**3GPP TSG-RAN WG2 Meeting #113-e *R2-210xxxx***

**Online, 25 January–5 February 2021**

**Agenda item: 5.3.1**

**Source: Samsung**

**Title: Report of [AT113-e][002][NR15] User Plane I (Samsung)**

**Document for: Discussion and Agreement**

# 1 Introduction

This is to report the result of the following email discussion in RAN2#113-e Meeting [1].

* [AT113-e][002][NR15] User Plane I (Samsung)

Scope: MAC Treat R2-2100206, R2-2100207, R2-2101510, R2-2101337, R2-2101769, R2-2101351, R2-2101593, R2-2101522, R2-2101523, R2-2101524, R2-2101525

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

Intended outcome: Report and Agreed CRs.

Deadline: Schedule A

# 2 Contact Information

|  |  |
| --- | --- |
| Company | Contact: Name (E-mail) |
| Samsung | Jaehyuk JANG (jack.jang@samsung.com) |
| Qualcomm | Linhai He (linhaihe@qti.qualcomm.com) |
| Huawei, HiSilicon | Chong Lou (louchong@huawei.com) |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# 3 Discussion

## 3.1 Miscellaneous corrections

R2-2100206 Miscellaneous corrections Samsung CR Rel-15 38.321 15.11.0 1003 - F NR\_newRAT-Core

R2-2100207 Miscellaneous corrections Samsung CR Rel-16 38.321 16.3.0 1004 - A NR\_newRAT-Core

|  |  |  |
| --- | --- | --- |
| Company | Agree as is; Agree with changes; Disagree | Detailed Comments |
| Samsung | Agree as is (Rel-15) | Editorial corrections as indicated in the coversheet |
| OPPO | Agree with change | The changes in R15 CR is not mirrored in R16, e.g., the first change “MAC header”. |
| Qualcomm | Agree as is |  |
| HW | Agree as is (Rel-15) |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Conclusion:**

**TBD**

## 3.2 CG and DRX Inactivity Timer

(The following four contributions are discussed together here.)

R2-2101510 Activation of CG and DRX Inactivity Timer LG Electronics Inc. discussion Rel-15 NR\_newRAT-Core

R2-2101337 Activation of CG and DRX Inactivity Timer Ericsson discussion Rel-15 NR\_newRAT-Core R2-2010621

R2-2101769 Further discussions on DRX InactivityTimer operations Huawei, HiSilicon discussion Rel-15 NR\_newRAT-Core

R2-2101351 Activation of CG/SPS and DRX Inactivity Timer Apple discussion Rel-15 NR\_newRAT-Core, TEI15

The issue has been discussed for a long time, and rappoteur thinks that it would be difficult to change Rel-15 behavior anyway as UE vendors have different implementation from the discussion at the last meeting. If so, we can start the discussion for Rel-16 onwards, and the following options can be considered:

- Option 1: Leave it to UE implemenation as in Rel-15  
(which implies that network should not start *drx-InactivityTimer*, and no specification changes would be needed)

- Option 2: UE (re-)starts *drx-InactivityTimer* when it receives PDCCH to activate DL SPS/UL CG type 2  
(which implies that we could add a NOTE to clarify this)

- Option 3: UE does not (re-)start *drx-InactivityTimer* when it receives PDCCH to activate DL SPS/UL CG type 2  
(which implies that we could add a NOTE to clarify this)

- Option 4: …

|  |  |  |
| --- | --- | --- |
| Company | Which option do you prefer? | Detailed Comments |
| Samsung | Option 1 or 2 | For Rel-15, we can leave it to UE implementation to avoid any impact to UEs in the field.  For Rel-16, we still prefer to have the same behaviour as in LTE (i.e. to Option 2), but can go with Option 1.  Regarding *drx-HARQ-RTT-TimerDL*, *drx-HARQ-RTT-TimerUL*, *drx-RetransmissionTimerDL*, and *drx-RetransmissionTimerUL* in R2-2101510, we can rely on the behaviours in the existing text anyway (i.e. under 'if a MAC PDU is received/transmitted…'), and thus no specification changes would be needed. |
| OPPO | Option1 | For R15, we can leave it to UE implementation. For R16, we can go with LTE baseline which is to start the timer. |
| Qualcomm | Option 3, or Option 1 | For Rel-15, we think it is a sensible wayforward by leaving it to network implementation to handle different UE implementations already in the field.  For Rel-16, we prefer NOT to re-/start DRX inactivity timer by activation DCIs, because the LTE behavior is not power efficient. For example, if activation DCI is used for link adaptation for a VoIP connection, UE would unnecessarily extend its DRX inactivity timer constantly, which is not desirable for UE power saving. We prefer to capture this change in the spec, so that we don’t have to revisit this issue down the road. But if majority prefer to leave it to network implementation and RAN2 have that captured in chair’s notes, that is fine with us too. |
| HW | Option 2 | First, we would like to clarify that leaving to UE implementation (option 1) is actually option 3 from network’s point of view.  Actually the relevant text is inherited from LTE, and it is running so well for a long period, so there is no reason to revisit the UE behaviour in NR, that is to say, Option 2 should be adopted without any spec change. In case majority still sees room for ambiguity, we are okay to capture a NOTE in Rel-15/Rel-16 to clarify option 2 ( it can be merged into the rapporteur CR as no functionality is changed or just captured into the Chairman notes).  Regarding the other timers in R2-210510, we share the same view as Samsung. |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Conclusion:**

**TBD**

## 3.3 CG Type 1 upon TA expired

(The following five contributions are discussed together here.)

