**3GPP TSG-RAN4 Meeting #112 *R4-2412030***

**Maastricht, Netherlands, 19th Aug 2024 - 23rd Aug 2024**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **4743** | **rev** | **-** | **Current version:** | **18.6.0** |  |
|  | | | | | | | | |
| *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:*** | CR correction of interruption requirements for needForInterruptions-R18 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MG\_enh2-Core | | | | |  | ***Date:*** | | | 2024-08-09 |
|  |  | | | |  | |  | | |  |
| ***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 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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Addition of interruption requirements with DRX is needed | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Interruption requirements with DRX | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incomplete requirements not covering DRX | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.2.2.19 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

# <Start of Change #1>

##### 8.2.2.2.19 Interruptions due to measurements without gap carried out by UE supporting *NeedForInterruptionInfoNR*

When a UE supports *NeedForInterruptionInfoNR-r18* measurements and indicates *no-gap-with-interruption* on intra-frequency SSB-based or inter-frequency SSB-based measurements, the UE is allowed to cause interruptions while performing measurements on the frequency layers of the bands for which *no-gap-with-interruption* is indicated. Requirements in this section apply only when the UE is in SA operation mode.

The UE is allowed to cause interruption with interruption ratio no more than the requirements specified below upon UE measurements on a specific frequency layer that corresponds to the configured MO, where Tcycle,i is the interruption cycle on a certain frequency layer i, specified in Table 8.2.2.2.19-1, where CSSFoutside\_gap,i is defined in clause 9.1.5.1 for measurement conducted outside measurement gaps.

Table 8.2.2.2.19-1: Tcycle,i length for inter/intra-frequency measurement target carrier i

|  |  |
| --- | --- |
| DRX cycle | TCycle,i |
| No DRX | max (80ms, SMTC period) x CSSFoutside\_gap,i |
| DRX cycle ≤ 320ms | 1.5\*max(80ms, SMTC period, DRX cycle) x CSSFoutside\_gap,i |
| DRX cycle>320ms | DRX cycle x CSSFoutside\_gap,i |

UE is allowed to cause interruption on a certain frequency layer *i* with the maximum interruption ratio that equals .

The total allowed maximum interruption ratio (D) on each of the active serving cells due to UE measurements without gap applied in this sub-clause is specified as

Where,

- N is the total number of configured SSB based frequency layers to be measured outside gap including intra-frequency and inter-frequency target carriers where UE indicates that interruption is needed through *[no-gap-with-interruption]*, and

- L is the maximum interruption length for each interruption occasion specified in the Table 8.2.2.2.19-2 and 8.2.2.2.19-3.

When no SMTC occasion of the NR measurement objects occurs within the time period which starts from [4ms] before the starting point of the DRX ON duration to [4ms] after the ending point of the DRX ON duration, UE is not allowed to cause interruption during DRX ON duration except the time duration extended due to *drx-inactivityTimer*.

The interruptions are allowed for all the active serving cells in the same FR as all NR MOs being measured with interruption if UE supports per-FR measurement gaps, and all the active serving cells if UE does not support per-FR measurement gaps.

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Table 8.2.2.2.19-2: Interruption length L in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | SCS (kHz) of victim cell | NR Slot length (ms) of victim cell | Number of interrupted slots in the victim cell (slots) | Interruption length L (ms) |
| 0 | 15 | 1 | [1] | [1] |
| 1 | 30 | 0.5 | [2] | [1] |
| 2 | 60 | 0.25 | [4] | [1] |

Table 8.2.2.2.19-3: Interruption length L in FR2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | SCS (kHz) of victim cell | NR Slot length (ms) of victim cell | Number of interrupted slots in the victim cell (slots) | Interruption length L (ms) |
| 2 | 60 | 0.25 | [3] | [0.75] |
| 3 | 120 | 0.125 | [6] | [0.75] |

# <End of Change #1>