All companies agree to clarify that *drb-ContinueEHC-DL* and/or *drb-ContinueEHC-UL* should not be configured for the network to reconfigure *ethernetHeaderCompression* upon reconfiguration involving PDCP re-establishment. But there are divergent views on three different options expressed by companies:

* Option 1: *ethernetHeaderCompression* can be reconfigured for DL and UL independently, based on *drb-ContinueEHC-DL* and *drb-ContinueEHC-UL* respectively. (Huawei, CATT, Sharp, OPPO, MediaTek, vivo) => Huawei/CATT TPs
* Option 2: *ethernetHeaderCompression* is reconfigured as a whole (both UL and DL parts) when neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* are configured (Samsung, Ericsson, Nokia, LG, Xiaomi, ZTE, Intel, Apple, Qualcomm) => Samsung/Ericsson TPs
* Option 3: *ethernetHeaderCompression* is reconfigured as a whole (both UL and DL parts) when either or both of *drb-ContinueEHC-DL* or/and *drb-ContinueEHC-UL* are configured (Futurewei) => Futurewei’s TP

To progress further this issue, companies are invited to select their preferred option:

**Q5c: Which option do you prefer regarding the reconfiguration of *ethernetHeaderCompression* among the above three options?**

|  |  |  |
| --- | --- | --- |
| Company | Option | Comments/alternate TP |
| CATT | 1 | We think it should be possible to reconfigure *ehc-Downlink-r16* and *ehc-Uplink-r16* independently upon resuming an RRC connection or reconfiguration with sync, and this, based on configuration of *drb-ContinueEHC-DL* and *drb-ContinueEHC-UL* respectively. |
| Ericsson | 2 or none of the changes | First, we understand the original field description means that the network can choose to re-configure but it is not mandatory to re-configure. We may add the wording “can” below to clarify.  “The network (can?) reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment”  With this in mind, the correction here is essentially to clarify what UE would expect by a reasonable network configuration. The addition is to rule out unreasonable network configurations, like re-configuring *ethernetHeaderCompression* with drb-ContinueEHC configured so that it breaks the operations.  However, if we go with option 1 or option 3, then if either *drb-ContinueEHC-UL* or *drb-ContinueEHC-DL* is configured and the network reconfigures the *ethernetHeaderCompression*, there can be numerous wrong configuration cases such as network configures *ehc-CID-Length* or *maxCID-EHC-UL* or even the field *drb-continueEHC* itself. To list out all these cases make what is a reasonable network configuration crystal clear would be very complicated. One good example is the below field which is mandatory in *EthernetHeaderCompression* and has to be re-configured together *EthernetHeaderCompression* but need to be kept with the original value if only one direction is reconfigured.  ehc-Common-r16 SEQUENCE {  ehc-CID-Length-r16 ENUMERATED { bits7, bits15 },  ...  },  Option 2 is what we think is a reasonable network configuration, but if it is too restricted, then we are okay not to introduce any change, with the understanding that it is up-to gNB implementation to ensure a proper network configuration which may include the intention of option 1. |
| Intel | 1 | We have slight preference of option 1 due to the flexibility, but we’re also OK with option 2.  We’d like to note that *ehc-CID-Length-r16* cannot be reconfigured according to field description:  Once the field ethernetHeaderCompression-r16 is configured for a DRB, the value of the field ehc-CID-Length for this DRB is not reconfigured to a different value. |
| LG | Option 2 or no change | The EHC is configured only for bi-directional DRBs, as shown below.  ***ethernetHeaderCompression***  This fields configures Ethernet Header Compresssion. This field can only be configured for a bi-directional DRB. The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment.  We prefer to allow reconfiguration only when both directions are involved, which is the simplest.  We are even ok not to change at all, and leave the proper configuration up to to gNB implementation. |
| Nokia | Option 2 or no change | We also think it is simpler to unify one reconfiguration for both DL and UL. Also agree with LG that we can leave it to gNB implementation and no change is needed. |
| Xiaomi | Option 2 | We have no strong preference on either Option 1 and Option 2. According to the current RRC configuration, “ehc-CID-Length” is common for both UL and DL. As reconfiguring the “maxCID-EHC-UL-r16” for “ehc-Uplink-r16” is rare, it would be simpler to consider the EHC reconfiguration as a whole. |
| MediaTek | Option 1 | The reason we only have EHC on a bi-drectional DRB was to ensure that EHC feedback can always be sent. This does not imply that EHC ‘has’ to be configured for both directions.  We see option 1 as more flexible.  For example, if we have EHC configured on the DL only, and the NW chooses to enable UL EHC without resetting all the existing DL EHC contexts, it can choose to only send *drb-ContinueEHC-DL* on the DL.  Another example is the case when the NW prefers to increase the number of DL contexts that it would like to use, without resetting the existing DL contexts. In this case, it can choose to reset UL EHC and reduce *maxCID-EHC-UL* for the UL.  However we are also willing to compromise with option 2, with the understanding that this reduces NW flexibility. |
| Apple | Option 2 | Since ethernetHeaderCompression can only be configured for a bi-directional DRB we think option 2 is simpler. |
| ZTE | Option 2 |  |

