**3GPP TSG RAN WG2 Meeting #110-e R2-200xxxx  
E-Conference, 1st – 12th June 2020**

**Agenda item: 5.4.2**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Summary of [AT110e][012][NR15] LTE changes related to NR (Nokia)**

**Document for: Discussion and Decision**

1. Introduction

This is a summary of below offline discussion:

### 5.4.2 LTE changes related to NR

* [AT110e][012][NR15] LTE changes related to NR (Nokia)

Scope: Treat all documents under 5.4.2, 5.4.2.0, 5.4.2.1 (proponents are responsible to explain and drive)

Part 1: Agree In-principle agreed CRs, for others: Decision whether to make corrections or not, identify agreeable corrections. Deadline: June 4, 0700 UTC.

Part 2: For others, for agreeable parts, continuation to agree CRs. Deadline: June 10, 0700 UTC

2. Discussions

## 2.0 Discussion on IPA CRs in 5.4.2.0

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| Company | Any comments on IPA CRs? Feedback here with CR number and comment |
| Lenovo | CR R2-2004606: Cover page issues: wrong meeting# and dates. |
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Phase 1 summary:

[Rapporteur] Fix CR R2-2004606: Cover page issues: wrong meeting# and dates.

## 2.1 Clarification to TTI bundling configuration in NE-DC

The following documents are relevant for the discussion:

[R2-2005660](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005660.zip) Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell, CMCC, Google Inc., vivo CR Rel-15 36.331 15.9.0 4252 2 F NR\_newRAT-Core [R2-2005195](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005195.zip)

[R2-2005661](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005661.zip) Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell, CMCC, Google Inc., vivo CR Rel-16 36.331 16.0.0 4253 2 A NR\_newRAT-Core [R2-2005196](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005196.zip)

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| Company | Comments |
| Nokia | [Proponent] Since last meeting we have listed the use case and explained the scenario in detail on the cover page. Companies are requested to check the cover page to understand our point of view. |
| Ericsson | As also commented in the previous meeting, we agree that current specification does not allow TTI bundling in SCG.  When DC was added to LTE, it was discussed whether to support TTI bundling in the SCG. There was no clear use case for this and RAN2 instead decided that only the MCG can configure TTI bundling.  Even if this was explained by the proponent company a bit more in detail, still we think that the same argument above for normal LTE-DC applies also in NE-DC, i.e. there is no clear/important use case to justify this NBC change. The only difference is that the MCG happens to be an NR-node rather than an LTE-node.  This CR seems to be changing behaviour. We think that it is too late to do this change and also, we do not see the need to add this new behaviour.  **We think RAN2 should not agree the NBC changes proposed in this CR.** |
| Huawei | We agree that TTI bundling is useful since NE-DC can support voice over SCG, but it is not necessary. Considering the change is NBC, we prefer not to pursue the CRs. |
| Apple | TTI bundling is useful for the LTE voice transmission especially when UE is far from the cell centre. But in NE-DC we are not sure LTE SCG will deploy large coverage cell.  In addition, we should avoid NBC change in R15 spec. |
| Samsung | We agree that TTI bundling can be useful voice over SCG in NE-DC. We however also share the view that the b change seems NBC, so we prefer not introducing this now, at least for R15 . |
| MediaTek | We understand the use case is for voice over SCG in NE-DC but not convinced that it is an essential use scenario. At this stage, we prefer NOT to change the Rel-15 SPEC with additional function. |
| Qcom | Although it’s a crucial feature for voice on SCG, but for Rel.15 it seems too late to introduce such change. |
| Lenovo | We are fine with the CR and see no NBC issue considering the fact that in NR 38.306 the capability voiceOverSCG-BearerEUTRA-5GC is defined, see below.  voiceOverSCG-BearerEUTRA-5GC: Indicates whether the UE supports IMS voice over SCG bearer of NE-DC. |
| vivo | [Proponent] We do not think the analogy with LTE DC is quite similar. As voice is already support in LTE, when deploying NE-DC, operator may choose not have voice on NR, which is MCG. And just having voice on SCG. In case of NE-DC, we think voice call should not be restrict MCG only and there is no technical argument to make such a restriction. |

Phase 1 summary:

[Rapporteur] Companies do not see the scenario as essential to be fixed for Rel-15. Recommend CR not pursued.

