**3GPP TSG-RAN WG2 Meeting #110-e *R2-200xxxx***

**Online, 1–12 June 2020**

**Agenda item: 5.3.1.1 and 5.3.2.1**

**Source: Samsung**

**Title: Report of [AT110e][013][NR15] User Plane Corrections (Samsung)**

**Document for: Discussion and Agreement**

# 1 Introduction

This is to report the result of the following email discussion in RAN2#110-e Meeting [1].

**[AT110e][013][NR15] User Plane Corrections (Samsung)**

 Scope: Treat R2-2004423, R2-2004424, R2-2004940, R2-2004942, R2-2005555, R2-2005557. R2-2005471, and possibly in part 2 R2-2005556, R2-2005558, R2-2005559, R2-2005560, R2-2005561, R2-2005472 (proponents are responsible to explain and drive)

 Part 1: Decision whether to make corrections or not, identify agreeable corrections. Deadline: June 4, 0700 UTC.

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

# 2 Discussion

## 2.1 Obtaining of PH values

The following contributions were submitted to capture the missing parts (i.e. LTE PH from E-UTRA MAC entity) from the existing text:

[R2-2004423](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004423.zip) Clarification on obtaining of PH values Samsung CR Rel-15 38.321 15.8.0 0738 - F NR\_newRAT-Core

[R2-2004424](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004424.zip) Clarification on obtaining of PH values Samsung CR Rel-16 38.321 16.0.0 0739 - A NR\_newRAT-Core

**Question 1: Do you agree with the proposed change?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with CR? | Additional comments/suggestion |
| Samsung | Yes | The CR merely tries to correct the mistake, so it would not result any NBC issue.  |
| OPPO | Yes |  |
| Nokia, Nokia Shanghai Bell | Yes |  |
| Google | Yes |  |
| vivo | Yes | This correction is fine to us. |

**Conclusion:**

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## 2.2 Preamble selection for beam failure recovery

The following contributions were submitted to change the existing behaviour for preamble selection when dedicated preamble is configured for beam failure recovery:

[R2-2004940](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004940.zip) Clarification on preamble selection for beam failure recovery Google Inc. CR Rel-15 38.321 15.8.0 0749 - F NR\_newRAT-Core

[R2-2004942](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004942.zip) Clarification on preamble selection for beam failure recovery Google Inc. CR Rel-16 38.321 16.0.0 0750 - A NR\_newRAT-Core

**Question 2: Do you agree with the proposed change?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with CR? | Additional comments/suggestion |
| Samsung | No | RAN2 already discussed the issue long time back, and concluded to perform CBRA if no beams meet the condition, as in the current specification. |
| OPPO | No |  |
| Nokia, Nokia Shanghai Bell | No | Agree with Samsung. |
| Google | Yes | For the case no SSB and CSI-RS have RSRP above the thresholds RAN2 has not disagreed or agreed whether UE is allowed to use a dedicated preamble for beam failure recovery or not. In addition to CBRA that has been allowed in current MAC spec, we think UE should be allowed to use that dedicated preamble becasue that is the purpose of the dedicated preamble. Whether CBRA or CFRA should be used is left to UE implementation.  |
| vivo | No | The proposed solution is an optimization, instead of a correction.  |

**Conclusion:**

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## 2.3 BWP inactivity timer operation

The following contributions were submitted to clarify whether *bwp-InactivityTimer* is started (or not) if the MAC entity receives PDCCH which results BWP switching (to default BWP):

[R2-2005555](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005555.zip) Discussion on clarification of BWP inactivity timer operation ASUSTeK discussion Rel-15 NR\_newRAT-Core

[R2-2005556](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005556.zip) Clarification of BWP inactivity timer operation ASUSTeK CR Rel-15 38.321 15.8.0 0753 - F NR\_newRAT-Core

