**3GPP TSG-RAN WG2 Meeting #121 *R2-2301688***

**Athens, Greece, 27th February – 3th March, 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.331** | **CR** | **3917** | **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 |  | Core Network |  |

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| ***Title:*** | Correction on the filed descriptions of NeedForGaps in 38.331 | | | | | | | | | |
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| ***Source to WG:*** | CATT, ZTE, vivo | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
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| ***Work item code:*** | NR\_redcap-Core | | | | |  | ***Date:*** | | | 2023-02-16 |
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| ***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)s*  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:*** | | In RAN2#118e, RAN2 achieved the following agreement:   |  | | --- | | **2. For how to indicate serving cell MO for RedCap UE, adopt solution A-2.**  **Solution A-2: Optionally configures a BWP-specific servingCellMO under BWP-DownlinkDedicated IE when the BWP-DownlinkDedicated contains nonCellDefiningSSB-r17. If the field is present, the UE uses this servingCellMO for serving cell measurements, otherwise, the UE uses legacy servingCellMO IE under ServingCellConfig.** |   That is, for a BWP, a BWP specific servingCellMO can be configured, and if the BWP specific servingCellMO is configured, the UE will use it for serving cell measurements. So if the RedCap UE works on a BWP with BWP specific servingCellMO, no measurement gap is needed. This is not considered in the field descriptions of *NeedForGapsIntraFreq* and *NeedForGapNCSG-InfoNR*.  It is proposed the need for gap determination at UE side will not consider a BWP, if this BWP is configured with ServingCellMO associated with NCD-SSB. This is because, when UE’s active BWP is this BWP, the intra-frequency measurement is on that NCD-SSB which does not require any gap by nature. Therefore, this *NeedForGapsIntraFreq* and *NeedForGapNCSG-InfoNR* reporting is based on the UE current RRC configuration, which indeed considers the BWP specific *ServingCellMO* configuration. | | | | | | | | |
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| ***Summary of change:*** | | Update the field description of *NeedForGapsIntraFreq* and *NeedForGapNCSG-InfoNR*, to make it clear that, if the RedCap UE works on a BWP with BWP specific servingCellMO, no measurement gap is needed.  **Impact analysis:**  Impacted 5G architecture options:  Standalone  Impacted functionality:  Measurement configuration for RedCap UE.  Inter-operability:  1. If the UE is implemented according to this CR but the network is not, when the UE indicates “gap”, there is no problem; when the UE indicates “no gap” to the network, the network may over-interpret that gap is not needed also for performing intra-freq measurements on CD-SSB when the UE operates in the BWP associated with NCD-SSB. .  2. If the network is implemented according to this CR but the UE is not, the UE may request a gap from the network but in fact the gap is not needed for BWP configured with ServingCellMO associated with NCD-SSB. .. | | | | | | | | |
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| ***Consequences if not approved:*** | | It is not clear how the UE will deal with the BWP with BWP specific servingCellMO when UE evaluates whether a measurement gap is needed or not. | | | | | | | | |
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| ***Clauses affected:*** | | 6.3.2 | | | | | | | | |
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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 ... | | |
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| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

*Start of change*

– *NeedForGapsInfoNR*

The IE *NeedForGapsInfoNR* indicates whether measurement gap is required for the UE to perform SSB based measurements on an NR target band while NR-DC or NE-DC is not configured.

***NeedForGapsInfoNR* information element**

-- ASN1START

-- TAG-NeedForGapsInfoNR-START

NeedForGapsInfoNR-r16 ::= SEQUENCE {

intraFreq-needForGap-r16 NeedForGapsIntraFreqList-r16,

interFreq-needForGap-r16 NeedForGapsBandListNR-r16

}

NeedForGapsIntraFreqList-r16 ::= SEQUENCE (SIZE (1.. maxNrofServingCells)) OF NeedForGapsIntraFreq-r16

NeedForGapsBandListNR-r16 ::= SEQUENCE (SIZE (1..maxBands)) OF NeedForGapsNR-r16

NeedForGapsIntraFreq-r16 ::= SEQUENCE {

servCellId-r16 ServCellIndex,

gapIndicationIntra-r16 ENUMERATED {gap, no-gap}

}

NeedForGapsNR-r16 ::= SEQUENCE {

bandNR-r16 FreqBandIndicatorNR,

gapIndication-r16 ENUMERATED {gap, no-gap}

}

-- TAG-NeedForGapsInfoNR-STOP

-- ASN1STOP

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| ***NeedForGapsInfoNR* field descriptions** |
| ***intraFreq-needForGap***  Indicates the measurement gap requirement information for NR intra-frequency measurement. |
| ***interFreq-needForGap***  Indicates the measurement gap requirement information for NR inter-frequency measurement. |

