3GPP TSG-RAN WG2 Meeting #114 Electronic R2-210xxxx

Elbonia, 19 – 27 May 2021

**Agenda item: 5.4**

**Source: Qualcomm (Rapporteur)**

**Title: Offline 006 on Rel-15 Connection Control III**

**WID/SID: NR\_newRAT-Core**

**Document for: Discussion and Decision**

# 1 Introduction

This document reflects the content and outcome of the following email discussion:

* [AT114-e][006][NR15] Connection Control III (Qualcomm)

 Scope: Treat R2-2106188, R2-2106189, R2-2106267, R2-2106270, R2-2105323, R2-2105324, R2-2105767, R2-2105950, R2-2105951, R2-2106182, R2-2106183, R2-2106178, R2-2106179, R2-2106077, R2-2106079

 Phase 1, determine agreeable parts, Phase 2, for agreeable parts Work on CRs.

 Intended outcome: Report and Agreed CRs.

 Deadline: Schedule A

# 2 Contact Points

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

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| --- | --- | --- |
| Company | Name | Email Address |
| QCOM (Rapporteur) | Mouaffac Ambriss | mambriss@qti.qualcomm.com  |
| MediaTek | Felix Tsai | Chun-Fan.tsai@mediatek.com |
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# 3 Discussion Phase 1

## 3.1 BWP

The CRs related to this topic are:

[R2-2106188](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106188.zip) Clarification on releasing of BWP Huawei, HiSilicon CR Rel-15 38.331 15.13.0 2678 - F NR\_newRAT-Core

[R2-2106189](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106189.zip) Clarification on releasing of BWP Huawei, HiSilicon CR Rel-16 38.331 16.4.0 2679 - A NR\_newRAT-Core

The CR clarifies by adding a note that “When releasing a BWP, the network should ensure that the active BWP is in place after the UE applies the RRC reconfiguration message, e.g. by including *firstActiveDownlinkBWP-Id/firstActiveUplinkBWP-Id* in the same RRC message”.

**Question 1**: do you agree with the addition of the note in order to clarify the expected network behaviour.

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| Answers to Question 1 |
| Company | Yes/No | Comments |
| QCOM | Yes | We’re fine with the note |
| MediaTek | No | It is unclear what does “in place” means in the NOTE and we don’t know why “e.g.” is used instead of “i.e.”.We suggest to capture a NOTE same as previous agreement. i.e. “If the network releases the active BWP using RRC reconfiguration message, it includes the *firstActiveDownlinkBWP-Id*/ *firstActiveUplinkBWP-Id* in the RRC Reconfiguration message” |
| ZTE | No | Firstly, We think the NOTE does not accurately capture the agreement ’if the network releases the active BWP using RRC reconfiguration message, it includes the firstActiveDownlinkBWP-Id/ firstActiveUplinkBWP-Id in the RRC Reconfiguration message’, same view as MediaTek.Secondly, we think there is no need to capture anything in spec, also this is majority views in the last e-meeting. |
| Ericsson | No | We do not see the need to capture anything in the specification. Our understanding on when this topic was discussed is that the agreements were captured in the chairman’s note but no specification change was required for any of them. |
| Huawei, HiSilicon | Yes | Proponent |
| OPPO | Yes but | We agree the intention that when network decides to release a active BWP, it ensures that the UE knows which BWP should be activated. We agree the concern from MTK that the added note is not crystal clear, and thus we can simply add what the agreements said, i.e., “For SpCell, if the network releases the active BWP using RRC reconfiguration message, it includes the firstActiveDownlinkBWP-Id/ firstActiveUplinkBWP-Id in the RRC Reconfiguration message” |
| Nokia | No | There seems to be no other approach. We do NOT support any capturing in specification. |
| CATT | No | We have the same concern with MTK, it is not clear what it is meaning of “in place”, it is better to capture the agreement made last meeting if needed. |
| LG | Yes | We agree that it is useful to capture the network behaviour to avoid ambiguous UE states, and for this case adding the Note as proposed seems the best way, given that it is very hard to capture it in conditional presence.  |
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**Summary 1**: TBD.