## 2.2 Pcompensation for IRAT Cell Selection Criterion

The following documents are relevant for the discussion:

[R2-2004766](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004766.zip) Clarification on Pcompensation for IRAT Cell Selection Criterion Apple CR Rel-15 36.304 15.5.0 0791 - F NR\_newRAT-Core

[R2-2004767](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004767.zip) Clarification on Pcompensation for IRAT Cell Selection Criterion Apple CR Rel-16 36.304 16.0.0 0792 - A NR\_newRAT-Core

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| Company | Comments |
| Ericsson | We think that **the CRs are not needed**. In fact, in section 5.2.3.6 it says that the cell selection criteria for NR are specified in 38.304: **5.2.3.6 NR case in Cell Selection** The cell selection criteria and procedures in NR are specified in TS 38.304 [38]. |
| Huawei | Same view with Ericsson. |
| Apple | We are the proponent company.  Actually, we provide the CR especially for the inter-RAT Cell reselection case, not for selection case,  I think 5.2.3.6 is just for cell selection, and 5.2.4.5 is for the inter-RAT cell reselection case.  5.2.4.5 E-UTRAN Inter-frequency and inter-RAT Cell Reselection criteria  Our understanding is that Srxlev is used for inter-RAT cell reselection as indicated in 5.2.4.5, and it is calculated based on 36.304 according to the LTE SIB24 configuration, but for the Pcompensation it will refer to the usage in NR spec.  Based on the understanding, we would like to clarify the Pcompensation for IRAT cell reselection criterion in LTE spec. |
| Nokia | This is already written in 5.2.3.6.. No need to duplicate. We agree with Ericsson, Huawei that CRs are not needed. |
| Samsung | Similar view as Ericsson |
| MediaTek | We also think the change is not needed. |
| Qcom | To keep each RAT’s calculation in its own spec and no need for cross-referencing … CR is not needed. |
| vivo | The clarification proposed is just reiterating what is already said “The cell selection criteria and procedures in NR are specified in TS 38.304”. So we do not think the CR is needed. |

Phase 1 summary:

[Rapporteur] Companies do not see anything broken with current text. Recommend CR not pursued.

## 2.3 Clarification on PDCP version change in Rel-15

The following documents are relevant for the discussion:

[R2-2005232](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005232.zip) Clarification on PDCP version change in Rel-15 Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4152 3 F NR\_newRAT-Core R2-2003687

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| Company | Comments |
| Ericsson | In the last meeting, we agreed on the compromise to not change Rel-15 and we would like to stick to this principle, unless there is something very critical to be corrected.  Since this does not look the case for this CR, **we disagree to have these changes.** |
| Huawei | [Proponent] RAN2 agreed in R2-2004191 to clarify in Rel-16 that:  - PDCP version change also applies in LTE without SN/SCG  - For DRBs, PDCP version change can be performed by release and addition of the RB, with or without mobilityControlInfo  - For DRBs and for SRBs, it can be done using the full configuration option  All these clarification equally apply to Rel-15, with the only difference that for DRBs in Rel-15, PDCP version change by release and addition of the DRB is only supported with mobilityControlInfo.  In other words, the highlighted parts above also apply to R15 and the current text is not aligned with this understanding. Therefore we propose the following changes (which are mimicking the agreed changes in R16 with the exception that PDCP version change without HO is not supported for R15):  When connected to EPC, change to NR PDCP or vice versa, can be done for both SRBs and DRBs as follows. For DRBs, it can be performed using an *RRCConnectionReconfiguration* message including the *mobilityControlInfo* (handover) by release and addition of the concerned RB. For SRBs, it can be performed using an *RRCConnectionReconfiguration* message with the *mobilityControlInfo* (handover) by release and addition of the concerned PDCP entity for SRBs. For SRBs and DRBs, it can also be performed using the full configuration option. The same *RRCConnectionReconfiguration* message may be used to make changes regarding the CG(s) used for transmission. For SRB1, change from E-UTRA PDCP to NR PDCP type may, before initial security activation, also be performed using an *RRCConnectionReconfiguration* message not including the *mobilityControlInfo*. |
| Apple | We have agreed the R16 CR with early implementation, Therefore, we don’t need to change R15 spec. |
| Nokia | Agree with Ericsson and Apple that the Rel-15 is applicable due to the magic sentence and we don’t need Rel-15 CR separately as RAN2 discussed. |
| Samsung | We fully agree with Ericsson. We think that addressing the issue only in Rel-16 with early implementation is the only possible compromise given that companies have totally different views.  We have rather strong concerns regarding the changes in the CR. |
| MediaTek | We are fine with the CR but understand that we have discussed this in last meeting and agree to have R16 CR with early implementation. It is also fine to leave R15 unclear if other companies still have concern on this CR. |
| Qcom | Since Rel.16 CR is an early implementation, no need to introduce this change to Rel.15 |
| vivo | Agree with Ericsson, during [AT109bis-e][001][NR15] PDCP version change, most companies just want the change for Rel-16 only. So do not think we should discuss again. |

Phase 1 summary:

[Rapporteur] Companies do not see need for anything on top with agreements made during last meeting on the same topic. Recommend CR not pursued.

