3GPP TSG-RAN WG1 Meeting #107-e Draft R1-2112504

e-Meeting, 11th – 19th November 2021

Agenda Item: 8.6

Title: FL summary on RAN1 RRC parameter list for Rel-17 NR RedCap

Source: Moderator (Ericsson)

Document for: Discussion, Decision

# 1 Introduction

This feature lead (FL) summary (FLS) concerns the following email discussion for the Rel-17 work item (WI) for support of reduced capability (RedCap) NR devices [1].

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| [107-e-R17-RRC-REDCAP] Email discussion on Rel-17 RRC parameters for REDCAP – Johan (Ericsson)   * Email discussion to start on November 15 |

RAN1 agreements for this WI are summarized in [2]. The FLS for the RAN1#106bis-e discussion on the RRC parameter list can be found in [3] and the resulting draft RRC parameter list is available in [4] and [5]. For recommendations on RRC parameter list preparation, see [6]. The issues that are in the focus of this round of the discussion in this meeting are tagged FL2.

Follow the naming convention in this example:

* *RedCapParamFLS-v000.docx*
* *RedCapParamFLS-v001-CompanyA.docx*
* *RedCapParamFLS-v002-CompanyA-CompanyB.docx*
* *RedCapParamFLS-v003-CompanyB-CompanyC.docx*

If needed, you may “lock” a spreadsheet file for 30 minutes by creating a checkout file, as in this example:

* Assume CompanyC wants to update *RedCapParamFLS-v002-CompanyA-CompanyB.docx*.
* CompanyC uploads an empty file named *RedCapParamFLS-v003-CompanyB-CompanyC.checkout*
* CompanyC checks that no one else has created a checkout file simultaneously, and if there is a collision, CompanyC tries to coordinate with the company who made the other checkout (see, e.g., contact list below).
* CompanyC then has 30 minutes to upload *RedCapParamFLS-v003-CompanyB-CompanyC.docx*
* If no update is uploaded in 30 minutes, other companies can ignore the checkout file.
* Note that the file timestamps on the server are in UTC time.

In file names, please use the hyphen character (not the underline character) and include ‘v’ in front of the version number, as in the examples above and in line with the general recommendation (see slide 10 in [R1-2110752](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_107-e/Docs/R1-2110752.zip)), otherwise the sorting of the files will be messed up (which can only be fixed by the RAN1 secretary).

To avoid excessive email load on the RAN1 email reflector, please note that there is NO need to send an info email to the reflector just to inform that you have uploaded a new version of this document. Companies are invited to enter the contact info in the table below.

**FL1 Question 1-1: Please consider entering contact info below for the points of contact for this email discussion.**

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| **Company** | **Point of contact** | **Email address** |
| FUTUREWEI | Vip Desai | vipul.desai@futurewei.com |
| Intel Corporation | Debdeep Chatterjee | debdeep.chatterjee@intel.com |
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# References

1. [RP-211574](https://www.3gpp.org/ftp/TSG_RAN/TSG_RAN/TSGR_92e/Docs/RP-211574.zip), “Revised WID on support of reduced capability NR devices”, Ericsson

1. [R1-2110669](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_106b-e/Docs/R1-2110669.zip), “RAN1 agreements for Rel-17 NR RedCap”, Rapporteur (Ericsson)

1. [R1-2110383](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_106b-e/Docs/R1-2110383.zip), “FL summary on RAN1 RRC parameter list for Rel-17 NR RedCap”, Moderator (Ericsson)

1. [R1-2110384](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_106b-e/Docs/R1-2110384.zip), “Draft RAN1 RRC parameter list for Rel-17 NR RedCap”, Moderator (Ericsson)

1. [R1-2110680](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_106b-e/Docs/R1-2110680.zip), “Collection of higher layers parameter list for Rel-17 LTE and NR”, Moderator (Ericsson)

1. [R1-2111193](https://www.3gpp.org/ftp/TSG_RAN/WG1_RL1/TSGR1_107-e/Docs/R1-2111193.zip), “Recommendations for RAN1 RRC Parameter Preparation”, Moderator (Ericsson)

# 2 PRACH configuration

**FL1 Question 2-1a: Companies are invited to comment on PRACH configuration parameters in** [***RedCapParamList-v000***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v000.xlsx)**.**