**Proposal 1**: TBD.

## 3.2 L1 Parameters

The CRs related to this topic are:

[R2-2106267](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106267.zip) Clarification of recurrence in RateMatchPattern Qualcomm Incorporated CR Rel-15 38.331 15.13.0 2687 - F NR\_newRAT-Core

[R2-2106270](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106270.zip) Clarification of recurrence in RateMatchPattern Qualcomm Incorporated CR Rel-16 38.331 16.4.1 2688 - A NR\_newRAT-Core

[R2-2105323](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2105323.zip) Correction on CrossCarrierSchedulingConfig Introduced by Two PUCCH Group CATT CR Rel-15 38.331 15.13.0 2614 - F NR\_newRAT-Core

[R2-2105324](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2105324.zip) Correction on CrossCarrierSchedulingConfig Introduced by Two PUCCH Group CATT CR Rel-16 38.331 16.4.1 2615 - A NR\_newRAT-Core

### 3.2.2 Clarification of recurrence in RateMatchPattern

In the field description of *periodicityAndPattern* of the IE *RateMatchPattern*, it is stated that the default value for the periodicity is 14 symbols. However, this is not in line with the referenced 38.214 specification where different values of *symbolsInResourceBlock*, i.e. 1 or 2 slots are captured separately. In addition, the slot length is 14 symbols only for NCP is 12 symbols for ECP. Therefore, it will be better just to refer to 38.214 where the pattern is described clearly in more detail.

**Question 2**: Do you agree with the proposed change, by removing the text regarding how the pattern repeats itself when *periodicityAndPattern* is not configured

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| Answers to Question 2 |
| Company | Yes/No | Comments |
| QCOM | Yes | Proponentaligning the 38.331 with the 38.214. |
| MediaTek | Yes |  |
| ZTE | Yes |  |
| Huawei, HiSilicon | Yes | To align with PHY specs. |
| OPPO | Yes |  |
| Nokia | Yes | Okay to align and merge to rapporteur CR as this is editorial correction |
| CATT | Yes |  |
| LG | Yes | The removed part is only duplication of what 214 already specified. So, we think there is no value to repeat this in 331.  |
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**Summary 2**: TBD.

**Proposal 2**: TBD.

### 3.2.3 Correction on CrossCarrierSchedulingConfig

The CR captures the network restriction (based on 38.213 spec) that is not allowed to configure cross carrier scheduling cross different PUCCH groups.

**Question 3**: Do you agree with addition of this restriction into the 38.331 spec.

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| Answers to Question 3 |
| Company | Yes/No | Comments |
| QCOM | Yes | The change is aligned with our understanding of the spec.  |
| MediaTek | Yes |  |
| ZTE | Yes | The CRs are fine to us. |
| Huawei, HiSilicon | Yes | Fine to add the clarification, if it is not working otherwise. |
| OPPO | Yes |  |
| CATT | Yes | Proponent |
| LG | Neutral | Since the appropriate network behaviour can be somehow understood from 38.213, capturing the network restriction is not essential. But we have no strong view and go for a majority view.  |
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**Summary 3**: TBD.

**Proposal 3**: TBD.

## 3.3 Processing Time

The CRs related to this topic are:

[R2-2105767](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2105767.zip) RRC processing time for Scell modification Ericsson, Nokia, Nokia Shanghai Bell discussion Rel-15 NR\_newRAT-Core

[R2-2105950](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2105950.zip) Correction for RRC Resume latency requirements Huawei, HiSilicon CR Rel-15 38.331 15.13.0 2656 - F NR\_newRAT-Core

[R2-2105951](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2105951.zip) Correction for RRC Resume latency requirements Huawei, HiSilicon CR Rel-16 38.331 16.4.1 2657 - A NR\_newRAT-Core

### 3.3.1 RRC processing time for SCell modification

In the last RAN2#113-bis-e meeting, it was discussed on whether the RRC processing delay requirement for the SCell modification should be changed from 10ms to 16ms. However, no consensus has been reached and the discussion has been postponed.

