**3GPP TSG-RAN4 Meeting #111 *R4-2409796***

Fukuoka, Japan, May 20th – 24th, 2024

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **4608** | **rev** |  | **Current version:** | **18.5.0** |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | CR on relaxation measurement requirements for RedCap inactive UE with INACTIVE eDRX >10.24s |
|  |  |
| ***Source to WG:*** | MediaTek inc., Ericsson and Huawei, HiSilicon |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_redcap\_enh-Core |  | ***Date:*** | 2024-05-13 |
|  |  |  |  |  |
| ***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)* |
|  |  |
| ***Reason for change:*** | Agreed in the last meeting as [R4-2406441].Agreement: Relaxation factor from idle mode and fixed relaxation period from idle mode are used for inactive mode. The relaxation within single RAN PTW is only for evaluation and measurement, not for searching,

|  |
| --- |
| **Relaxation scenarios for INACTIVE mode neighbour cell measurements** RAN4 to agree define relaxed neighbour cell measurement requirements for Rel-18 RedCap UE in INACTIVE mode for the relaxation scenarios listed below: The following relaxation cases (as R17 redcap) are to be specified for R18 eRedCap INACTIVE mode with inactive eDRX > 10.24s:* Measurements for UE fulfilling stationary criterion
* Measurements for a UE fulfilling not-at-cell edge while stationary criterion
* Measurements for a UE fulfilling stationary and not-at-cell-edge criteria
* Measurements for a UE fulfilling low mobility and stationary criteria
* Measurements for a UE fulfilling low mobility and not-at-cell-edge while stationary criteria
* Measurements for a UE fulfilling not-at-cell edge and not-at-cell edge while stationary criteria
* Measurements for a UE fulfilling low mobility and not-at-cell edge criteria and not-at-cell-edge while stationary criteria
* Measurements for a UE fulfilling low mobility, not-at-cell edge and stationary criterion
* Measurements for UE fulfilling low mobility criterion
* Measurements for UE fulfilling not-at-cell edge criterion
* Measurements for UE fulfilling low mobility and not-at-cell edge criteria
 |

 |
|  |  |
| ***Summary of change:*** | Relaxation factor from idle mode and fixed relaxation period from idle mode are used for inactive mode. The relaxation within single RAN PTW is only for evaluation and measurement, not for searching. |
|  |  |
| ***Consequences if not approved:*** | There will be missing requirements for eDRX\_INACTIVE > 10.24s. |
|  |  |
| ***Clauses affected:*** | Added a new sub-clause 5.1B.2.9, 5.1B.2.10, 5.1B.2.11 |
|  |  |
|  | **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>

5.1B.2.9 Measurements of intra-frequency NR cells for UE configured with relaxed measurement criterion

The requirements in clause 4.2B.2.9 apply for UE configured with relaxed measurement criterion except when UE is configured with eDRX\_IDLE cycle greater than 10.24 s and UE has fulfilled stationary criterion or low mobility criterion or not-at-cell edge criterion.

If the UE is configured with eDRX\_IDLE cycle greater than 10.24 s in FR1 and FR2, and UE has fulfilled stationary criterion or low mobility criterion or not-at-cell edge criterion, and

* when UE is not configured with eDRX by [*ran-ExtendedPagingCycle-r18*] or *eDRX-AllowedInactive-r18* is not signalled in SIB1, then the requirements in Table Table 5.1B.2.9-1 and Table 5.1B.2.9-2 respectively apply, or
* when UE is configured with eDRX by [*ran-ExtendedPagingCycle-r18*] and *eDRX-AllowedInactive-r18* is signalled in SIB1, the requirements defined in section 4.2B.2.9 shall apply with Tdetect, NR\_intra\_RedCap\_Relax, Tmeasure, NR\_intra \_RedCap\_Relax and Tevaluate, NR\_intra \_RedCap\_Relax defined in Table 5.1B.2.9-3 and Table 5.1B.2.9-4.

