**3GPP TSG-RAN WG2 Meeting #123bis *R2-230xxxx***

**Xiamen, China, October 09-13, 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.306** | **CR** | **-** | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](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:*** | [Temporary CR] [RAN1 lead features] UE capabilities for Rel-18 eRedCap WI | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Intel Corporation | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_redcap\_enh-Core | | | | |  | ***Date:*** | | | 2023-09-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Define the UE capabilities for Rel-18 eRedCap WI on RAN1 lead features. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Define the UE capabilities for Rel-18 eRedCap WI on RAN1 lead features.  *NOTE 1: TP for FG 48-1 and 48-2 is based on RAN1 LS R1-2308523 on the latest updates of the RAN1 feature list (available in R1-2308521). It is highlighted in pink, the TP which is updated to use RAN2 terminology of eRedCap when applicable.*  *NOTE 2: For the email discussion, it is higlighted in blue, the TP that shows the differences between FG 48-1 and 48-2; and in green, the TP associated to the following RAN2#123 agreement “to add in the list of functional components for the supportOfEnhancedRedCap-r18 the support of eRedCap early indication based on Msg3 and MsgA PUSCH”.* | | | | | | | | |
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| ***Consequences if not approved:*** | | Rel-18 eRedCap WI is not complete | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.x.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS/TR 38.331 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:*** | |  | | | | | | | | |

1. ***Modified section***

## 4.2 UE Capability Parameters

*\*\*\* OMITTED TEXT \*\*\**

### 4.2.x eRedCap Parameters

*\*\*\* OMITTED TEXT \*\*\**

#### 4.2.x.2 General parameters

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| --- | --- | --- | --- | --- |
| Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF |
| ***enhRedCap-r18***  Indicates that the UE is an eRedCap UE with comprised of at least the following functional components:  - Maximum FR1 eRedCap UE bandwidth is 20 MHz;  - Support of eRedCap early indication based on Msg1 for 4-step RACH;  - Separate initial UL BWP for eRedCap UEs;  - It includes the configuration(s) needed for eRedCap UE to perform random access  - Enabling/disabling of frequency hopping for common PUCCH resources  - Separate initial DL BWP for eRedCap UEs;  - It includes CSS/CORESET for random access  - For separate initial DL BWP used for paging, CD-SSB is included  - For separate initial DL BWP only used for RACH, SSB may or may not be included  - For separate initial DL BWP used in connected mode as BWP#0 configuration option 1, CD-SSB is included  - 1 UE-specific RRC configured DL BWP per carrier;  - 1 UE-specific RRC configured UL BWP per carrier;  - UE-specific RRC-configured DL BWP with CD-SSB or NCD-SSB;  - NCD-SSB based measurements in RRC-configured DL BWP.  - DL/UL peak data rate target of 10 Mbps corresponding to *vLayers*·*Qm*·*f* = 3.2.  - If eRedCap UE also supports *notReducedBB-BW-r18,* this component is not applicable and instead, DL/UL peak data rate target of 10 Mbps corresponding to *vLayers*·*Qm*·*f* = 0.75 when *vLayers* = 1 and *vLayers*·*Qm*·*f* = 0.8 when *vLayers* = 2.  - Maximum number of PDSCH/PUSCH PRBs that can be scheduled for unicast per slot of 25 PRBs for 15 kHz SCS and 12 PRBs for 30 kHz SCS.  - If eRedCap UE also supports *notReducedBB-BW-r18,* this component is not applicable.  - Relaxed RAR-PDSCH processing timeline of 1/0.5 ms for 15/30 kHz SCS when the RAR PDSCH and MsgB PDSCH (if supported) is larger than 25/12 PRBs for 15/30 kHz SCS.  - If eRedCap UE also supports *notReducedBB-BW-*r18, this component is only supported during initial access.  - Network-configurable additional separate early indication in Msg1 for eRedCap UEs.  - Support of eRedCap early indication based on Msg3 and MsgA PUSCH.  FFS whether to add additional components.  An eRedCap UE shall set this field to *supported* but shall not indicate support of *supportOfRedCap-r17*. | UE | CY | No | FR1 only |
| ***notReducedBB-BW-r18***  Indicates that the UE is an eRedCap UE without reduced baseband bandwidth in FR1. UE supporting this feature shall indicate the support of *enhRedCap-r18*. | UE | No | No | FR1 only |

***End of the modified section***