This discussion paper shared the following observations:

[Observation 1 As in LTE, the processing delay requirement for the SCell modification is considered as the same of a simple *RRCReconfiguration* message (i.e., 10ms).](#_Toc71294077)

[Observation 2 Changing the RRC processing delay for the SCell modification from 10ms to 16ms is a NBC change.](#_Toc71294078)

[Observation 3 RAN4 does not define any specific UE requirement for the SCell modification procedure.](#_Toc71294079)

[Observation 4 The RRC segmentation was introduced in Rel-16 to address the case (among the others) of a large RRC reconfiguration message.](#_Toc71294080)

[Observation 5 Changing the RRC processing delay for the SCell modification from 10ms to 16ms only in Rel-16 it will result in different implementations and this is not desirable.](#_Toc71294081)

Therefore the discussion paper proposes:

[P 1 RAN2 confirms that the RRC processing delay for the SCell modification is 10ms.](#_Toc71294082)

**Question 4**: do you agree with the observations made? if not, please provide your comment accordingly.

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| Answers to Question 4 |
| Company | Yes/No | Comments on the observations |
| QCOM | Neutral | We don’t have a strong opinion, but we would like to make a few points:* Not sure why we need match the NR performance to LTE, when in many places we defined different behaviour for LTE and NR
* When claiming that the change of the processing delay from 10 ms to 16 ms is an NBC, it seems a bit over-stretched claim, as sending UL grant when no UL data is available yet, won’t break the system (may be inefficient) and UE can still SR to request UL grant a at later point.
 |
| MediaTek | Partial | We think observation 2 on NBC is not so correct. But in general we don’t have too strong opinion.  |
| ZTE | Partial | We think changing the delay from 10ms to 16ms can’t cause NBC issue, but if there is no issue found in field, we suggest not to change spec. |
| Ericsson | Yes | What we want to highlight is that this topic pop up in the last meeting because some company see an issue in the message size when the SCell modification is triggered. For this we think that Observation 4 is already clarifying that there is no issue.  |
| Huawei, HiSilicon |  | No strong view.  |
| OPPO | Neutral | If there is no issue identified, we prefer not to change the spec. |
| Nokia | Yes | Proponent and also agree with Ericsson’s feedback. |
| CATT | Neutral | We don’t have a strong opinion. |
| LG | Neutral | Since the appropriate network behaviour can be somehow understood from 38.213, capturing the network restriction is not essential. But we have no strong view and go for a majority view.  |
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**Question 5**: do you agree with the P1? And if not, please provide your comment accordingly.

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| Answers to Question 5 |
| Company | Yes/No | Comments on the P1 |
| QCOM | Neutral | Will go with majority |
| MediaTek | Yes | But no need to have any agreement or SPEC change. There is no proposal to change the processing time in this meeting. |
| ZTE | Yes | There is no need to change spec. |
| Ericsson | Yes | Yes, the intention is to have no spec change and leave things as they are. |
| Huawei, HiSilicon |  | No strong view. |
| OPPO | Yes |  |
| Nokia | Yes | Proponent + agree with Ericsson |
| CATT | Neutral | We don’t have a strong opinion. |
| LG | No strong view |  |
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**Summary 4**: TBD.

**Proposal 4**: TBD.

### 3.3.2 Correction for RRC Resume latency requirements

RAN2 have agreed to reuse LTE approach to reduce RRC resumption processing delay requirement in RAN2 #105. In addition, RAN2 also agrees that PDCP/RLC entity corresponding to SRB2/DRB(s) shall be re-established after RRC reestablishment or resumption, just like LTE. in NR an explicit indication is needed to establish the RLC/PDCP (unlike the LTE where entities are implicitly established) by introducing the flag in RB config and RLC bearer config.

Subsequently, there is a need to explicitly adding in the notes that the reestablishPDCP and reestablishRLC flags will be included during Resume procedure and this will not impact the 6 ms delay requirements for the for a UE supporting reduced CP latency.

**Question 6**: do you agree with the proposed changed ? And if not, please provide your comment accordingly.

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| Answers to Question 6 |
| Company | Yes/No | Comments |
| QCOM | Yes | Aligned with our understanding |
| MediaTek | Yes |  |
| ZTE | Yes  |  |
| Ericsson | Yes | No change is preferred. However, if companies are keen to clarify something, since this is not a critical change (is very much editorial) we think that it can be merged in the Rapporteur’s CR |
| Huawei, HiSilicon | Yes | Proponent |
| OPPO | Yes |  |
| Nokia | Yes | Agree with Ericsson |
| CATT | Yes |  |
| LG | Partial  | In general, we are fine the changes, but we wonder about fullConfig case. If fullConfig is configured during resume, RLC bearers are released and hence those two fields are not set.  |
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**Summary 5**: TBD.