**Table 5.1B.2.9-1: Tdetect, Tmeasure and Tevaluate for inactive Redcap UE configured with eDRX\_IDLE cycle (Frequency range FR1)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **eDRX\_IDLE cycle length [s]** | **DRX or eDRX INACTIVE cycle length [s]** | **Tdetect,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tmeasure,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tevaluate,NR\_Intra\_RedCap\_Relax [s] (number of DRX or INACTIVE eDRX cycles)** |
|
| 20.48 ≤eDRX\_IDLE cycle length ≤ 10485.76 | 0.32 | 11.52 x M2 x K4 (36 x M2 x K4) | 1.28 x M2 x K4 (4 x M2 x K4) | 5.12 x M2 x K4 (16 x M2 x K4) |
| 0.64 | 17.92 x K4 (28 x K4) | 1.28 x K4 (2 x K4) | 5.12 x K4 (8 x K4) |
| 1.28 | 32 x K4 (25 x K4) | 1.28 x K4 (1 x K4) | 6.4 x K4 (5 x K4) |
| 2.56 | 58.88 x K4 (23 x K4) | 2.56 x K4 (1 x K4) | 7.68 x K4 (3 x K4) |
| 5.12 | 117.76 x K4 (23 x K4) | 5.12 x K4 (1 x K4) | 15.36 x K4 (3 x K4) |
| 10.24 | 235.52 x K4 (23) | 10.24 x K4 (1 x K4) | 30.72 x K4 (3 x K4) |
| Note 1: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1.Note 2: K3 = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

**Table 5.1B.2.9-2: Tdetect, Tmeas and Tevaluate for inactive Redcap UE configured with eDRX\_IDLE cycle, (Frequency range FR2)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **eDRX\_IDLE cycle length [s]** | **DRX or eDRX INACTIVE cycle length [s]** | **Scaling Factor (N1)** | **Tdetect,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tmeasure,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tevaluate,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** |
|
| 20.48 ≤eDRX\_IDLE cycle length ≤10485.76 | 0.32 | 8 | 11.52 x N1 x M2 x K4 (36 x N1 x M2 x K4) | 1.28 x N1 x M2 x K4 (4 x N1 x M2 x K4) | 5.12 x N1 x M2 x K4 (16 x N1 x M2 x K4) |
| 0.64 | 5 | 17.92x N1 x K4 (28 x N1 x K4) | 1.28 x N1 x K4 (2 x N1 x K4) | 5.12 x N1 x K4 (8 x N1 x K4) |
| 1.28 | 4 | 32 x N1 x K4 (25 x N1 x K4) | 1.28 x N1 x K4 (1 x N1 x K4) | 6.4 x N1 x K4 (5 x N1 x K4) |
| 2.56 | 3 | 58.88 x N1 x K4 (23 x N1 x K4) | 2.56 x N1 x K4 (1 x N1 x K4) | 7.68 x N1 x K4 (3 x N1 x K4) |
| 5.12 | 3 | 117.76 x N1 x K4 (23 x N1 x K4) | 5.12 x N1 x K4 (1 x N1 x K4) | 15.36 x N1 x K4 (3 x N1 x K4) |
| 10.24 | 3 | 235.52 x N1 x K4 (23 x N1 x K4) | 10.24 x N1 x K4 (1 x N1 x K4) | 30.72 x N1 x K4 (3 x N1 x K4) |
| Note 1: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1.Note 2: K3 = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

Table 5.1B.2.9-3: Tdetect,NR\_Intra\_RedCap\_Relax, Tmeasure,NR\_Intra\_RedCap\_Relax and Tevaluate,NR\_Intra\_RedCap\_Relax for Redcap UE configured with eDRX\_IDLE cycle and eDRX\_INACTIVE cycle (Frequency range FR1)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle andeDRX\_INACTIVE cycle length [s] | RAN DRX cycle length [s] | eDRX INACTIVE PTW length [s] (number of 1.28s periods) | Tdetect,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tmeasure,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tevaluate,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) |
| 20.48≤eDRX\_IDLE cycle length ≤163.8420.48 ≤eDRX\_INACTIVE cycle length ≤ 163.84 | 0.32 | ≥1.28 (1) | (23 x Kx) | 0.32 x M2 x Kx (1 x 1.5 x Kx) | 0.64 x M2 x Kx (2 x 1.5) |
| 0.64 | ≥1.28 (1) | 0.64 x Kx (1 x Kx) | 1.28 x Kx (2 x Kx) |
| 1.28 | ≥2.56 (2) | 1.28 x Kx (1 x Kx) | 2.56 x Kx (2 x Kx) |
| 2.56 | ≥5.12 (4) | 2.56 x Kx (1 x Kx) | 5.12 x Kx (2 x Kx) |
| 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 [1].Note 4: The number of DRX cycles in this table is given for the DRX cycles within RAN PTWs.Note 5: The eDRX\_INACTIVE cycle lengths are as specified in Section 10.5.5.32 of TS 24.008 [34].Note 6: The lower bound of PTW length is derived based on .Note 7: Kx = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. Kx = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion.Note 8: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1. |

