**3GPP TSG-RAN WG4 Meeting #116 R4-2509678**

**Bengaluru, India, August 25th – 29th, 2025**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **draftCR** | **rev** | - | **Current version:** | **19.1.0** |  |
|  | | | | | | | | |
| *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:*** | DraftCR on measurements of intra-frequency NR cells for UE with LP-WUR in IDLE and INACTIVE state | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_LPWUS-Core | | | | |  | ***Date:*** | | | 2025-08-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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:*** | | 1. The relaxed MR intra-frequency neighbour cell measurement requirements for UE with LP-WUR in IDLE and INACTIVE state need to be defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Introduce the relaxed MR intra-frequency neighbour cell measurement requirements for UE with LP-WUR in IDLE and INACTIVE state. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The relaxed MR intra-frequency neighbour cell measurement requirements for UE with LP-WUR in IDLE and INACTIVE state are missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | New 4.X.2.4, 5.X.2.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

# <Start of Change 1>

#### 4.X.4 Measurements of intra-frequency NR cells for UE with LP-WUR

For a UE with LP-WUR, the requirements in clause 4.2.2.3 apply except for the requirements specified in this clause when the relaxed measurement criterion defined in 5.2.4.x.2 in [1] is fulfilled.

The UE shall be able to evaluate whether a newly detectable intra-frequency cell meets the reselection criteria defined in TS 38.304 [1] within KLP x Tdetect,NR\_Intrawhen that Treselection= 0, where KLP = 16.

The UE shall measure SS-RSRP and SS-RSRQ at least every KLP x Tmeasure,NR\_Intra for intra-frequency cells that are identified and measured according to the measurement rules.

The UE shall filter SS-RSRP and SS-RSRQ measurements of each measured intra-frequency cell using at least 2 measurements. Within the set of measurements used for the filtering, at least two measurements shall be spaced by at least KLP x Tmeasure,NR\_Intra/2.







For an intra-frequency cell that has been already detected, but that has not been reselected to, the filtering shall be such that the UE shall be capable of evaluating that the intra-frequency cell has met reselection criterion defined in TS 38.304 [1] within KLP x Tevaluate,NR\_Intra when Treselection = 0as specified in table4.2.2.3-1.

#### 4.X.2.4A Measurements of intra-frequency NR cells for Redcap with LP-WUR

For a Redcap UE with LP-WUR, the requirements in clause 4.2B.2.3 apply except for the requirements specified in this clause when the relaxed measurement criterion defined in 5.2.4.x.2 in [1] is fulfilled.

The UE shall be able to evaluate whether a newly detectable intra-frequency cell meets the reselection criteria defined in TS 38.304 [1] within KLP x Tdetect,NR\_Intrawhen that Treselection= 0, where KLP = 16.

The UE shall measure SS-RSRP and SS-RSRQ at least every KLP x Tmeasure,NR\_Intra for intra-frequency cells that are identified and measured according to the measurement rules.

The UE shall filter SS-RSRP and SS-RSRQ measurements of each measured intra-frequency cell using at least 2 measurements. Within the set of measurements used for the filtering, at least two measurements shall be spaced by at least KLP x Tmeasure,NR\_Intra/2.

For an intra-frequency cell that has been already detected, but that has not been reselected to, the filtering shall be such that the UE shall be capable of evaluating that the intra-frequency cell has met reselection criterion defined in TS 38.304 [1] within KLP x Tevaluate,NR\_Intra when Treselection = 0as specified in table 4.2B.2.3-1.

# <End of Change 1>

# <Start of Change 2>

#### 5.X.2.4 Measurements of intra-frequency NR cells for UE with LP-WUR

The requirements in this clause apply when UE is configured with eDRX\_IDLE, otherwise the requirements in clause 4.X.2.4 shall apply.

When UE is configured with eDRX\_IDLE and UE is not configured with eDRX by *ran-ExtendedPagingCycleConfig-r18* or *eDRX-AllowedInactive-r18* is not signalled in SIB1, the requirements defined in section 4.X.2.4 shall apply with Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra defined in table 5.X.2.4-1.

