**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 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:*** | In RAN2#118e, RAN2 achieved the following agreement:

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| **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:StandaloneImpacted functionality:Measurement configuration for RedCap UE.Inter-operability:1. If the UE is implemented according to this CR but the network is not, there may be different understanding on the UE gap requirement situtaion by the NW side, when the ServingCellMO associated with NCD-SSB is configured.2. If the network is implemented according to this CR but the UE is not, there may be different understanding on the UE gap requirement situtaion by the NW side, when the ServingCellMO associated with NCD-SSB is configured.. |
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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*