Table 5.1B.2.9-4: Tdetect,NR\_Intra\_RedCap\_Relax, Tmeasure,NR\_Intra\_RedCap\_Relax and Tevaluate,NR\_Intra\_RedCap\_Relax for Redcap UE configured with eDRX\_IDLE cycle and eDRX\_INACTIVE cycle (Frequency range FR2)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle andeDRX\_INACTIVE cycle length [s] | RAN DRX cycle length [s] | eDRX INACTIVE PTW length [s] (number of 1.28s periods) | Scaling Factor (N1) Note1 | Tdetect,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tmeasure,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tevaluate,NR\_Intra\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) |
| 20.48≤eDRX\_IDLE cycle length ≤163.8420.48 ≤eDRX\_INACTIVE cycle length ≤163.84 | 0.32 | ≥5.12 (4) | 8 | (23 x N1 x Kx) | 0.32 x N1 x Kx (1 x N1 x Kx) | 0.64 x N1 x Kx (2 x N1 x Kx) |
| 0.64 | ≥6.4 (5) | 5 | 0.64 x N1 x Kx (1 x N1 x Kx) | 1.28 x N1 x Kx (2 x N1 x Kx) |
| 1.28 | ≥10.24 (8) | 4 | 1.28 x N1 x Kx (1 x N1 x Kx) | 2.56 x N1 x Kx (2 x N1 x Kx) |
| 2.56 | ≥15.36 (12) | 3 | 2.56 x N1 x Kx (1 x N1 x Kx) | 5.12 x N1 x Kx (2 x N1 x Kx) |
| Note 1: Applies for RedCap UE of all power class.Note 2: The number of DRX cycles in this table is given for the DRX cycles within RAN PTWs.Note 3: The eDRX\_INACTIVE cycle lengths are as specified in Section 10.5.5.32 of TS 24.008 [34].Note 4: The lower bound of PTW length is derived based on .Note 5: When eDRX\_INACTIVE=20.48s and DRX=0.32s, UE is allowed to perform cell evaluation within PTW in every 2 eDRX \_INACTIVE cycles.Note 6: RAN DRX cycle in this table is UE specific DRX value configured by RRC specified in [1].Note 7: The number of RAN DRX cycles in this table is given for the DRX cycles within RAN configured PTWs.Note 8: eDRX INACTIVE PTW in this table is RAN configured PTW [1].Note 9: Kx = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. Kx = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

5.1B.2.10 Measurements of inter-frequency NR cells for UE configured with relaxed measurement criterion

The requirements in clause 4.2B.2.10 apply for UE configured with relaxed measurement criterion except when UE is configured with eDRX\_IDLE cycle greater than 10.24 s and UE has fulfilled stationary criterion or low mobility criterion or not-at-cell edge criterion.

If the UE is configured with eDRX\_IDLE cycle greater than 10.24 s in FR1 and FR2, and UE has fulfilled stationary criterion or low mobility criterion or not-at-cell edge criterion, and

* when UE is not configured with eDRX by [*ran-ExtendedPagingCycle-r18*] or *eDRX-AllowedInactive-r18* is not signalled in SIB1, then the requirements in Table Table 5.1B.2.10-1 and Table 5.1B.2.10-2 respectively apply, or
* when UE is configured with eDRX by [*ran-ExtendedPagingCycle-r18*] and *eDRX-AllowedInactive-r18* is signalled in SIB1, the requirements defined in section 4.2B.2.10 shall apply with Tdetect, NR\_inter\_RedCap\_Relax, Tmeasure, NR\_inter \_RedCap\_Relax and Tevaluate, NR\_inter \_RedCap\_Relax defined in Table 5.1B.2.10-3 and Table 5.1B.2.10-4.