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| --- |
| **Summary:**  9 companies provided inputs.   * Option 1: 3 companies * Option 2: 6 companies * No change is needed: 3 companies   The majority of views (6/9) prefer Option 2 for its simplicity: *ethernetHeaderCompression* is reconfigured as a whole (both UL and DL parts) when neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* are configured. It is suggested to adopt the Ericsson’s TP accordingly.  **Proposal 9: The field description of *ethernetHeaderCompression* is updated as follows: The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment and with neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* configured.** |

### Other

R2-2009909 CR on 38.331 for DL BWP configuration and LCH configuration for NRIIOT ZTE Corporation, Sanechips CR Rel-16 38.331 16.2.0 2142 - F NR\_IIOT-Core

This CR addresses two issues.

The first issue is a wrong reference to PHY specifications in the field description of *configuredGrantConfigType2DeactivationStateList* from *BWP-UplinkDedicated* I.E.

**Q6a: Do you agree the PHY specification referred to in the field description of *configuredGrantConfigType2DeactivationStateList* should be clause 10.2 in TS 38.213 instead of clause 6.1 in TS 38.214?**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | Yes |  |
| Samsung | Yes |  |
| Ericsson | Yes |  |
| Sharp | Yes |  |
| Nokia | Yes |  |
| LG | Yes |  |
| Huawei | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| MediaTek | Yes |  |
| vivo | Yes |  |
| Intel | Yes |  |
| Apple | Yes |  |
| Futurewei | Yes |  |

**Q6b: If you answered “Yes” to Q6a, do you also agree the CR? And if not, please propose an alternate TP.**

|  |  |  |
| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
| CATT | Yes |  |
| Samsung | Yes |  |
| Ericsson | Yes |  |
| Sharp | Yes |  |
| Nokia | Yes |  |
| LG | Yes |  |
| Huawei | Yes |  |
| OPPO | Yes |  |
| Xiaomi | Yes |  |
| ZTE | Yes |  |
| MediaTek | Yes |  |
| vivo | Yes |  |
| Intel | Yes |  |
| Apple | Yes |  |
| Futurewei | Yes |  |

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| **Summary:**  All companies agree that the first issue (wrong PHY spec reference) in the CR R2-2009909 should be addressed and the CR correctly addresses it.  **Proposal 6: The first change in CR R2-2009909 is agreed.** |

The second issue is related to *allowedServingCell* parameter of an LCH configuration, which is mandatory with CA duplication, characterized by “the PDCP entity is associated with multiple RLC entities belonging to the same cell group”. The proponents claim that this excludes the case where the RLC entities are in one cell group and the PDCP is in another cell group which should also be considered as CA duplication.

**Q7a: Do you agree that the current description of CA duplication in RRC (*PDCP-CADuplication*) “*the PDCP entity is associated with multiple RLC entities belonging to the same cell group*” excludes the scenario where all RLC entities are in one cell group and the PDCP is in another cell group?**

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| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | No | Such scenario falls in the CA duplication cases where *allowedServingCell* should be mandatorily configured and we interpret the above as the “multiple RLC entities” belong to the same cell group, but not necessarily that of the PDCP entity. |
| Samsung | No | The location of PDCP entity is not visible to UE and is not used. So this clarification is not needed. |
| Ericsson | No | The wording used in IIoT WI is that PDCP is associated with multiple RLC entities. There is no reference to where PDCP entity is, e.g., on MCG or SCG. |
| Sharp | No | We share above companies view. |
| Nokia | No | There is no problem with the existing text. As long as we have multiple RLC entities in a cell group, it could be deemed as CA duplication, regardless of where the PDCP is hosted. |
| LG | No |  |
| Huawei | No | Agree with CATT and Samsung, “belonging to the same cell group” is used for “multiple RLC entities”. There is no misinterpretation. |
| OPPO | No | Agree with Ericsson. |
| Xiaomi | No |  |
| ZTE | Yes | Since the optional condition of RRC spec is not only used for UE side but also for NW side. From NW point of view, the hosting of PDCP entity is really an issue without this change as we described in reason of change. But if companies think this is not an issue, we also can follow majorities. |
| MediaTek | No | Agree with CATT and Samsung |
| vivo | No | Agree with above companies’ views. There is no room for misunderstanding. |
| Intel | No | Current specification is fine as the text refers to the case that multiple RLC entities are in the same cell group. |
| Apple | No |  |
| Futurewei | No |  |
| QC | No | Agree with Samsung and Ericsson |

