**3GPP TSG-RAN WG1 Meeting #110bis-e R1-220xxxx**

**e-Meeting, Oct 10th - 19th, 2022**

**Agenda Item: 8.17**

**Source: Moderator (ZTE)**

**Title: Summary of preparation phase email discussion for Rel-17 SDT**

**Document for: Discussion**

# Introduction

This document contains the summary of issues related to the maintenance of Rel-17 Small data transmission WI in RAN1#110bis-e meeting. The following email discussion is initiated to collect companies’ views:

[110bis-e-R17-Others-01] Email discussion to determine maintenance issues to be handled in RAN1#110bis-e by October 12 – Ziyang (ZTE)

* Additional email discussions will be set up once the maintenance issues for RAN1#110bis-e are determined

# Preparation phase discussion

The following issues are collected from companies’ contributions and summarized for the maintenance of Rel-17 SDT in RAN1#110bis-e.

|  |  |  |
| --- | --- | --- |
| Issue # | Description | TDoc # |
| 1 | CD-SSBs for RedCap UE SSB to PUSCH mapping  For RedCap UE performing SDT, vivo proposes that RAN1 should conclude that only CD-SSBs in initial DL BWP is used for SSB to CG PUSCH mapping and further discuss whether any specification change is needed to explicitly restrict the SSBs to be only among the SSBs configured by ssb-PositionsInBurst in SIB1 or by ServingCellConfigCommon. | R1-2208623 vivo |
| 2 | Redundancy versions of repetitions for CG-SDT  In last meeting, RAN1 captures RAN2 agreement in TS 38.213 as “For initial transmission or autonomous retransmission of an initial transport block provided for the PUSCH transmission as described in clause 18.0 in [19, TS 38.300], the UE encodes the transport block using redundancy version number 0”. In the draft CR, vivo proposes that the redundancy version determination should be based on clause 6.1.2.3 of 38.214 when repK-RV is provided. | R1-2208624 vivo |
| 3 | Repetitions for CG-SDT  In RAN1#110, in LS R1-2205736, RAN2 has the following reply on repetitions:  “With regards to the above issue about repetition for CG-SDT, the signalling in TS 38.331 reuses the existing ConfiguredGrantConfig and hence the signalling allows configuration of parameters related to repetition (i.e. repK, repK-RV (including repK-r17), pusch-RepTypeIndicator-r16 and frequencyHoppingPUSCH-RepTypeB-r16) within this IE.”  Therefore, ZTE, Xiaomi and Samsung propose to discuss how to capture repetitions in RAN1 spec. | R1-2208711 ZTE  R1-2209710 Samsung  R1-2209711 Samsung  R1-2209255 Xiaomi |
| 4 | Editorial correction on parameter name  Parameter name sdt-SSB-perCG-PUSCH in TS 38.213 in section 19.1 is not aligned with TS 38.331. | R1-2208712 ZTE |
| 5 | Power offset of feature combination  In the feature combination, power offset between Msg3 or MsgA-PUSCH and RACH preamble transmission namely deltaPreamble is introduced. If configured, this parameter overrides msg3-DeltaPreamble or msgA-DeltaPreamble. But in the current spec, this parameter is missing in TS 38.213, then the power determination of Msg3 and MsgA PUSCH in feature combination is incorrect. So ZTE proposes that parameter deltaPreamble should be captured in section 7.1.1. | R1-2208713 ZTE |
| 6 | QCL assumption for DL reception during subsequent SDT procedure  Xiaomi proposes that the DL beam for PDCCH and PDSCH reception can be changed along with the selected SSB for legacy RACH and the text in clause 19.1 and 19.2 for TS 38.213 can be changed. | R1-2209255 Xiaomi |
| 7 | Collision handling between valid PO and DL resources for HD-FDD UEs  For RedCap UE supporting SDT, if valid CG-SDT resource overlaps with DL resource, Xiaomi proposes to discuss the collision handling rule. | R1-2209255 Xiaomi |
| 8 | Paging monitoring for RedCap UE in separate BWP  Huawei proposes that if separate initial BWP does not include CD-SSB and CORESET#0, but is configured for SDT, a UE does not expect to be scheduled on the BWP during paging/SI update indication monitoring procedure and during CG-SDT resource verifying procedure.  The BWP paging/SI update indication monitoring procedure may include every paging monitoring occasions, SSB acquisition time, the possible retuning time, the time between the paging and the updated SI.  The CG-SDT resource verifying procedure may include SSB transmission time before every CG resources and the possible retuning time. | R1-2209831 Huawei |