# 3. Conclusion

Phase 1 concludes as follows:

Phase 1 summary:

* IPA CRs
  + [Rapporteur] Fix CR R2-2004606: Cover page issues: wrong meeting# and dates.
* Clarification to TTI bundling configuration in NE-DC
  + Companies do not see the scenario as essential to be fixed for Rel-15. Recommend CR not pursued.
* Pcompensation for IRAT Cell Selection Criterion
  + [Rapporteur] Companies do not see anything broken with current text. Recommend CR not pursued
* Clarification on PDCP version change in Rel-15
  + [Rapporteur] Companies do not see need for anything on top with agreements made during last meeting on the same topic. Recommend CR not pursued.

# References

#### 5.4.2.0 In-principle Agreed CRs

[R2-2004450](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004450.zip) Avoiding security risk for RLC AM bearers during termination point change Nokia, Nokia Shanghai Bell CR Rel-15 38.331 15.9.0 1539 2 F NR\_newRAT-Core R2-2004246

[R2-2004451](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004451.zip) Avoiding security risk for RLC AM bearers during termination point change Nokia, Nokia Shanghai Bell CR Rel-15 36.331 15.9.0 4241 2 F NR\_newRAT-Core R2-2004247

[R2-2004452](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004452.zip) Avoiding security risk for RLC AM bearers during termination point change Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.0.0 1599 - A NR\_newRAT-Core

[R2-2004453](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004453.zip) Avoiding security risk for RLC AM bearers during termination point change Nokia, Nokia Shanghai Bell CR Rel-16 36.331 16.0.0 4293 - A NR\_newRAT-Core

[R2-2004605](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004605.zip) Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-16 36.331 16.0.0 4262 2 F NR\_newRAT-Core R2-2004191

[R2-2004606](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004606.zip) Allowing PDCP version change without handover Ericsson, Intel Corporation CR Rel-16 36.306 16.0.0 1754 2 F NR\_newRAT-Core R2-2004192

[R2-2005583](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005583.zip) UE measurement capability requirements for NR Google Inc. CR Rel-15 36.331 15.9.0 4281 2 F NR\_newRAT-Core R2-2004262

[R2-2005586](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005586.zip) UE measurement capability requirements for NR Google Inc. CR Rel-16 36.331 16.0.0 4289 1 A NR\_newRAT-Core R2-2004263

All above Treated by email [012]

#### 5.4.2.1 Other

[R2-2005728](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005728.zip) Reply LS on Calculation of ShortResumeMAC-I (S3-201489; contact: Huawei) SA3 LS in Rel-15 5GS\_Ph1-SEC To:RAN2

No action, proposed noted.

[R2-2005195](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005195.zip) Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell, CMCC, Google Inc. CR Rel-15 36.331 15.9.0 4252 1 F NR\_newRAT-Core R2-2003156 Revised

[R2-2005660](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005660.zip) Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell, CMCC, Google Inc., vivo CR Rel-15 36.331 15.9.0 4252 2 F NR\_newRAT-Core [R2-2005195](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005195.zip)

[R2-2005196](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005196.zip) Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell, CMCC, Google Inc. CR Rel-16 36.331 16.0.0 4253 1 A NR\_newRAT-Core R2-2003157 Revised

[R2-2005661](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005661.zip) Clarification to TTI bundling configuration in NE-DC Nokia, Nokia Shanghai Bell, CMCC, Google Inc., vivo CR Rel-16 36.331 16.0.0 4253 2 A NR\_newRAT-Core [R2-2005196](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005196.zip)

[R2-2004766](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004766.zip) Clarification on Pcompensation for IRAT Cell Selection Criterion Apple CR Rel-15 36.304 15.5.0 0791 - F NR\_newRAT-Core

[R2-2004767](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2004767.zip) Clarification on Pcompensation for IRAT Cell Selection Criterion Apple CR Rel-16 36.304 16.0.0 0792 - A NR\_newRAT-Core

[R2-2005232](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_110-e\Docs\R2-2005232.zip) Clarification on PDCP version change in Rel-15 Huawei, HiSilicon CR Rel-15 36.331 15.9.0 4152 3 F NR\_newRAT-Core R2-2003687

All above Treated by email [012]