**Q7b: If you answered “Yes” to Q7a, do you also agree the CR? And if not, please propose an alternate TP.**

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| --- | --- | --- |
| Company | Yes/No | Comments/alternate TP |
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| **Summary:**  Only the proponent supports the second issue (CA duplication description) in the CR R2-2009909.  **Proposal 7: The second change in CR R2-2009909 is not pursued.** |

R2-2009499 Clarification of Uplink Cancellation Priority Configuration Apple discussion Rel-16 NR\_IIOT-Core

This contribution raises the issue that the term “intra-UE priority indicator” in the below field description of *uplinkCancellationPriority* is undefined.

***uplinkCancellationPriority***

Configures uplink cancellation behavior if both UL CI and intra-UE priority indicator are configured for a given UE. If the field is present, then UL CI is only applicable to the UL transmissions indicated/configured as low priority level. If the field is absent, UL CI is applicable to UL transmission irrespective of its priority level (see TS 38.213 [13], clause 11.2A).

Rapporteur respectfully indicates that the above term refers to the PHY parameter “priority indicator” for a PUSCH included in DCI format 0\_1/0\_2 (TS 38.212 clause 7.3.1) which presence is configured in *PUSCH-Config* I.E. in TS 38.331 by the parameters *priorityIndicatorDCI-0-1* and *priorityIndicatorDCI-0-2* for DCI formats 0\_1 and 0\_2 respectively:

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| ***priorityIndicatorDCI-0-1, priorityIndicatorDCI-0-2***  Configures the presence of "priority indicator" in DCI format 0\_1/0\_2. When the field is absent in the IE, then the UE shall apply 0 bit for "Priority indicator" in DCI format 0\_1/0\_2. The field *priorityIndicatorDCI-0-1* applies to DCI format 0\_1 and the field *priorityIndicatorDCI-0-2* applies to DCI format 0\_2 (see TS 38.212 [17] clause 7.3.1 and TS 38.213 [13] clause 9). |

And its usage is specified in TS 38.213 clause 9 as follows:

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| If in an active DL BWP a UE monitors PDCCH either for detection of DCI format 0\_1 and DCI format 1\_1 or for detection of DCI format 0\_2 and DCI format 1\_2, a priority index can be provided by a priority indicator field. If a UE indicates a capability to monitor, in an active DL BWP, PDCCH for detection of DCI format 0\_1 and DCI format 1\_1 and for detection of DCI format 0\_2 and DCI format 1\_2, a DCI format 0\_1 or a DCI format 0\_2 can schedule a PUSCH transmission of any priority and a DCI format 1\_1 or a DCI format 1\_2 can schedule a PDSCH reception and trigger a PUCCH transmission with corresponding HARQ-ACK information of any priority. |

**Q8: Do you think the term “intra-UE priority indicator” in the field description of *uplinkCancellationPriority* parameter needs to be clarified? If yes, please provide a TP.**

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| --- | --- | --- |
| Company | Yes/No | Comments |
| CATT | No | If companies do think it is unclear, maybe a simple reference to TS 38.213 clause 9 could be added right after the term. |
| Samsung | Yes | We agree that intra-UE priority indicator does not exist in the spec. As we discussed during the online discussion, PHY priority index can replace this.  We would suggest to change “priority indicator” to “phy-PriorityIndex” in the field description of uplinkCancellationPriority. |
| Ericsson | No | The intended behavior is clear from the second and the third sentence of the field description. This is a RAN1 only feature. Most likely the field description is copied and pasted from the RAN1 RRC parameter list. If RAN1 has provided this list, it means that they understand what it means. Further change in RRC needs to be carefully reviewed and, if needed, confirmed/consulted with RAN1 in case we don’t unintentionally change the meaning. Unless it is really needed (for example to correct a mis-understanding or to optimize ASN.1 code structure), we prefer keeping it as it is. |
| Sharp | No | We agree with Ericsson. |
| Nokia | No | As far as we know, the only priority information indicated in DCI is for intra-UE prioritization. We think it is sufficient clear and cannot be misinterpreted, so the change is not necessary. |
| LG | No |  |
| Huawei | No | Agree with CATT |
| OPPO | No | Agree with Ericsson. |
| Xiaomi | Yes | Agree with Samsung |
| ZTE | No | Agree with CATT |
| MediaTek | No | Agree with Ericsson |
| vivo | No |  |
| Intel | No | Agree with Nokia. |
| Apple | Yes | We think a stage 3 spec should not contain invalid references. Apart from the issues mentioned in [4], the term “intra-UE priority indicator”not only applies to PHY priority levels configured on the DCI but also to the PHY priority levels of configured grants. We would suggest adding a clarification such as the following change:  ***uplinkCancellationPriority***  Configures uplink cancellation behavior if both UL CI and two priority levels are configured for a given UE in the physical layer. If the field is present, then UL CI is only applicable to the UL transmissions indicated/configured as low priority level. If the field is absent, UL CI is applicable to UL transmission irrespective of its priority level (see TS 38.213 [13], clause 11.2A). |
| Futurewei | No | Agree with Ericsson |
| QC | No |  |