**Proposal 5**: TBD

## 3.4 Deprioritisation

The CRs related to this topic are:

[R2-2106182](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106182.zip) Clarification on the frequency deprioritisation Huawei, HiSilicon, China Unicom CR Rel-15 38.331 15.13.0 2674 - F NR\_newRAT-Core

Chair: Same issue as IPA R2-2106300/6308 but a different change. If agreeable determine if separate CRs.

[R2-2106183](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106183.zip) Clarification on the frequency deprioritisation Huawei, HiSilicon, China Unicom CR Rel-16 38.331 16.4.1 2675 - A NR\_newRAT-Core

Adding a note in the 38.331 spec to clarify that when a frequency is configured with both absolute priority and deprioritisation, deprioritisation will override absolute priority. In addition the note specifying these points:

1. The deprioritisation will not be deleted when the UE enters RRC connected state
2. The deprioritisation will not be deleted when the UE enters another RAT

**Question 7**: do you agree with the change?

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| Answers to Question 7 |
| Company | Yes/No | Comments |
| QCOM | Yes but | We agree with the intention of the change, as similar topic was discussed in the previous meeting. If CR was agreed, we would like to have a slight modification to the note:*NOTE: The UE* *stores the deprioritisation request irrespective of any cell reselection absolute priority assignments (by dedicated or common signalling) and regardless of the serving cell if it is NR or other RATs unless specified otherwise.*in addition, I would like to know what is the intention behind this clause? |
| MediaTek | Yes | And we think original wording is okay as it aligned with LTE wording. The yellow highlighted part is not used for now but there is no harm to keep it.  |
| ZTE | Yes | This modification is aligned with LTE spec. |
| Huawei, HiSilicon | Yes | Proponent. This “*unless specified otherwise*” clause is the same as NOTE in LTE RRC spec. And we don’t see exceptional case for this. |
| OPPO | Yes | It’s aligned with LTE |
| Nokia | No | First of all, NOTEs are not requirements for UE so saying that NR misses some note from LTE does not mean anything. Secondly in our view deprioritization handling is clear in 38.304.If anything in NOTE needs to be clarified due to editorial nature we are okay to push the change to rapporteur CR quoting LTE alignment. |
| CATT | Yes | Align with LTE |
| LG | Yes | This was discussed several times, and the CR is in line with the conclusion of the previous discussions. The CR will allow us to avoid repeating the same discussion again.  |
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**Question 8**: if you agree with the CR, is there a need for a separate CR, given a similar CR that carries the same intention was “in principle agreed” during the last meeting (R2-2106300/6308)?

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| Answers to Question 8 |
| Company | Yes/No | Comments |
| QCOM | Neutral | Will go with the majority |
| MediaTek | No | We prefer to just have single CR to address same issue.  |
| ZTE | Neutral | Will go with the majority. |
| Huawei, HiSilicon | Yes | This CR also covers “override” handling, which is not mentioned in these IPA CRs. |
| OPPO | No | We slightly prefer the CR from R2-2106182 |
| CATT | Yes | The IPA CRs have the handling on the timer which is not included in this CR. |
| LG | No | Issues are essentially the same, i.e. T325 should not stop, so it seems fine to merge 6182/6283 into 6300/6308. |
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**Summary 6**: TBD.

**Proposal 6**: TBD.

## 3.5 Other

The CRs related to this topic are:

[R2-2106178](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106178.zip) OverheatingIndicationProhibitTimer for SCG in (NG)EN-DC Qualcomm Incorporated CR Rel-15 38.331 15.13.0 2672 - F NR\_newRAT-Core

[R2-2106179](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106179.zip) OverheatingIndicationProhibitTimer for SCG in (NG)EN-DC Qualcomm Incorporated CR Rel-16 38.331 16.4.1 2673 - A NR\_newRAT-Core

This CR clarifies that the prohibit timer (in the 38.331 spec) can’t be used to configure the NR SCG in (NG)EN-DC, and for the (NG)EN-DC case, the prohibit timer for overheating is only configured by the MN eNB. Therefore a clarification was added to the “overheatingIndicationProhibitTimer” field description that this timer is not used in (NG)EN-DC.