**Question 3: Do you agree with the proposed change?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with CR? | Additional comments/suggestion |
| Samsung | No | From the discussion paper, interpretation b is correct (i.e. not to (re-)start *bwp-InactivityTimer* if the MAC entity receives PDCCH, which results BWP switching to default/initial BWP. However this behaviour is obvious from the existing text, and thus no changes are needed. |
| OPPO | No | The spec is already clear that when PDCCH indicating BWP switching, and if the active BWP after switching happens to be default or initial BWP, UE does not start bwp-InactivityTimer |
| Nokia, Nokia Shanghai Bell | No | We can confirm understanding b in chairman minutes. |
| Google | No | When receving the PDCCH with BWP switching indicator and downling assignment or uplink grant, MAC will first switch to the target BWP and then receive downlink data or transmit uplink data on the target BWP. If that is correct, there is no need to clarify the spec. |
| vivo | No | Obviously, the *bwp-InactivityTimer* is only associated with the non-initial/default DL BWP. In this sense, the current spec is quite clear. Anyway, we are okay to have a clarification in chairman minutes.  |

**Conclusion:**

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## 2.4 Presence of IEs in BeamFailureRecoveryConfig

The following contributions were submitted to clarify whether network should always configure *rsrp-ThresholdSSB* and *rach-ConfigBFR* (which contains *powerRampingStep*, *preambleReceivedTargetPower*, *preambleTransMax*, and *ra-ResponseWindow*) in *BeamFailureRecoveryConfig* for CFRA BFR:

[R2-2005557](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005557.zip) Discussion on presence of IEs in BeamFailureRecoveryConfig ASUSTeK discussion Rel-15 NR\_newRAT-Core

[R2-2005558](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005558.zip) Clarification on presence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-15 38.331 15.9.0 1679 - F NR\_newRAT-Core

[R2-2005559](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005559.zip) Clarification on presence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-16 38.331 16.0.0 1680 - A NR\_newRAT-Core

**Question 4: Do you agree with the proposed change?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with CR? | Additional comments/suggestion |
| Samsung | No | The proposed changes are correct: both *rsrp-ThresholdSSB* and *rach-ConfigBFR* should be present for CFRA BFR. However, it is already clear from the field descriptions of RRC and the procedures in MAC (e.g. MAC simply says '*ra-ResponseWindow* configured in *BeamFailureRecoveryConfig*' for CFRA BFR without condition). |
| OPPO | No | We actually think network will not always configure these parameters as they are optional in current 331. So, we prefer to clarify that if these parameters are not configured in BeamFailureRecoveryConfig, UE can use those configured in RACH-ConfigCommon. It seems the CRs in 2.5 are reasonable. |
| Nokia, Nokia Shanghai Bell | No | Agree with the intention but according to the specifications, it seems clear the NW should configure it like this. |
| Google | Yes | We think this clarification is needed to align RRC and MAC. |
| vivo | No | In our opinion, the NW would always configure all the above-mentioned parameters in the very first configuration of BFR-config. Based on this, we think the issue raised in the paper should be regarded as the erroneous NW configuration issue. Furthermore, we don’t see the need to specify the NW behavior in the RRC spec.  |

**Conclusion:**

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## 2.5 Handling on absence of IEs in BeamFailureRecoveryConfig

The following contributions were submitted to clarify which values would be used if *rach-ConfigBFR* (which contains *powerRampingStep*, *preambleReceivedTargetPower*, *preambleTransMax*, and *ra-ResponseWindow*) and/or *rsrp-ThresholdSSB* is not configured in *BeamFailureRecoveryConfig* (i.e. to use the values in *RACH-ConfigCommon*):

[R2-2005560](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005560.zip) Handling on absence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-15 38.321 15.8.0 0754 - F NR\_newRAT-Core

[R2-2005561](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005561.zip) Handling on absence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-16 38.321 16.0.0 0755 - A NR\_newRAT-Core

