**3GPP TSG- Meeting #**

**, , – May 24th**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | [NR\_UE\_pow\_sav-Core] Corrections and clarifications | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_UE\_pow\_sav-Core | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | Current specification is not clear regarding the UE behaviour and conditions | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clarifying:   * Conditions for Measurements for UE fulfilling low mobility criterion * Conditions for Measurements for UE fulfilling not-at-cell edge criterion * Conditions for Measurements for UE fulfilling low mobility and not-at-cell edge criteria | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Unclear specification text and UE requirements and behaviour. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.2.9, 4.2.2.10 and 4.2.2.11 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | The CR related to the current specification was discussed at RAN4-97e and agreed in R4-2017131. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<Start of Change #1>

4.2.2.9 Measurements of intra-frequency NR cells for UE configured with relaxed measurement criterion

4.2.2.9.1 Introduction

This clause contains the requirements for measurements on intra-frequency NR cells when Srxlev ≤ SIntraSearchP or Squal ≤ SIntraSearchQ and when the UE is configured any of the following relaxed measurement critera:

- Relaxed measurement criterion for UE with low mobility defined in clause 5.2.4.9.1 in [1],

- Relaxed measurement criterion for UE not-at-cell edge defined in clause 5.2.4.9.2 in [1],

- Both low mobility criterion and not-at-cell edge criterion as defined in clauses 5.2.4.9.1 and 5.2.4.9.2 in [1] respectively.

4.2.2.9.2 Measurements for UE fulfilling low mobility criterion

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

- UE is only configured with *lowMobilityEvaluation* [2] criterion and UE has fulfilled the *lowMobilityEvaluation* [2] criterion, or

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion and *combineRelaxedMeasCondition* [2] is not configured, and UE has fulfilled only the *lowMobilityEvaluation* [2] criterion.

The requirements defined in clause 4.2.2.3 apply for this clause except that:

- Tdetect,NR\_Intraas specified in Table 4.2.2.9.2-1.

- Tmeasure,NR\_Intra as specified in Table 4.2.2.9.2-1.

- Tevaluate,NR\_Intra as specified in Table 4.2.2.9.2-1.

**Table 4.2.2.9.2-1: Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **DRX cycle length [s]** | **Scaling Factor (N1)** | | **Tdetect,NR\_Intra [s] (number of DRX cycles)** | **Tmeasure,NR\_Intra [s] (number of DRX cycles)** | **Tevaluate,NR\_Intra**  **[s] (number of DRX cycles)** |
|  | **FR1** | **FR2Note1** |
| 0.32 | 1 | 8 | 11.52 x N1 x M2 x K1 (36 x N1 x M2 x K1) | 1.28 x N1 x M2 x K1 (4 x N1 x M2 x K1) | 5.12 x N1 x M2 x K1 (16 x N1 x M2 x K1) |
| 0.64 |  | 5 | 17.92 x 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 power class 2&3&4. For UE supporting power class 1, N1 = 8 for all DRX cycle length.  Note 2: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1. If high layer signalling *smtc2-LP-r16* is configured, for cells indicated in the *pci-List* parameter in *smtc2-LP-r16*, the SMTC periodicity corresponds to the value of higher layer parameter *smtc2-LP-r16*; for the other cells, the SMTC periodicity corresponds to the value of higher layer parameter *smtc*.  Note 3: K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion. | | | | | |

4.2.2.9.3 Measurements for UE fulfilling not-at-cell edge criterion

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

- UE is only configured with *cellEdgeEvaluation* [2] criterion and UE has fulfilled the *cellEdgeEvaluation* [2] criterion, or

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criteria and *combineRelaxedMeasCondition* [2] is not configured, and UE has fulfilled only the *cellEdgeEvaluation* [2] criterion.

The requirements defined in clause 4.2.2.3 apply for this clause except that:

- Tdetect,NR\_Intraas specified in Table 4.2.2.9.3-1.

- Tmeasure,NR\_Intra as specified in Table 4.2.2.9.3-1.

- Tevaluate,NR\_Intra as specified in Table 4.2.2.9.3-1.