**Question 9**: Do you agree with the proposed changed? Please provide comment if needed.

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| Answers to Question 9 |
| Company | Yes/No | Comments |
| QCOM | Yes | Proponent As per the current 38.331 spec, nothing prevents the network from configuring this overheating prohibit timer for the NR NCG while UE is in (NG)EN-DC. **This CR is aligned with the previous effort to clarify the overheating parameters (e.g. reducedCCsDL/ reducedCCsUL) and their usage with EN-DC vs NR-DC** |
| MediaTek | No | This is related to the overheating of SCG feature introduced in TEI-16. So, R15 change is not necessary.The IE *OtherConfig* is not included in SN (NR) RRC message at all in R15. In R16, for SCG, IE *OtherConfig* could be used for some configuration, but the field *overheatingAssistanceConfig* should not be present. This is captured in the following description. ***otherConfig***Contains configuration related to other configurations. When configured for the SCG, only fields *drx-PreferenceConfig, maxBW-PreferenceConfig, maxCC-PreferenceConfig, maxMIMO-LayerPreferenceConfig*, *minSchedulingOffsetPreferenceConfig, btNameList, wlanNameList, sensorNameList* and *obtainCommonLocation* can be included. |
| Huawei, HiSilicon | No | Agree with the intention that the “*overheatingIndicationProhibitTimer*” in TS 38.331 cannot be used in (NG)EN-DC. However, in (NG)EN-DC, the configuration for overheating only comes from the MN, the *overheatingAssistanceConfig* won't be included by the SN, so the spec is clear. |
| OPPO | No | The reason for change is not crystal clear to us. It’s agreed that one overheating prohibit timer is shared between MN and SN, and it’s also said that MN (eNB) can configure the timer in EN-DC case. Then, to use, why this timer configured by MN can not be shared by SN? |
| Nokia | No | Agree with Huawei and others |
| CATT | No | Agree with MTK and Huawei. |
| LG | No | We have the same understanding as MTK that the field description of otherConfig already captures the restriction.  |
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**Summary 7**: TBD.

**Proposal 7**: TBD.

## 3.6 L2 Parameter

The CRs related to this topic are:

[R2-2106077](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106077.zip) Correction on flow remapping to an added DRB Sequans Communications CR Rel-15 38.331 15.13.0 2666 - F NR\_newRAT-Core

[R2-2106079](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_114-e%5CDocs%5CR2-2106079.zip) Correction on flow remapping to an added DRB Sequans Communications CR Rel-16 38.331 16.4.1 2667 - A NR\_newRAT-Core

The CR clarifies that since a QFI value can be included at most once across configured instances of *SDAP-Config* with the same value of *pdu-Session,* the network cannot perform direct remapping to an added DRB, unless the old DRB is released. Therefore the CR add the removal of the QFI from the old DRB in case of flow remapping to a newly added DRB.

**Question 10**: do you agree with the CR? Please provide comment if needed.

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| Answers to Question 10 |
| Company | Yes/No | Comments |
| QCOM | Neutral | We don’t think the CR is needed, but we will go with the majority.  |
| MediaTek | Yes | Not sure why the change is missing in DRB Add part but anyway it seems aligned with the original intention. |
| ZTE | Yes |  |
| Huawei, HiSilicon |  | Not essential, given that the clarification is already there in the field description. |
| OPPO | Yes |  |
| Nokia | No | This correction is not essential and does not change the current understanding as Huawei pointed out. What would be the problem today with the current spec that does not allow this proposed behavior? |
| CATT | Yes |  |
| LG | Yes | Same text is already included for DRB modification case. It might be better to align the text for DRB addition case. |
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**Summary 8**: TBD.

**Proposal 8**: TBD.

# 4 Discussion Phase 2

TBD.

# 5 Conclusion

TBD.