**Question 5: Do you agree with the proposed change?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with CR? | Additional comments/suggestion |
| Samsung | No | The proposed changes are correct, but the values in *RACH-ConfigCommon* are the only available values if *beamFailureRecoveryConfig* is not configured, so no ambiguity exists. |
| OPPO | Yes | See comments above. |
| Nokia, Nokia Shanghai Bell | No | To us, the specification mandates configuring those values in case *BeamFailureRecoveryConfig* is configured. |
| Google | No | It is sufficient to have gNB always configure those parameters. |
| vivo | No | In our understanding, if NW doesn’t configure *rach-ConfigBFR* or *rsrp-ThresholdSSB* within BFR-config for CFRA-BFR, the smart UE will consider the configuration as an erroneous NW configuration (also may ignore it). We don’t see the need to handle this error case in the MAC spec. |

**Conclusion:**

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## 2.6 Report of RLC segment in RLC STATUS PDU

The following contributions were submitted to change the interpretation of the missing RLC SDU segment at the transmitting side of RLC AM entity in the STATUS PDU due to truncated NACK SN + SOstart + SOend:

[R2-2005471](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005471.zip) Discussion on missing RLC segment in RLC STATUS PDU Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

[R2-2005472](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005472.zip) Clarification on the reception status of RLC STATUS PDU Huawei, HiSilicon CR Rel-15 38.322 15.5.0 0035 - F NR\_newRAT-Core

**Question 6: Do you agree with the proposed change?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with CR? | Additional comments/suggestion |
| Samsung | No | The problem comes from incorrect implementation: UE shall report not-received parts as NACK. |
| Nokia, Nokia Shanghai Bell | No | The specification is clear. Transmitting entity interprets everything below ACK\_SN as received which is not explicitly NACKed. Hence, the Rx entity shall not indicate ACK\_SN of a certain SN#X if it cannot include all the missing segment information for a SN#Y < SN#X. |
| vivo | No | In our understanding, the proposed solution is intended to handle the misunderstanding about the reception status at the NW side due to bad UE implementation. In practice, a smart UE shall report RLC status with ACK\_SN=70, if all the reception status of RLC SDU segments for the RLC SDU with SN=70 cannot be transmitted via the same MAC PDU. Even if the bad UE implementation is possible, we don’t see the need to capture the potential NW implementation in the RLC spec. |
|  |  |  |

**Conclusion:**

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# 3 Conclusion

### 5.3.1 MAC

#### 5.3.1.1 Other

[R2-2004423](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004423.zip) Clarification on obtaining of PH values Samsung CR Rel-15 38.321 15.8.0 0738 - F NR\_newRAT-Core

[R2-2004424](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004424.zip) Clarification on obtaining of PH values Samsung CR Rel-16 38.321 16.0.0 0739 - A NR\_newRAT-Core

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[R2-2004940](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004940.zip) Clarification on preamble selection for beam failure recovery Google Inc. CR Rel-15 38.321 15.8.0 0749 - F NR\_newRAT-Core

[R2-2004942](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2004942.zip) Clarification on preamble selection for beam failure recovery Google Inc. CR Rel-16 38.321 16.0.0 0750 - A NR\_newRAT-Core

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[R2-2005557](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005557.zip) Discussion on presence of IEs in BeamFailureRecoveryConfig ASUSTeK discussion Rel-15 NR\_newRAT-Core

[R2-2005558](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005558.zip) Clarification on presence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-15 38.331 15.9.0 1679 - F NR\_newRAT-Core

[R2-2005559](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005559.zip) Clarification on presence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-16 38.331 16.0.0 1680 - A NR\_newRAT-Core

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[R2-2005560](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005560.zip) Handling on absence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-15 38.321 15.8.0 0754 - F NR\_newRAT-Core

[R2-2005561](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005561.zip) Handling on absence of IEs in BeamFailureRecoveryConfig ASUSTeK CR Rel-16 38.321 16.0.0 0755 - A NR\_newRAT-Core

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### 5.3.2 RLC

#### 5.3.2.1 Other

[R2-2005471](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005471.zip) Discussion on missing RLC segment in RLC STATUS PDU Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

[R2-2005472](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_110-e%5CDocs%5CR2-2005472.zip) Clarification on the reception status of RLC STATUS PDU Huawei, HiSilicon CR Rel-15 38.322 15.5.0 0035 - F NR\_newRAT-Core

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# 4 References

[1] R2-110e Chair Notes 20-06-01 1200 UTC.docx