**Table 4.2.2.9.3-1: Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **DRX cycle length [s]** | **Scaling Factor (N1)** | | **Tdetect,NR\_Intra [s] (number of DRX cycles)** | **Tmeasure,NR\_Intra [s] (number of DRX cycles)** | **Tevaluate,NR\_Intra**  **[s] (number of DRX cycles)** |
|  | **FR1** | **FR2Note1** |
| 0.32 | 1 | 8 | 11.52 x N1 x M2 x K1 (36 x N1 x M2 x K1) | 1.28 x N1 x M2 x K1 (4 x N1 x M2 x K1) | 5.12 x N1 x M2 x K1 (16 x N1 x M2 x K1) |
| 0.64 |  | 5 | 17.92 x 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 power class 2&3&4. For UE supporting power class 1, N1 = 8 for all DRX cycle length.  Note 2: M2 = 1.5 if SMTC periodicity of measured intra-frequency cell > 20 ms; otherwise M2=1. If high layer signalling *smtc2-LP-r16* is configured, for cells indicated in the *pci-List* parameter in *smtc2-LP-r16*, the SMTC periodicity corresponds to the value of higher layer parameter *smtc2-LP-r16*; for the other cells, the SMTC periodicity corresponds to the value of higher layer parameter *smtc*.  Note 3: K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *cellEdgeEvaluation* [2] criterion. | | | | | |

4.2.2.9.4 Measurements for UE fulfilling low mobility and not-at-cell edge criteria

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

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion, and

- both *lowMobilityEvaluation* [2] and *cellEdgeEvaluation* [2] criteria are fulfilled, and

- less than 1 hour have passed since measurements for cell reselection were last performed

In this case the UE is not required to meet Tdetect,NR\_Intra, Tmeasure,NR\_Intra and Tevaluate,NR\_Intra as defined in Table 4.2.2.3-1.

4.2.2.10 Measurements of inter-frequency NR cells for UE configured with relaxed measurement criterion

4.2.2.10.1 Introduction

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

- Relaxed measurement criterion for UE with low mobility defined in clause 5.2.4.9.1 in [1],

- Relaxed measurement criterion for UE not-at-cell edge defined in clause 5.2.4. 9.2 in [1],

- Both low mobility criterion and not-at-cell edge criterion as defined in clauses 5.2.4. 9.1 and 5.2.4.9.2 in [1] respectively.

4.2.2.10.2 Measurements for UE fulfilling low mobility criterion

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

- UE is only configured with *lowMobilityEvaluation* [2] criterion and UE has fulfilled the *lowMobilityEvaluation* [2] criterion, or

- UE is configured with both *lowMobilityEvaluation* [2] and *cellEdgeEvaluation* [2] criterion and *combineRelaxedMeasCondition* [2] is not configured, and

- UE has fulfilled only the *lowMobilityEvaluation* [2] criterion.

The UE shall not relax measurements on NR inter-frequency carriers configured for idle mode CA/DC measurements (defined in clause 4.4) while T331 is running.

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

- Tdetect,NR\_Inter\_Relaxas specified in Table 4.2.2.10.2-1.

- Tmeasure,NR\_Inter\_Relax as specified in Table 4.2.2.10.2-1.

- Tevaluate,NR\_Inter\_Relax as specified in Table 4.2.2.10.2-1.

- The UE shall be able to evaluate whether a newly detectable inter-frequency NR cell meets the reselection criteria defined in TS38.304 [1] within Ncarrier\_Relax \* Tdetect,NR\_Inter\_Relax + Ncarrier\_Non\_relax \* Tdetect,NR\_Inter. Cells which have been detected shall be measured at least every Ncarrier\_Relax \* Tmeasure,NR\_Inter\_Relax + Ncarrier\_Non\_relax \* Tmeasure,NR\_Inter. 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 + Ncarrier\_Non\_relax \* Tevaluate,NR\_Inter.

- When T331 is running,

- The parameter Ncarrier\_Relax is the total number of NR inter-frequency carriers not configured for idle mode CA/DC measurements.

- The parameter Ncarrier\_Non\_relax is the total number of NR inter-frequency carriers configured for idle mode CA/DC measurements.

- When 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.

- The parameter Ncarrier\_Non\_relax =0.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ and 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 seconds where Thigher\_priority\_search is described in clause 4.2.2.7 and, K2 = 60. Otherwise if the UE is not configured with *highPriorityMeasRelax* [2] then 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 4.2.2.10.2-1: 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** | **Tmeasure,NR\_Inter\_Relax [s] (number of DRX cycles)** | **Tevaluate,NR\_Inter\_Relax [s] (number of DRX cycles)** |
|  | **FR1** | **FR2Note1** | **cycles)** |  |  |
| 0.32 | 1 | 8 | 11.52 x N1 x 1.5 x K1 (36 x N1 x 1.5 x K1) | 1.28 x N1 x 1.5 x K1 (4 x N1 x 1.5 x K1) | 5.12 x N1 x 1.5 x K1 (16 x N1 x 1.5 x K1) |
| 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 power class 2&3&4. For UE supporting power class 1, N1 = 8 for all DRX cycle length.  Note 2: K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the low mobility. | | | | | |

4.2.2.10.3 Measurements for UE fulfilling not-at-cell edge criterion

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

- UE is only configured with *cellEdgeEvaluation* [2] criterion, and UE has fulfilled the *cellEdgeEvaluation* [2] criterion or

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion and *combineRelaxedMeasCondition* [2] is not configured, and

- UE has fulfilled only the *cellEdgeEvaluation* [2] criterion.

