**3GPP TSG-RAN WG2 Meeting #128 *R2-2411026***

 **Orlando, USA, November 18th – 22nd, 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.331** | **CR** | **5157** | **rev** | **1** | **Current version:** | **17.10.0** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)*** *on using this form: comprehensive instructions can be found at <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:***  | Corrections to smtc configuration |
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| ***Source to WG:*** | ZTE Corporation, Sanechips |
| ***Source to TSG:*** | RAN2 |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core |  | ***Date:*** | 2024-10 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | It is specified in first section of subclause 5.5.2.10 that UE sets up first SMTC based on *periodicityAndOffset* parameter included in ***smtc1*** in MO. However, SMTC configuration can also be provided in ***smtc*** in SIBs, or ***smtc*** or ***targetCellSMTC-SCG*** inRRCReconfiguration for HO/PSCell addition or in RRCRelease for redirection. For those cases, UE shall set up SMTC based on configuration in ***smtc*** or ***targetCellSMTC-SCG***, instead of ***smtc1***. Since both *smtc,* *smtc1* and *targetCellSMTC-SCG*refer to the same IE *SSB-MTC*, a simple fix would be to change the ‘*smtc1*’ in procedure text to ‘*SSB-MTC*’ to harmonize the text for different cases. This is also aligned with the text style used in subclause 5.5.2.13 of 36.331 LTE RRC specs for UE to determine NR SMTC configuration. |
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| ***Summary of change:*** | change ‘*smtc1*’ to ‘*SSB-MTC*’ in the first section of subclause 5.5.2.10.**Impact analysis****Impacted 5G Architecture options:**NR standalone, NR-DC, (NG)EN-DC, NE-DC**Impacted functionality:**SMTC configuration **Inter-operability analysis:** There is no inter-operability issue foreseen.  |
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| ***Consequences if not approved:*** | How UE set up smtc configuration is incomplete. |
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| ***Clauses affected:*** | 5.5.2.10 |
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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:*** |  |

*1st CHANGE STARTS*

#### 5.5.2.10 Reference signal measurement timing configuration

The UE shall setup the first SS/PBCH block measurement timing configuration (SMTC) in accordance with the received *periodicityAndOffset* parameter (providing *Periodicity* and *Offset* value for the following condition) in the *SSB-MTC* configuration. The first subframe of each SMTC occasion occurs at an SFN and subframe of the NR SpCell meeting the following condition:

SFN mod *T* = (FLOOR (*Offset*/10));

if the *Periodicity* is larger than *sf5*:

subframe = *Offset* mod 10;

else:

subframe = *Offset* or (*Offset* +5);

with *T* = CEIL(*Periodicity*/10).

If *smtc2* is present, for cells indicated in the *pci-List* parameter in *smtc2* in the same *MeasObjectNR*, the UE shall setup an additional SS/PBCH block measurement timing configuration (SMTC) in accordance with the received *periodicity* parameter in the *smtc2* configuration and use the *Offset* (derived from parameter *periodicityAndOffset*) and *duration* parameter from the *smtc1* configuration. The first subframe of each SMTC occasion occurs at an SFN and subframe of the NR SpCell meeting the above condition.

If *smtc2-LP* is present, for cells indicated in the *pci-List* parameter in *smtc2-LP* in the same frequency (for intra frequency cell reselection) or different frequency (for inter frequency cell reselection), the UE shall setup an additional SS/PBCH block measurement timing configuration (SMTC) in accordance with the received *periodicity* parameter in the *smtc2-LP* configuration and use the *Offset* (derived from parameter *periodicityAndOffset*) and *duration* parameter from the *smtc* configuration for that frequency. The first subframe of each SMTC occasion occurs at an SFN and subframe of the NR SpCell or serving cell (for cell reselection) meeting the above condition.

If *smtc3list* is present, for cells indicated in the *pci-List* parameter in each *SSB-MTC3* element of the list in the same *MeasObjectNR*, the IAB-MT shall setup an additional SS block measurement timing configuration in accordance with the received *periodicityAndOffset* parameter (using same condition as *smtc1* to identify the SFN and the subframe for SMTC occasion) in each SSB-MTC3 configuration and use the duration and *ssb-ToMeasure* parameters from each SSB-MTC3 configuration.

If *smtc4list* is present, for cells indicated in the *pci-List* parameter in each *SSB-MTC4* element of the list in the same *MeasObjectNR*, the UE shall setup an additional SS/PBCH block measurement timing configuration (SMTC) in accordance with the received *offset* parameter in each *SSB-MTC4* configuration and use the *duration* parameter and *periodicity* (derived from parameter *periodicityAndOffset*) from the *smtc1* configuration. The first subframe of each SMTC occasion occurs at an SFN and subframe of the NR SpCell meeting the above condition.

On the indicated *ssbFrequency*, the UE shall not consider SS/PBCH block transmission in subframes outside the SMTC occasion for RRM measurements based on SS/PBCH blocks and for RRM measurements based on CSI-RS except for SFTD measurement (see TS 38.133 [14], clause 9.3.8).

*1st CHANGE ENDS*