**Table 5.1B.2.10-1: Tdetect, Tmeasure and Tevaluate for inactive Redcap UE configured with eDRX\_IDLE cycle (Frequency range FR1)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **eDRX\_IDLE cycle length [s]** | **DRX or eDRX INACTIVE cycle length [s]** | **Tdetect,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tmeasure,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tevaluate,NR\_Inter\_RedCap\_Relax [s] (number of DRX or INACTIVE eDRX cycles)** |
|
| 20.48 ≤eDRX\_IDLE cycle length ≤ 10485.76 | 0.32 | 11.52 x M2 x K4 (36 x M2 x K4) | 1.28 x M2 x K4 (4 x M2 x K4) | 5.12 x M2 x K4 (16 x M2 x K4) |
| 0.64 | 17.92 x K4 (28 x K4) | 1.28 x K4 (2 x K4) | 5.12 x K4 (8 x K4) |
| 1.28 | 32 x K4 (25 x K4) | 1.28 x K4 (1 x K4) | 6.4 x K4 (5 x K4) |
| 2.56 | 58.88 x K4 (23 x K4) | 2.56 x K4 (1 x K4) | 7.68 x K4 (3 x K4) |
| 5.12 | 117.76 x K4 (23 x K4) | 5.12 x K4 (1 x K4) | 15.36 x K4 (3 x K4) |
| 10.24 | 235.52 x K4 (23) | 10.24 x K4 (1 x K4) | 30.72 x K4 (3 x K4) |
| Note 1: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1.Note 2: K3 = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

**Table 5.1B.2.10-2: Tdetect, Tmeas and Tevaluate for inactive Redcap UE configured with eDRX\_IDLE cycle, (Frequency range FR2)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **eDRX\_IDLE cycle length [s]** | **DRX or eDRX INACTIVE cycle length [s]** | **Scaling Factor (N1)** | **Tdetect,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tmeasure,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tevaluate,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** |
|
| 20.48 ≤eDRX\_IDLE cycle length ≤10485.76 | 0.32 | 8 | 11.52 x N1 x M2 x K4 (36 x N1 x M2 x K4) | 1.28 x N1 x M2 x K4 (4 x N1 x M2 x K4) | 5.12 x N1 x M2 x K4 (16 x N1 x M2 x K4) |
| 0.64 | 5 | 17.92x N1 x K4 (28 x N1 x K4) | 1.28 x N1 x K4 (2 x N1 x K4) | 5.12 x N1 x K4 (8 x N1 x K4) |
| 1.28 | 4 | 32 x N1 x K4 (25 x N1 x K4) | 1.28 x N1 x K4 (1 x N1 x K4) | 6.4 x N1 x K4 (5 x N1 x K4) |
| 2.56 | 3 | 58.88 x N1 x K4 (23 x N1 x K4) | 2.56 x N1 x K4 (1 x N1 x K4) | 7.68 x N1 x K4 (3 x N1 x K4) |
| 5.12 | 3 | 117.76 x N1 x K4 (23 x N1 x K4) | 5.12 x N1 x K4 (1 x N1 x K4) | 15.36 x N1 x K4 (3 x N1 x K4) |
| 10.24 | 3 | 235.52 x N1 x K4 (23 x N1 x K4) | 10.24 x N1 x K4 (1 x N1 x K4) | 30.72 x N1 x K4 (3 x N1 x K4) |
| Note1: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1.Note 2: K3 = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

Table 5.1B.2.10-3: Tdetect,NR\_Inter\_RedCap\_Relax, Tmeasure,NR\_Inter\_RedCap\_Relax and Tevaluate,NR\_Inter\_RedCap\_Relax for Redcap UE configured with eDRX\_IDLE cycle and eDRX\_INACTIVE cycle (Frequency range FR1)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle andeDRX\_INACTIVE cycle length [s] | RAN DRX cycle length [s] | eDRX INACTIVE PTW length [s] (number of 1.28s periods) | Tdetect,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tmeasure,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tevaluate,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) |
| 20.48≤eDRX\_IDLE cycle length ≤163.8420.48 ≤eDRX\_INACTIVE cycle length ≤ 163.84 | 0.32 | ≥1.28 (1) | (23 x Kx) | 0.32 x 1.5 x Kx (1 x 1.5 x Kx) | 0.64 x 1.5 x Kx (2 x 1.5) |
| 0.64 | ≥1.28 (1) | 0.64 x Kx (1 x Kx) | 1.28 x Kx (2 x Kx) |
| 1.28 | ≥2.56 (2) | 1.28 x Kx (1 x Kx) | 2.56 x Kx (2 x Kx) |
| 2.56 | ≥5.12 (4) | 2.56 x Kx (1 x Kx) | 5.12 x Kx (2 x Kx) |
| 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 [1].Note 4: The number of DRX cycles in this table is given for the DRX cycles within RAN PTWs.Note 5: The eDRX\_INACTIVE cycle lengths are as specified in Section 10.5.5.32 of TS 24.008 [34].Note 6: The lower bound of PTW length is derived based on .Note 7: Kx = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. Kx = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