To identify the essential issues, please provide your assessment “H/N/E” on these maintenance issues with the following classification:

* *High priority (H):* high-priority item (essential, pending issues, broken spec components) and proposed editorial changes that either enhance the clarity of the specs or correct mistakes
* *Non-essential (N)*: all other purposes such as spec optimization and low priority issues
* *Editorial (E)*: editorial issues that will be handled as editorial CRs (to be communicated to the editors/chairs)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Company | Issue#1 | Issue#2 | Issue#3 | Issue#4 | Issue#5 | Issue#6 | Issue#7 | Issue#8 |
| New H3C |  |  | H | E | H |  |  | H |
| Xiaomi |  |  | H | E | H | H | H |  |
| vivo | H | H | H | E | H |  |  |  |
| Intel |  |  | H | E | E |  |  |  |
| Qualcomm |  | H | H | E | E |  |  |  |
| ZTE |  | H | H | E | H |  |  |  |
| Samsung |  |  | H |  |  |  |  |  |
| Huawei | H | H | H |  |  | H |  | H |
| Ericsson |  | H | H | E | H |  |  |  |
| LGE |  |  | H | E |  | H |  |  |

Any other comments?

|  |  |
| --- | --- |
| Company | Comment |
| Samsung | For issue with redcap specific feature, e.g., separate initial DL bwp, HD-FDD operation, we suggest to discuss in redcap, instead of this agenda. |
| Huawei, HiSilicon | We are ok to discuss issue#8 in either SDT or RedCap, expecting coordination between moderators in this case in order not to miss it. |
| Ericsson | Ok with Samsung’s suggestion |

# Summary

According to companies’ comments, the following can be observed:

Issue#3, all companies support to discuss it

Issue#4 and 5, 7 or 8 out of 10 companies are fine to discuss as high priority or editorial issues

Issue#2, 5 out of 10 companies consider it as high priority issues

Issue#1, 6, 7 and 8, 3 or less out of 10 companies support to discuss them.

As our usual principle, issues with half or more support can be considered in this meeting, therefore, FL recommends to discuss the following issues:

Issue#2 Redundancy versions of repetitions for CG-SDT

Issue#3 Repetitions for CG-SDT, relevant tdoc:

Issue#4 Editorial correction on parameter name

Issue#5 Power offset of feature combination

# References

1. [R1-2208623](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2208623.zip) Remaining issues for NR small data transmissions in RRC INACTIVE state vivo
2. [R1-2208624](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2208624.zip) Corrections of reduncancy version of repeated CG PUSCH for SDT vivo
3. [R1-2208711](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2208711.zip) Correction on repetitions for CG-SDT ZTE, Sanechips
4. [R1-2208712](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2208712.zip) Correction on SSB subset for CG-SDT ZTE, Sanechips
5. [R1-2208](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2208713.zip)[713](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2208713.zip) Correction on deltapreamble of feature combination ZTE, Sanechips
6. [R1-2209710](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2209710.zip) Discussion on the repetition aspect for SDT in active state Samsung
7. [R1-2209711](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2209711.zip) Draft CR for the repetition aspect for SDT in active state Samsung
8. [R1-2209255](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2209255.zip) Discussion on physical layer aspects of small data transmission xiaomi
9. [R1-2209831](file:///D:\\zhoulei\\3GPP\\RAN1\\Docs\\R1-2209831.zip) Remaining issues on paging monitoring and measurement during SDT procedure Huawei, HiSilicon