**3GPP TSG-RAN2 Meeting #128 *R2-2411211***

**Orlando, US, 18 – 22 Nov, 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **36.306** | **CR** | **1903** | **rev** | **-** | **Current version:** | **18.3.0** |  |
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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:***  | Capability on measurement gap enhancements |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_MG\_enh2 |  | ***Date:*** | 2024-11-29 |
|  |  |  |  |  |
| ***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 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | 1) In RAN4 feature list R4-2410748/R2-2406232, the LTE feature group “Simultaneous reception of EUTRAN data and NR SSB with different numerology” was added. However, this has not been captured in the specification.2) In the existing capability *interRAT-NeedForInterruptionNR-r18*, the wording “The UE shall only include this field if it indicates measurement gap is not required in the corresponding *interRAT-NeedForGapsNR-r16* field” may lead to the wrong interpretation that UE shall always include the field if it indicates measurement gap is not required in the corresponding *interRAT-NeedForGapsNR-r16* field, and based on RAN4 discussion the capability is optionally reported. |
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| ***Summary of change:*** | 1) Capture the LTE UE feature “Simultaneous reception of EUTRAN data and NR SSB with different numerology” in the specification.2) Update the description of *interRAT-NeedForInterruptionNR-r18* as “The UE includes this field only if it indicates measurement gap is not required in the corresponding *interRAT-NeedForGapsNR-r16* field”.**Impact analysis**Impacted functionality:SSB-based inter-RAT measurements on NRInter-operability:If the UE is implemented according to this CR but the network is not, or vice versa, the consequences if not approved remain. |
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| ***Consequences if not approved:*** | 1) The NW will always apply scheduling restriction, even if the UE supports simultaneous reception, which may result in performance degradation.2) The capability *interRAT-NeedForInterruptionNR-r18* remains ambiguous. |
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| ***Clauses affected:*** | 4.3.6.53, 4.3.6.xx (new) |
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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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

Start of Change

### 4.3.6 Measurement parameters

<unrelated parts omitted>

4.3.6.53 *interRAT-NeedForInterruptionNR-r18*

This field defines for each supported E-UTRA band or band combination whether interruption is required to perform SSB based inter-RAT measurements without gap on each supported NR band. Value *no-gap-with-interruption* indicates measurement gap is not needed but interruption is needed, and value *no-gap-no-interruption* indicates neither measurement gap nor interruption is needed. The UE includes this field only if it indicates measurement gap is not required in the corresponding *interRAT-NeedForGapsNR-r16* field.

4.3.6.xx *simultaneousRxDataSSB-DiffNumerology-FR1-r18*

This field defines whether the UE supports concurrent SSB-based inter-RAT measurement on NR FR1 cell and PDCCH or PDSCH reception from the serving cell with a different numerology. The UE includes this field only if it indicates support of *interRAT-NeedForInterruptionNR-r18* for at least one target band in at least one band combination. This field only applies if *interRAT-NeedForInterruptionNR-r18* is reported for the target band in the band combination.

End of Change