The UE shall not relax measurements on NR inter-frequency carriers configured for idle mode CA/DC measurements (defined in clause 4.4) while T331 is running.

When Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ then the requirements defined in clause 4.2.2.4 apply for this clause except that:

- Tdetect,NR\_Inter\_Relaxas specified in Table 4.2.2.10.3-1.

- Tmeasure,NR\_Inter\_Relax as specified in Table 4.2.2.10.3-1.

- Tevaluate,NR\_Inter\_Relax as specified in Table 4.2.2.10.3-1.- The UE shall be able to evaluate whether a newly detectable inter-frequency NR cell meets the reselection criteria defined in TS38.304 [1] within Ncarrier\_Relax \* Tdetect,NR\_Inter\_Relax + Ncarrier\_Non\_relax \* Tdetect,NR\_Inter. Cells which have been detected shall be measured at least every Ncarrier\_Relax \* Tmeasure,NR\_Inter\_Relax + Ncarrier\_Non\_relax \* Tmeasure,NR\_Inter. 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 + Ncarrier\_Non\_relax \* Tevaluate,NR\_Inter.

-    When T331 is running,

-     The parameter Ncarrier\_Relax is the total number of NR inter-frequency carriers not configured for idle mode CA/DC measurements.

-    The parameter Ncarrier\_Non\_relax is the total number of NR inter-frequency carriers configured for idle mode CA/DC measurements.

-    When 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.

-    The parameter Ncarrier\_Non\_relax =0.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ and regardless of whether the UE is configured with *highPriorityMeasRelax* [2] or not, 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 4.2.2.10.3-1: 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** | **FR2Note1** |  |  |  |
| 0.32 | 1 | 8 | 11.52 x N1 x 1.5 x K1 (36 x N1 x 1.5 x K1) | 1.28 x N1 x 1.5 x K1 (4 x N1 x 1.5 x K1) | 5.12 x N1 x 1.5 x K1 (16 x N1 x 1.5 x K1) |
| 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 power class 2&3&4. For UE supporting power class 1, N1 = 8 for all DRX cycle length.  Note 2: K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *cellEdgeEvaluation* [2] criterion. | | | | | |

4.2.2.10.4 Measurements for UE fulfilling low mobility and not-at-cell edge criterion

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

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

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion, and

- both *lowMobilityEvaluation* [2] and *cellEdgeEvaluation* [2] criteria are fulfilled.

In this case the UE is not required to meet Tdetect,NR\_Inter, Tmeasure,NR\_Inter and Tevaluate,NR\_Inter as defined in Table 4.2.2.4-1.

When Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ, the UE shall search for, measure and evaluate inter-frequency layers of higher, equal or lower priority at least every 1 hour.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ, 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.

4.2.2.11 Measurements of inter-RAT E-UTRAN cells for UE configured with relaxed measurement criterion

4.2.2.11.1 Introduction

This clause contains the requirements for measurements on inter-RAT E-UTRAN cells when the UE is configured with any of following relaxed measurement critera:

- Relaxed measurement criterion for UE with low mobility defined in clause 5.2.4.9.1 in [1],

- Relaxed measurement criterion for UE not-at-cell edge defined in clause 5.2.4.9.2 in [1],

- Both low mobility criterion and not-at-cell edge criterion as defined in clauses 5.2.4.9.1 and 5.2.4.9.2 in [1] respectively.

4.2.2.11.2 Measurements for UE fulfilling low mobility criterion

This clause contains requirements for measurements on inter-RAT E-UTRAN cells provided that:

- T331 timer is not running for EMR measurements on inter-RAT E-UTRAN, and

- UE is only configured with *lowMobilityEvaluation* [2] criterion and UE has fulfilled the *lowMobilityEvaluation* [2] criterion, or

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion and *combineRelaxedMeasCondition* [2] is not configured, and

- UE has fulfilled only the *lowMobilityEvaluation* [2] criterion.

The UE shall not relax measurements on inter-RAT E-UTRAN carriers configured for idle mode CA/DC measurements (defined in clause 4.4) while T331 is running.

When Srxlev ≤ SnonIntraSearchP and Squal ≤ SnonIntraSearchQ then the requirements defined in clause 4.2.2.5 apply for this clause except that:

- Tdetect,EUTRAN\_Relaxas specified in Table 4.2.2.11.2-1.

