**3GPP TSG-RAN4 Meeting #116 *R4-25XXXXX***

**Bengaluru, India, 25th – 29th August, 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:*** | Draft CR for Measurements of inter-frequency NR cells for UE with LP-WUR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | LG Electronics | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_LPWUS-Core | | | | |  | ***Date:*** | | | 2025-08-14 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Measurements requirements of inter-frequency NR cells for UE with LP-WUR requirements are introduced in Rel-19 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Measurements requirements of inter-frequency NR cells for UE with LP-WUR | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No Measurements requirements of inter-frequency NR cells for UE with LP-WUR which introded in Rel-19 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.x.2.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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----------------------------**

#### 4.X.2.5 Measurements of inter-frequency NR cells for UE with LP-WUR

##### 4.X.2.5.1 Introduction

This clause contains the requirements for measurements on inter-frequency NR cells for UE with LP-WUR when the UE is configured with any of following measurement criteria:

- Relaxed measurement criterion for UE with LP-WUR defined in TS38.304[1],

- Serving cell measurement offloading criterion for UE with LP-WUR defined in TS38.304[1],

##### 4.X.2.5.2 Measurements for UE with LP-WUR fulfilling relaxed measurement criterion

This clause contains requirements for measurements on inter-frequency NR cells provided that:

- T331 timer is not running for Rel16-EMR measurements on inter-frequency NR carrier, and

- UE is configured with Rel-19 LP-WUR and UE has fulfilled the relaxed measurement criterion.

The UE shall not relax measurements on all configured carriers (carriers configured for mobility and CA/DC idle state measurement) when Rel-16 EMR is configured and T331 is running or Rel-18 EMR is configured.

When Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ then the requirements are defined as follows:

- The UE shall be able to evaluate whether a newly detectable inter-frequency NR cell meets the reselection criteria defined in TS 38.304 [1] within Ncarrier\_Relax \* Tdetect,NR\_Inter\_Relax. Cells which have been detected shall be measured at least every Ncarrier\_Relax \* Tmeasure,NR\_Inter\_Relax. The UE shall be able to evaluate that an already identified inter-frequency NR cell has met reselection criterion defined in TS 38.304 [1] within Ncarrier\_Relax \*Tevaluate,NR\_Inter\_Relax.

- While T331 is not running,

- The parameter Ncarrier\_Relax is the total number of inter-frequency carriers configured for mobility measurements only and the number of inter-frequency carriers configured for both mobility measurement and idle mode CA/DC measurements.

- For a UE not configured with eDRX\_IDLE, Tdetect,NR\_Inter\_Relax, Tmeasure,NR\_Inter\_Relax and Tevaluate,NR\_Inter\_Relax are as specified in table 4.X.2.5.2-1.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ,

- While T331 is not running,

- if the UE is configured with *highPriorityMeasRelax* [2] then the UE shall search for inter-frequency layers of higher priority at least every K2\*Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2.7 and, K2 = 60

- otherwise, the UE shall search for inter-frequency layers of higher priority at least every Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2.7.

Table 4.X.2.5.2-1: Tdetect,NR\_Inter\_Relax, Tmeasure,NR\_Inter\_Relax and Tevaluate,NR\_Inter\_Relax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| DRX cycle length [s] | Scaling Factor (N1) | | Tdetect,NR\_Inter\_Relax [s] (number of DRX cycles) | Tmeasure,NR\_Inter\_Relax [s] (number of DRX cycles) | Tevaluate,NR\_Inter\_Relax [s] (number of DRX cycles) |
| FR1 | FR2-1Note1 |
| 0.32 | 1 | 8 | 11.52 x N1 x K1 x 1.5 (36 x N1 x K1 x 1.5) | 1.28 x N1 x K1x 1.5 (4 x N1 x K1 x 1.5) | 5.12 x N1 x K1x 1.5 (16 x N1 x K1 x 1.5) |
| 0.64 |  | 5 | 17.92x N1 x K1 (28 x N1 x K1) | 1.28 x N1 x K1 (2 x N1 x K1) | 5.12 x N1 x K1 (8 x N1 x K1) |
| 1.28 |  | 4 | 32 x N1 x K1 (25 x N1 x K1) | 1.28 x N1 x K1 (1 x N1 x K1) | 6.4 x N1 x K1 (5 x N1 x K1) |
| 2.56 |  | 3 | 58.88 x N1 x K1 (23 x N1 x K1) | 2.56 x N1 x K1 (1 x N1 x K1) | 7.68 x N1 x K1 (3 x N1 x K1) |
| NOTE 1: Applies for UE supporting FR2-1 power class 2&3&4. For UE supporting FR2-1 power class 1 or 5, N1 = 8 for all DRX cycle length.  NOTE 2: K1 = 16 is the measurement relaxation factor applicable for UE fulfilling relaxed measurement criterion. | | | | | |

##### 4.X.2.5.3 Measurements for UE with LP-WUR fulfilling serving cell measurement offloading criterion

This clause contains requirements for measurements on inter-frequency NR cells provided that:

- T331 timer is not running for Rel16-EMR measurements on inter-frequency NR carrier, and

- UE is configured with Rel-19 LP-WUR and UE has fulfilled serving cell measurement offloading criterion.

NOTE: The UE with LP-WUR fulfilling serving cell measurement offloading criterion can be assumed that Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ is always met.

The UE shall not relax measurements on all configured carriers (carriers configured for mobility and CA/DC idle state measurement) when Rel-16 EMR is configured and T331 is running or Rel-18 EMR is configured.

When UE is configured with Rel-19 LP-WUR and UE has fulfilled serving cell measurement offloading criterion,

- While T331 is not running,

- if the UE is configured with *highPriorityMeasRelax* [2] then the UE shall search for inter-frequency layers of higher priority at least every K2\*Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2.7 and, K2 = 60

- otherwise, the UE shall search for inter-frequency layers of higher priority at least every Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2.7.

**----------------------END OF CHANGE----------------------------**