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| **Company** | **Comments** |
| FUTUREWEI | Since support of the optional feature 2-step RACH is agreed, the current paragraph that lists both can be listed as two paragraphs or even two RRC parameters (one for 4-step, the other for 2-step).  An edit showing two paragraphs is presented. The clause "if no other UEs are also configured to use the resources" is unnecessary since RAN2 is managing the PRACH resources for RedCap.  When this configuration is present, it configures a RedCap-specific PRACH configuration ~~[~~using a separate PRACH resource and/or PRACH preamble partitioning ~~at least~~ for 4-step RACH~~, FFS for 2-step RACH]~~, where usage of the RedCap-specific PRACH configuration implicitly serves as an early RedCap UE indication ~~if no other UEs are also configured to use the resources~~. If the parameter is not present, RedCap UEs use the same PRACH configuration as non-RedCap UEs. [Whether RedCap-specific PRACH configuration is applied for RedCap UE in combination with e.g. CE may need to be clarified.]  When this configuration is present, it configures a RedCap-specific PRACH configuration ~~[~~using a separate PRACH resource and/or PRACH preamble partitioning ~~at least for 4-step RACH, FFS~~ for 2-step RACH~~]~~, where usage of the RedCap-specific PRACH configuration implicitly serves as an early RedCap UE indication ~~if no other UEs are also configured to use the resources~~. If the parameter is not present, RedCap UEs use the same PRACH configuration as non-RedCap UEs. [Whether RedCap-specific PRACH configuration is applied for RedCap UE in combination with e.g. CE may need to be clarified.] |
| FL2 | An updated draft parameter list has been provided in ***RedCapParamList-v001***, where the received comments on the PRACH configuration parameters have been considered.  **Question 2-1b: Companies are invited to comment on PRACH configuration parameters in** [***RedCapParamList-v001***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v001.xlsx)**.** |
| Intel | For 2-step RACH, we can perhaps delete the last sentence related to CE since CE is not supported for 2-step RACH.  ~~[Whether RedCap-specific PRACH configuration is applied for RedCap UE in combination with e.g. CE may need to be clarified.]~~ |

# 3 Initial DL BWP configuration

**FL1 Question 3-1a: Companies are invited to comment on initial DL BWP configuration parameters in** [***RedCapParamList-v000***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v000.xlsx)**.**

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| **Company** | **Comments** |
| FUTUREWEI | It is unclear how option 2 is captured for a separate initial DL BWP is used for random access as per   * + For a separate initial DL BWP (if it does not include CD-SSB and the entire CORESET#0) from RAN1 perspective,     - If it is configured for random access while not for paging in idle/inactive mode, RedCap UE does NOT expect it to contain SSB/CORESET#0/SIB.     - Note: RAN1 assumes REDCAP UE performing Random access in the separate DL BWP does not need to monitor paging in a BWP containing CORESET#0   If High Priority Proposal 3-2d (or a modified version) is agreed, then the square brackets need to be removed |
| FL2 | An updated draft parameter list has been provided in ***RedCapParamList-v001***, but the initial DL BWP configuration parameters have not been updated, since further RAN1 agreements are needed.  **Question 3-1b: Companies are invited to comment on initial DL BWP configuration parameters in** [***RedCapParamList-v001***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v001.xlsx)**.** |
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# 4 Initial UL BWP configuration

**FL1 Question 4-1a: Companies are invited to comment on initial UL BWP configuration parameters in** [***RedCapParamList-v000***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v000.xlsx)**.**

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| **Company** | **Comments** |
| FUTUREWEI | The paragraph for the separate initial UL BWP is a good starting point for the RRC parameter. |
| FL2 | An updated draft parameter list has been provided in ***RedCapParamList-v001***, without any updates to the UL BWP configuration parameters.  **Question 4-1b: Companies are invited to comment on initial UL BWP configuration parameters in** [***RedCapParamList-v001***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v001.xlsx)**.** |
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# 5 PUCCH configuration

**FL1 Question 5-1a: Companies are invited to comment on PUCCH configuration parameters in** [***RedCapParamList-v000***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v000.xlsx)**.**

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| **Company** | **Comments** |
| FUTUREWEI | This parameter description will need to be revised to capture the discussions in 8.6.1.1 (High Priority Proposal 8-1e or later). There may be parameters indicating which resource is used (e.g. which side of the separate initial UL BWP the PUCCH resources are located, any offset) |
| FL2 | An updated draft parameter list has been provided in ***RedCapParamList-v001***, but the PUCCH configuration parameters have not been updated, since further RAN1 agreements are needed.  **Question 5-1b: Companies are invited to comment on PUCCH configuration parameters in** [***RedCapParamList-v001***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v001.xlsx)**.** |
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# 6 CQI/MCS table configuration

**FL1 Question 6-1a: Companies are invited to comment on CQI/MCS table configuration parameters in** [***RedCapParamList-v000***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v000.xlsx)**.**

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| **Company** | **Comments** |
| FUTUREWEI | It is unclear why these two rows are needed – the agreements are not even about RRC parameters. With the notes being proposed in the feature discussion and possibly indicated in a LS reply, the feature description will capture the agreements about the tables. Our proposal is to remove these two rows. |
| FL2 | An updated draft parameter list has been provided in ***RedCapParamList-v001***, but the CQI/MCS table configuration parameters have not been updated. The received comments propose to remove these rows since CQI/MCS table related agreements are bring discussed in the UE capability related discussions (under RAN1#107-e agenda item 8.16.6), but it should be noted that the rows in this draft parameter list concern configuration parameters and their descriptions, not capabilities and their descriptions.  **Question 6-1b: Companies are invited to comment on CQI/MCS table configuration parameters in** [***RedCapParamList-v001***](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_107-e/Inbox/drafts/8.6/ParamList/RedCapParamList-v001.xlsx)**.** |
| FUTUREWEI | Yes, our point is that the agreement is with respect to capability and NO update is needed to the configuration parameters. These can be configured exactly as in legacy. So the rows should be removed. |
| Intel | Agree with the FL that it would be necessary to list the parameters here as the applicability to RedCap is slightly different as captured in the Description column. Note that these are identified as „Existing“ parameter. |

# 7 Other comments

**FL2 Question 7-1a: Companies are invited to provide any other comments they might have on RRC parameters for RedCap.**

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| **Company** | **Comments** |
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