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| **Summary:**  Only 3 companies (Samsung, Xiaomi, Apple) out of 16 support clarifying the term “intra-UE priority indicator” in the field description of *uplinkCancellationPriority*. Therefore it is proposed:  **Proposal 8: There is no need to clarify further the term “intra-UE priority indicator” in the field description of *uplinkCancellationPriority*.** |

The 2nd proposal of the contribution to add a generic term as an umbrella for PHY-based prioritization was already discussed online and not agreed.

# Conclusion

# Phase 1 conclusion

The outcome of phase 1 discussion is captured by the following proposals:

**Proposal 1: The changes in the 38.306 CR in R2-2009376 are agreed and merged in the Mega CR for capability.**

**Proposal 2: The description of *referenceTimePreferenceReporting* is added in clause 5.3.5.9 “Other configuration” as captured in the draft CR: *38.331\_CR2021\_(Rel-16)\_R2-20xxxxx referenceTimePreferenceReporting - Alt*.**

**Proposal 3: The clarification addressed in R2-2010101 is not needed.**

**Proposal 4: The typo *referenceTimeInfo~~Interest~~Preference* in clause 5.7.4.2 shall be fixed.**

**Proposal 5: The clarification addressed in R2-2010102 is not pursued.**

**Proposal 6: The first change in CR R2-2009909 is agreed.**

**Proposal 7: The second change in CR R2-2009909 is not pursued.**

**Proposal 8: There is no need to clarify further the term “intra-UE priority indicator” in the field description of *uplinkCancellationPriority*.**

# Phase 2 conclusion - Deadline for companies inputs: Nov 11 – 12:00 UTC

R2-2010103 Correction regarding reconfigure EHC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2175 - F NR\_IIOT-Core

Options initially expressed by companies in phase 1:

* Option 1: *ethernetHeaderCompression* can be reconfigured for DL and UL independently, based on *drb-ContinueEHC-DL* and *drb-ContinueEHC-UL* respectively. (Huawei, CATT, Sharp, OPPO, MediaTek, vivo) => Huawei/CATT TPs
* Option 2: *ethernetHeaderCompression* is reconfigured as a whole (both UL and DL parts) when neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* are configured (Samsung, Ericsson, Nokia, LG, Xiaomi, ZTE, Intel, Apple, Qualcomm) => Samsung/Ericsson TPs
* Option 3: *ethernetHeaderCompression* is reconfigured as a whole (both UL and DL parts) when either or both of *drb-ContinueEHC-DL* or/and *drb-ContinueEHC-UL* are configured (Futurewei) => Futurewei’s TP

In phase 2, the majority of views (6/9) prefer Option 2 for its simplicity:

*ethernetHeaderCompression* is reconfigured as a whole (both UL and DL parts) when neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* are configured. It is suggested to adopt the Ericsson’s TP accordingly.

**Proposal 9: The field description of *ethernetHeaderCompression* is updated as follows: The network reconfigures *ethernetHeaderCompression* only upon reconfiguration involving PDCP re-establishment and with neither *drb-ContinueEHC-DL* nor *drb-ContinueEHC-UL* configured.**

# Reference

1. R2-2008863 Correction on dynamic PUSCH skipping when PUCCH with UCI overlaps with PUSCH; CATT
2. R2-2008864 Clarification on referenceTimePreferenceReporting in RRC Reconfiguration Procedure; CATT
3. R2-2009376 Correction on the pre-requisite condition for dci-UL-PriorityIndicator-r16; Huawei, HiSilicon
4. R2-2009499 Clarification of Uplink Cancellation Priority Configuration; Apple
5. R2-2009909 CR on 38.331 for DL BWP configuration and LCH configuration for NRIIOT; ZTE Corporation, Sanechips
6. R2-2010101 Correction on UE preference for reference time information provisioning; Huawei, HiSilicon
7. R2-2010102 Correction regarding TimeReferenceSFN only for CG Type 1; Huawei, HiSilicon
8. R2-2010103 Correction regarding reconfigure EHC; Huawei, HiSilicon