When UE is configured with eDRX by *ran-ExtendedPagingCycleConfig-r18* and *eDRX-AllowedInactive-r18* is signalled in SIB1, the requirements defined in section 4.X.2.4 shall apply with Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra defined in table 5.X.2.4-2.

Table 5.X.2.4-1: Tdetect, NR\_Intra, Tmeasure, NR\_Intra and Tevaluate, NR\_Intra for UE configured with eDRX\_IDLE cycle, (Frequency range FR1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle length [s] | DRX or eDRX INACTIVE cycle length [s] | Tdetect,NR\_Intra [s] (number of DRX or eDRX INACTIVE cycles) | Tmeasure,NR\_Intra [s] (number of DRX or eDRX INACTIVE cycles) | Tevaluate,NR\_Intra [s] (number of DRX or INACTIVE eDRX cycles) |
|
| 2.56 ≤eDRX\_IDLE cycle length ≤ 10485.76 | 0.32 | 11.52 x M2 (36 x M2) | 1.28 x M2 (4 x M2) | 5.12 x M2 (16 x M2) |
|  | 0.64 | 17.92 (28) | 1.28 (2) | 5.12 (8) |
|  | 1.28 | 32 (25) | 1.28 (1) | 6.4 (5) |
|  | 2.56 | 58.88 (23) | 2.56 (1) | 7.68 (3) |
|  | 5.12 | 117.76 (23) | 5.12 (1) | 15.36 (3) |
|  | 10.24 | 235.52 (23) | 10.24 (1) | 30.72 (3) |
| NOTE1: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1. | | | | |

Table 5.X.2.4-2: Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra for UE configured with eDRX\_IDLE cycle and eDRX\_INACTIVE cycle, (Frequency range FR1)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle and eDRX INACTIVE cycle length [s] | RANDRX cycle length [s] | eDRX INACTIVEPTW length [s] (number of 1.28 s periods) | Tdetect,NR\_Intra [s] (number of RAN DRX cycles) | Tmeasure,NR\_Intra [s] (number of RAN DRX cycles Note 3) | Tevaluate,NR\_Intra [s] (number of RAN DRX cycles Note 3) |
| 20.48 ≤ eDRX\_IDLE cycle length ≤10485.76  20.48 ≤ eDRX\_INACTIVE cycle length ≤10485.76 | 0.32 | ≥[1.28] ([1]) | (23) | 0.32 x M2 (1 x M2) | 0.64 x M2 (2 x M2) |
| 0.64 | ≥[1.28] ([1]) | 0.64 (1) | 1.28 (2) |
| 1.28 | ≥[2.56] ([2]) | 1.28 (1) | 2.56 (2) |
| 2.56 | ≥[5.12] ([4]) | 2.56 (1) | 5.12 (2) |
| NOTE 1: RAN DRX cycle in this table is UE specific DRX value configured by RRC specified in [1].  NOTE 2: The number of RAN DRX cycles in this table is given for the DRX cycles within RAN configured PTWs.  NOTE 3: eDRX INACTIVE PTW in this table is RAN configured PTW.  NOTE 4: The eDRX\_IDLE cycle lengths are as specified in section 10.5.5.32 of TS 24.008 [42].  NOTE 5: The lower bound of PTW length is derived based on .  NOTE 6: M2 = 2 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1. | | | | | |

When the UE transitions between any two states when changing eDRX\_IDLE cycle length, eDRX\_INACTIVE cycle length, INACTIVE RAN DRX length or changing PTW configuration, the UE shall meet the transition requirement, which is the less stringent requirement of the two requirements corresponding to the first state and the second state, during the transition time interval which is the time corresponding to the transition requirement. After the transition time interval, the UE shall meet the requirement corresponding to the second state.

#### 5.X.2.4A Measurements of intra-frequency NR cells for Redcap with LP-WUR

The requirements in clause 4.X.2.4A shall apply when UE is not configured with eDRX\_IDLE.

# < End of Change 2>