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| ***NeedForGapsIntraFreq field descriptions*** |
| ***servCellId***  Indicates the serving cell which contains the target SSB (associated with the initial DL BWP) to be measured. |
| ***gapIndicationIntra***  Indicates whether measurement gap is required for the UE to perform intra-frequency SSB based measurements on the concerned serving cell. Value *gap* indicates that a measurement gap is needed if any of the UE configured BWPs (except the BWP(s) configured with ServingCellMO associated with NCD-SSB) do not contain the frequency domain resources of the SSB associated to the initial DL BWP (CD-SSB). Value *no-gap* indicates a measurement gap is not needed to measure the SSB associated to the initial DL BWP (CD-SSB) for all configured BWPs (except the BWP(s) configured with ServingCellMO associated with NCD-SSB), no matter the SSB is within the configured BWP or not. |

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| ***NeedForGapsNR* field descriptions** |
| ***bandNR***  Indicates the NR target band to be measured. |
| ***gapIndication***  Indicates whether measurement gap is required for the UE to perform SSB based measurements on the concerned NR target band while NR-DC or NE-DC is not configured. The UE determines this information based on the resultant configuration of the *RRCReconfiguration* or *RRCResume* message that triggers this response. Value *gap* indicates that a measurement gap is needed, value *no-gap* indicates a measurement gap is not needed. |

*Next change*

– *NeedForGapNCSG-InfoNR*

The IE *NeedForGapNCSG-InfoNR* indicates whether measurement gap or NCSG is required for the UE to perform SSB based measurements on an NR target band while NR-DC or NE-DC is not configured.

***NeedForGapNCSG-InfoNR* information element**

-- ASN1START

-- TAG-NEEDFORGAPNCSG-INFONR-START

NeedForGapNCSG-InfoNR-r17 ::= SEQUENCE {

intraFreq-needForNCSG-r17 NeedForNCSG-IntraFreqList-r17,

interFreq-needForNCSG-r17 NeedForNCSG-BandListNR-r17

}

NeedForNCSG-IntraFreqList-r17 ::= SEQUENCE (SIZE (1.. maxNrofServingCells)) OF NeedForNCSG-IntraFreq-r17

NeedForNCSG-BandListNR-r17 ::= SEQUENCE (SIZE (1..maxBands)) OF NeedForNCSG-NR-r17

NeedForNCSG-IntraFreq-r17 ::= SEQUENCE {

servCellId-r17 ServCellIndex,

gapIndicationIntra-r17 ENUMERATED {gap, ncsg, nogap-noncsg}

}

NeedForNCSG-NR-r17 ::= SEQUENCE {

bandNR-r17 FreqBandIndicatorNR,

gapIndication-r17 ENUMERATED {gap, ncsg, nogap-noncsg}

}

-- TAG-NEEDFORGAPNCSG-INFONR-STOP

-- ASN1STOP

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| ***NeedForGapNCSG-InfoNR* field descriptions** |
| ***intraFreq-needForNCSG***  Indicates the measurement gap and NCSG requirement information for NR intra-frequency measurement. |
| ***interFreq-needForNCSG***  Indicates the measurement gap and NCSG requirement information for NR inter-frequency measurement. |

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| ***NeedForNCSG-IntraFreq field descriptions*** |
| ***servCellId***  Indicates the serving cell which contains the target SSB (associated with the initial DL BWP) to be measured. |
| ***gapIndicationIntra***  Indicates whether measurement gap or NCSG is required for the UE to perform intra-frequency SSB based measurements on the concerned serving cell. Value *gap* indicates that a measurement gap is needed if any of the UE configured BWPs (except the BWP(s) configured with ServingCellMO associated with NCD-SSB) do not contain the frequency domain resources of the SSB associated to the initial DL BWP (CD-SSB). Value *ncsg* indicates that a NCSG is needed if any of the UE configured BWPs do not contain the frequency domain resources of the SSB associated to the initial DL BWP. Value *nogap-noncsg* indicates that neither a measurement gap nor a NCSG is needed to measure the SSB associated to the initial DL BWP (CD-SSB) for all configured BWPs (except the BWP(s) configured with ServingCellMO associated with NCD-SSB), no matter the SSB is within the configured BWP or not. |

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| ***NeedForNCSG-NR* field descriptions** |
| ***bandNR***  Indicates the NR target band to be measured. |
| ***gapIndication***  Indicates whether measurement gap or NCSG is required for the UE to perform SSB based measurements on the concerned NR target band while NR-DC or NE-DC is not configured. The UE determines this information based on the resultant configuration of the *RRCReconfiguration* or *RRCResume* message that triggers this response. Value *gap* indicates that a measurement gap is needed, value *ncsg* indicates that a NCSG is needed, and value *nogap-noncsg* indicates neither a measurement gap nor a NCSG is needed. |

*End of change*