**3GPP TSG-RAN2#121R2-230xxxx**

**Athens, 27th Feb – 3rd March 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | 38.306 | **CR** | 0886 | **rev** | - | **Current version:** | 17.3.0 |  |
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| *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:***  | UE capability for NCD SSB for REDCAP for SDT |
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| ***Source to WG:*** | ZTE Corporation, Sanechips, Vivo, Mediatek, China Unicom, China Telecom, …  |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_redcap-Core  |  | ***Date:*** | 06/03/2023 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | *Rel-17* |
|  | *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 canbe 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:*** | A REDCAP UE with initial BWP having no CD-SSB may need an NCD-SSB for Tx timing and channel estimation in some deployments. Currently this is not possible to be configured for SDT. RAN2 discussed the above issue and agreed the following: Option 2: CG/RA-SDT can also be performed if the initial DL BWP does not include the CD-SSB but a NCD-SSB (to be signalled to the UE). A corresponding UE capability is introduced* RAN2 confirms it will focus only on option 2

Thus, a UE capability is needed for this feature. |
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| ***Summary of change:*** | Specify a UE capability for supporting NCD-SSB for redcap UE for SDT. **Impact analysis**Impacted 5G architecture options:SAImpacted functionality:REDCAP on initial BWP without CD SSB, SDTInter-operability: If the network is implemented according to this CR and the UE is not, then there will be no interoperability issue, but the network will assume that the REDCAP UE does not support NCD SSB for SDT and cannot use the feature. If UE is implemented according to the CR and the network is not then there is no interoperability issue, but the network does not know whether the REDCAP UE is capable of supporting NCD SSB for SDT.  |
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| ***Consequences if not approved:*** | RECAP UE cannot report its capability to support NCD-SSB confguration for SDT.  |
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| ***Clauses affected:*** | 4.2.21.2 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.331 CR 3817  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| First change |

4.2.21.2 General parameters

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| **Definitions for parameters** | **Per** | **M** | **FDD-TDD DIFF** |
| ***ncd-SSB-forRedCapInitialBWP-SDT-r17***Indicates that the UE supports using RedCap-specific initial DL BWP associated with NCD-SSB for SDT. If absent, the UE only supports SDT in an initial DL BWP that includes the CD-SSB. The UE can include this field only if the UE supports *supportOfRedCap-r17 and ra-SDT-r17* and/or *cg-SDT-r17*. | UE | No | No |
| ***supportOf16DRB-RedCap-r17***Indicates whether the RedCap UE supports 16 DRBs. This capability is only applicable for RedCap UEs. | UE | No | No |
| ***supportOfRedCap-r17***Indicates that the UE is a RedCap UE with comprised of at least the following functional components:- Maximum FR1 RedCap UE bandwidth is 20 MHz;- Maximum FR2 RedCap UE bandwidth is 100 MHz;- Support of RedCap early indication based on Msg1, MsgA (if UE indicated support of t*woStepRACH-r16*) and Msg3 for random access;- Separate initial UL BWP for RedCap UEs;- Separate initial DL BWP for RedCap UEs;- UE-specific RRC-configured DL BWP with CD-SSB or NCD-SSB;- NCD-SSB based measurements in RRC-configured DL BWP.A RedCap UE shall set the field to *supported*. | UE | CY | No |