R2-2101593 Discussion on the handling of CG type 1 resources when TA timer is expired ZTE Corporation, Sanechips discussion Rel-15 NR\_newRAT-Core

R2-2101522 CR on CG type 1 resources handling when timeAlignmentTimer is expired-Opt 1 ZTE Corporation, Sanechips CR Rel-15 38.321 15.11.0 1038 - F NR\_newRAT-Core

R2-2101523 CR on CG type 1 resources handling when timeAlignmentTimer is expired-Opt 2 ZTE Corporation, Sanechips CR Rel-15 38.321 15.11.0 1039 - F NR\_newRAT-Core

R2-2101524 CR on CG type 1 resources handling when timeAlignmentTimer is expired-Opt 1 ZTE Corporation, Sanechips CR Rel-16 38.321 16.3.0 1040 - F NR\_newRAT-Core

R2-2101525 CR on CG type 1 resources handling when timeAlignmentTimer is expired-Opt 2 ZTE Corporation, Sanechips CR Rel-16 38.321 16.3.0 1041 - F NR\_newRAT-Core

For your convenience, proposals in R2-2101593 are copied below:

|  |
| --- |
| Proposal 1: RAN2 confirm that the RRC configuration for type 1 configured grant will not be released in case the timeAlignmentTimer expires (i.e. delta configuration is allowed. e.g. for pusch-RepTypeIndicator-r16).  Proposal 2: RAN2 confirm that, after the expiration of timeAlignmentTimer, the type 1 configured grant will not become available unless the type 1 configured grant is initialized again (i.e. will not become available automatically after the start of timeAlignmentTimer ).  Proposal 3:RAN2 confirm that, after the expiration of timeAlignmentTimer, the type 1 configured grant will become unavailable unless a new RRC configuration for type 1 configured grant is received (i.e. although the RRC configuration for type 1 configured grant is not released, RRC configuration for type 1 configured grant should be included in RRC signaling to enable the type 1 configured grant).  Proposal 4: If companies have the same understanding on the proposals 1-3, then the specs are clear. Otherwise, a CR is needed to clarify the expected behaviour on the handling of type1 configured grant in case the timeAlignmentTimer expires. |

|  |  |  |
| --- | --- | --- |
| Company | Do you agree with proposals 1 to 3 in R2-2101593?  Do you support either Option 1 in R2-2101522 or Option 2 in R2-2101523? | Detailed Comments |
| Samsung | No;  Option 1 partially (clear CG type 2 only) | We think that CG type 1 is not released upon expiry of TAT, and UE resumes CG type 1 without (re-)initializing it upon TAT becomes running, as in the current specification.  For the actual changes, RAN2 may consider updating the specification from Rel-15 that UE clears configured uplink grants of CG type 2 upon expiry of TAT. |
| OPPO | Yes | Maybe we need a Note to clarify the behaviour of CG type1 when TAT expiry and the behaviour once TA is obtained. |
| Qualcomm | See comments | Proposal 1: Agree;  Proposal 2 and 3: Disagree. Our understanding is that such re-initialization is not needed. “Clear” for type-1 CG only suspends the use of CG resource; the RRC configuration is not release. Once the blocking condition is cleared (i.e. TA is re-established), UE can use the CG resources again without RRC reconfiguration. If our understanding was not correct (i.e. if Proposal 2 is correct), then there is no essential difference between “release” and “clear” type-1 CG”.  Option 1 or 2: we think the current spec is clear enough. No change is necessary. |
| HW | Okay with the intention of Option 2 (suspend and resume) | We agree the UE behaviour should be discussed and clarified.  P1: Agree, which was discussed in Rel-15 with the conclusion that RRC will not release the RRC configurations for both CG Type 1 and Type 2. The difference between “release” and “clear” from the spec is that “clear” just indicates to disable the transmissions while the RRC configuration is stored.  P2 and P3: We share the similar view as QC. Given that the CG Type 1 resource is still kept in RRC, MAC can naturally resume the relevant transmission when TAT is running again. That is to say, Option 2 is the intended UE behaviour in our understandings. We are fine with either a CR or a NOTE captured in the minutes once a common understanding is achieved. |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Conclusion:**

**TBD**

# 4 Conclusion

**TBD**

# 5 References

[1] RAN2 113-e Chairman Notes 2021-01-25 0900 UTC