**3GPP TSG RAN WG1 #117** **R1-24xxxxx**

Fukuoka, Japan, 20th – 24th May 2024

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.213** | **CR** | **DRAFT** | **rev** | **-** | **Current version:** | **18.2.0** |  |
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| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Multicast MBS PDSCH bandwidth for eRedCap UE in RRC inactive state | | | | | | | | | |
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| ***Source to WG:*** | Moderator (Ericsson), Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_redcap\_enh-Core | | | | |  | ***Date:*** | | | 2024-05-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | RAN1#116bis made the following agreement for multicast MBS PDSCH bandwidth for eRedCap UE in RRC inactive state:  Agreement  For a UE with BB bandwidth reduction, for multicast MBS for inactive state specified in Rel-18, UE is not required to decode the PDSCH if the number of PRBs scheduled in DCI scrambled with G-RNTI or MCCH-RNTI is larger than 25/15 PRBs for 15/30 kHz SCS.  RAN1#117 agreed to capture the above agreement by adding the following paragraph in TS 38.213 clause 17.1A:  A UE that has not indicated *eRedCapNotReducedBB-BW* is not required to process a PDSCH reception that is scheduled by a DCI format with CRC scrambled by Multicast MCCH-RNTI or G-RNTI for multicast in RRC\_INACTIVE state over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, in a slot.  The background to the RAN1#116bis agreement is described in Section 2 in the feature lead summary [R1-2403647](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_116b/Docs/R1-2403647.zip), and the discussion on how to capture the RAN1#116bis agreement in the specification can be found in Section 1 in the feature lead summary [R1-2405462](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_117/Docs/R1-2405462.zip) from RAN1#117. | | | | | | | | |
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| ***Summary of change:*** | | The above is captured in the specification. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unclear specification of multicast MBS PDSCH bandwidth for eRedCap UE in RRC inactive state | | | | | | | | |
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| ***Clauses affected:*** | | 17.1A | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## 17.1A Second procedures for RedCap UE

In this clause, the term 'UE' refers to a RedCap UE that indicates *supportOfERedCap*.

A UE that has not indicated *eRedCapNotReducedBB-BW* does not expect to transmit a PUSCH over a bandwidth that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, per hop in a slot.

A UE that has not indicated *eRedCapNotReducedBB-BW* does not expect to process a PDSCH reception that is scheduled by a DCI format with CRC scrambled by a C-RNTI, CS-RNTI, MCS-C-RNTI, G-RNTI for multicast, or G-CS-RNTI, or is associated with a SPS PDSCH configuration activated by a DCI format with CRC scrambled by CS-RNTI or G-CS-RNTI, over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, in a slot.

A UE that has not indicated *eRedCapNotReducedBB-BW* is not required to process a PDSCH reception in slot that is scheduled by a DCI format with CRC scrambled by a G-RNTI for broadcast or a MCCH-RNTI over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, when the PDSCH reception is with repetitions or when the UE receives another PDSCH in slot .

A UE that has not indicated *eRedCapNotReducedBB-BW* is not required to process a PDSCH reception that is scheduled by a DCI format with CRC scrambled by Multicast MCCH-RNTI or G-RNTI for multicast in RRC\_INACTIVE state over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, in a slot.

A UE is not required to process a PDSCH reception that is scheduled by a DCI format with CRC scrambled by a TC-RNTI over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, in a slot.

A UE does not expect to transmit a PUSCH over a bandwidth that is larger than 25 PRBs for 15 kHz SCS, or larger than 12 PRBs for 30 kHz SCS, per hop in a slot, where the PUSCH is scheduled by RAR UL grant or by a DCI scrambled by a TC-RNTI, or is configured for a Type-2 random access procedure.

When

- a UE receives a PDSCH scheduled by a DCI format with CRC scrambled by a RA-RNTI or a MsgB-RNTI over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS or larger than 12 PRBs for 30 kHz SCS, and

- the PDSCH includes a RAR message with an RAR UL grant scheduling a Msg3 PUSCH transmission from the UE, as described in Clauses 8.2 and 8.2A

the UE transmits the Msg3 PUSCH if a time between the last symbol of a PDSCH reception conveying the RAR message and the first symbol of the Msg3 PUSCH transmission is not smaller than msec for 15 kHz SCS or msec for 30 kHz SCS where and are defined in clause 8.3; otherwise, the UE behaviour is based on UE implementation.

When

- a UE receives a PDSCH scheduled by a DCI format with CRC scrambled by a RA-RNTI or a MsgB-RNTI over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS or larger than 12 PRBs for 30 kHz SCS, and

- the UE does not correctly receive the transport block provided by the PDSCH, or if the higher layers at the UE do not identify a RAPID associated with a corresponding PRACH transmission from the UE

if requested by higher layers, the UE shall be ready to transmit a PRACH no later than msec for 15 kHz SCS, or no later than msec for 30 kHz SCS, after the last symbol of the PDSCH reception, or after the last symbol of the window as described in Clauses 8.2 and 8.2A.

When

- a UE receives a PDSCH scheduled by a DCI format with CRC scrambled by MsgB-RNTI over a number of PRBs that is larger than 25 PRBs for 15 kHz SCS or larger than 12 PRBs for 30 kHz SCS, and

- the PDSCH includes a RAR message that is for successRAR for the UE as described in Clause 8.2A

the UE transmits a PUCCH with HARQ-ACK information if a time between the last symbol of the PDSCH reception conveying the RAR message and the first symbol of the PUCCH transmission is not smaller than msec for 15 kHz SCS or msec for 30 kHz SCS; otherwise, the UE behaviour is based on UE implementation.