Table 5.1B.2.10-4: Tdetect,NR\_Inter\_RedCap\_Relax, Tmeasure,NR\_Inter\_RedCap\_Relax and Tevaluate,NR\_Inter\_RedCap\_Relax for Redcap UE configured with eDRX\_IDLE cycle and eDRX\_INACTIVE cycle (Frequency range FR2)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle andeDRX\_INACTIVE cycle length [s] | RAN DRX cycle length [s] | eDRX INACTIVE PTW length [s] (number of 1.28s periods) | Scaling Factor (N1) Note1 | Tdetect,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tmeasure,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) | Tevaluate,NR\_Inter\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles) |
| 20.48≤eDRX\_IDLE cycle length ≤163.8420.48 ≤eDRX\_INACTIVE cycle length ≤163.84 | 0.32 | ≥5.12 (4) | 8 | (23 x N1 x Kx) | 0.32 x N1 x Kx (1 x N1 x Kx) | 0.64 x N1 x Kx (2 x N1 x Kx) |
| 0.64 | ≥6.4 (5) | 5 | 0.64 x N1 x Kx (1 x N1 x Kx) | 1.28 x N1 x Kx (2 x N1 x Kx) |
| 1.28 | ≥10.24 (8) | 4 | 1.28 x N1 x Kx (1 x N1 x Kx) | 2.56 x N1 x Kx (2 x N1 x Kx) |
| 2.56 | ≥15.36 (12) | 3 | 2.56 x N1 x Kx (1 x N1 x Kx) | 5.12 x N1 x Kx (2 x N1 x Kx) |
| Note 1: Applies for RedCap UE of all power class.Note 2: The number of DRX cycles in this table is given for the DRX cycles within RAN PTWs.Note 3: The eDRX\_INACTIVE cycle lengths are as specified in Section 10.5.5.32 of TS 24.008 [34].Note 4: The lower bound of PTW length is derived based on .Note 5: When eDRX\_INACTIVE=20.48s and DRX=0.32s, UE is allowed to perform cell evaluation within PTW in every 2 eDRX \_INACTIVE cycles.Note 6: RAN DRX cycle in this table is UE specific DRX value configured by RRC specified in [1].Note 7: The number of RAN DRX cycles in this table is given for the DRX cycles within RAN configured PTWs.Note 8: eDRX INACTIVE PTW in this table is RAN configured PTW [1].Note 9: Kx = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. Kx = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

5.1B.2.11 Measurements of inter-RAT E-UTRAN cells for UE configured with relaxed measurement criterion

The requirements in clause 4.2B.2.11 apply for UE configured with relaxed measurement criterion except when UE is configured with eDRX\_IDLE cycle greater than 10.24 s and UE has fulfilled stationary criterion or low mobility criterion or not-at-cell edge criterion.

If the UE is configured with eDRX\_IDLE cycle greater than 10.24 s in FR1 and FR2, and UE has fulfilled stationary criterion or low mobility criterion or not-at-cell edge criterion, and

* when UE is not configured with eDRX by [*ran-ExtendedPagingCycle-r18*] or *eDRX-AllowedInactive-r18* is not signalled in SIB1, then the requirements in Table Table 5.1B.2.11-1 apply, or
* when UE is configured with eDRX by [*ran-ExtendedPagingCycle-r18*] and *eDRX-AllowedInactive-r18* is signalled in SIB1, the requirements defined in section 4.2B.2.11 shall apply with Tdetect, EUTRAN\_RedCap\_Relax, Tmeasure, EUTRAN \_RedCap\_Relax and Tevaluate, EUTRAN \_RedCap\_Relax defined in Table 5.1B.2.11-2.

**Table 5.1B.2.11-1: Tdetect, Tmeasure and Tevaluate for inactive Redcap UE configured with eDRX\_IDLE cycle (Frequency range FR1)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **eDRX\_IDLE cycle length [s]** | **DRX or eDRX INACTIVE cycle length [s]** | **Tdetect, EUTRAN\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tmeasure, EUTRAN\_RedCap\_Relax [s] (number of DRX or eDRX INACTIVE cycles)** | **Tevaluate, EUTRAN\_RedCap\_Relax [s] (number of DRX or INACTIVE eDRX cycles)** |
|
| 20.48 ≤eDRX\_IDLE cycle length ≤ 10485.76 | 0.32 | 11.52 x M2 x K4 (36 x M2 x K4) | 1.28 x M2 x K4 (4 x M2 x K4) | 5.12 x M2 x K4 (16 x M2 x K4) |
| 0.64 | 17.92 x K4 (28 x K4) | 1.28 x K4 (2 x K4) | 5.12 x K4 (8 x K4) |
| 1.28 | 32 x K4 (25 x K4) | 1.28 x K4 (1 x K4) | 6.4 x K4 (5 x K4) |
| 2.56 | 58.88 x K4 (23 x K4) | 2.56 x K4 (1 x K4) | 7.68 x K4 (3 x K4) |
| 5.12 | 117.76 x K4 (23 x K4) | 5.12 x K4 (1 x K4) | 15.36 x K4 (3 x K4) |
| 10.24 | 235.52 x K4 (23 x K4) | 10.24 x K4 (1 x K4) | 30.72 x K4 (3 x K4) |
| Note1: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1.Note 2: K3 = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

Table 5.1B.2.5-2: Tdetect,EUTRAN\_RedCap\_Relax, Tmeasure,EUTRAN\_RedCap\_Relax, and Tevaluate,EUTRAN\_RedCap\_Relax for UE configured with eDRX\_IDLE cycle and eDRX\_INACTIVE ≥ 20.48s, (Frequency range FR1)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| eDRX\_IDLE cycle andeDRX\_Inactive cycle length [s] | RAN DRX cycle length [s] | eDRX Inactive PTW length [s] (number of 1.28s periods) | Tdetect,EUTRAN\_RedCap\_Relax [s] (number of RAN DRX cycles Note 3) | Tmeasure,EUTRAN\_RedCap\_Relax [s] (number of RAN DRX cycles Note 3) | Tevaluate,E-UTRAN\_RedCap\_Relax[s] (number of RAN DRX cycles Note 3) |
| 20.48 ≤ eDRX\_IDLE cycle length ≤ 163.8420.48 ≤ eDRX\_INACTIVE cycle length ≤ 163.84 | 0.32 | ≥1.28 (1) | x Kx (23 x Kx) | 0.32 x Kx (1 x Kx) | 0.64 x Kx (2 x Kx) |
| 0.64 | ≥1.28 (1) | 0.64 x Kx (1 x Kx) | 1.28 x Kx (2 x Kx) |
| 1.28 | ≥2.56 (2) | 1.28 x Kx (1 x Kx) | 2.56 x Kx (2 x Kx) |
| 2.56 | ≥5.12 (4) | 2.56 x Kx (1 x Kx) | 5.12 x Kx (2 x Kx) |
| 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 RAN DRX cycles within RAN configured PTWs.NOTE 3: eDRX Inactive PTW in this table is RAN configured PTW [1].NOTE 4: The eDRX\_IDLE cycle lengths are as specified in Section 10.5.5.32 of TS 24.008 [34].NOTE 5: The eDRX\_INACITVE cycle lengths are ran-ExtendedPagingCycle-r18 as specified in [2]NOTE 6: The lower bound of PTW length is derived based on .NOTE 7: When eDRX=20.48s and DRX=0.32s, UE is allowed to perform cell evaluation within PTW in every 2 eDRX cycles.NOTE 8: Kx = 6 is the measurement relaxation factor applicable for UE fulfilling the *stationaryMobilityEvaluation* [2] criterion. Kx = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion or fulfilling the *cellEdgeEvaluation* [2] criterion. |

<End of Change 1>