- Tmeasure,EUTRAN\_Relax as specified in Table 4.2.2.11.2-1.

- Tevaluate,EUTRAN\_Relax as specified in Table 4.2.2.11.2-1.

- The UE shall be able to evaluate whether a newly detectable inter-RAT E-UTRAN cell meets the reselection criteria defined in TS38.304 [1] within NEUTRAN carrier\_Relax \* Tdetect,EUTRAN\_Relax + NEUTRAN carrier\_Non\_relax \* Tdetect,EUTRAN. Cells which have been detected shall be measured at least every NEUTRAN carrier\_Relax \* Tmeasure,EUTRAN\_Relax + NEUTRAN carrier\_Non\_relax \* Tmeasure,EUTRAN. The UE shall be able to evaluate that an already identified inter-RAT E-UTRAN cell has met reselection criterion defined in TS 38.304 [1] within NEUTRAN carrier\_Relax \* Tevaluate,EUTRAN\_Relax + NEUTRAN carrier\_Non\_relax \* Tevaluate,EUTRAN.

- When T331 is running,

- The parameter NEUTRAN carrier\_Relax is the total number of inter-RAT E-UTRAN carriers not configured for idle mode CA/DC measurements.

- The parameter NEUTRAN carrier\_Non\_relax is the total number of inter-RAT E-UTRAN carriers configured for idle mode CA/DC measurements.

- When T331 is not running,

- The parameter NEUTRAN carrier\_Relax is the total number of inter-RAT E-UTRAN carriers configured for mobility measurements only and the number of inter-RAT E-UTRAN carriers configured for both mobility measurement and idle mode CA/DC measurements.

- The parameter NEUTRAN carrier\_Non\_relax =0.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ and the UE is configured with *highPriorityMeasRelax* [2] then the UE shall search for E-UTRA inter-RAT frequency layers of higher priority at least every K2\*Thigher\_priority\_search seconds where Thigher\_priority\_search is described in clause 4.2.2.7 and, K2 = 60. Otherwise if the UE is not configured with *highPriorityMeasRelax* [2] then the UE shall search for E-UTRA inter-RAT frequency layers of higher priority at least every Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2.7.

**Table 4.2.2.11.2-1: Tdetect,EUTRAN\_Relax, Tmeasure,EUTRAN\_Relax, and Tevaluate,EUTRAN\_Relax**

|  |  |  |  |
| --- | --- | --- | --- |
| **DRX cycle length [s]** | **Tdetect,EUTRAN\_Relax [s] (number of DRX cycles)** | **Tmeasure,EUTRAN\_Relax [s] (number of DRX cycles)** | **Tevaluate,EUTRAN\_Relax**  **[s] (number of DRX cycles)** |
| 0.32 | 11.52 x K1 (36 x K1) | 1.28 x K1 (4 x K1) | 5.12 x K1 (16 x K1) |
| 0.64 | 17.92 x K1 (28 x K1) | 1.28 x K1 (2 x K1) | 5.12 x K1 (8 x K1) |
| 1.28 | 32 x K1 (25 x K1) | 1.28 x K1 (1 x K1) | 6.4 x K1 (5 x K1) |
| 2.56 | 58.88 x K1 (23 x K1) | 2.56 x K1 (1 x K1) | 7.68 x K1 (3 x K1) |
| Note 1: K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *lowMobilityEvaluation* [2] criterion. | | | |

4.2.2.11.3 Measurements for UE fulfilling with not-at-cell edge criterion

This clause contains requirements for measurements on inter-RAT E-UTRAN cells provided that:

- T331 timer is not running for EMR measurements on inter-RAT E-UTRAN, and

- UE is only configured with *cellEdgeEvaluation* [2] criterion and UE has fulfilled the *cellEdgeEvaluation* [2] criterion, or

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion and *combineRelaxedMeasCondition* [2] is not configured, and

- UE has fulfilled only the *cellEdgeEvaluation* [2] criterion.

The UE shall not relax measurements on inter-RAT E-UTRAN carriers configured for idle mode CA/DC measurements (defined in clause 4.4) while T331 is running.

When Srxlev ≤ SnonIntraSearchP and Squal ≤ SnonIntraSearchQ then the requirements defined in clause 4.2.2.5 apply for this clause except that:

- Tdetect,EUTRAN\_Relaxas specified in Table 4.2.2.11.3-1.

- Tmeasure,EUTRAN\_Relax as specified in Table 4.2.2.11.3-1.

- Tevaluate,EUTRAN\_Relax as specified in Table 4.2.2.11.3-1.

- The UE shall be able to evaluate whether a newly detectable inter-RAT E-UTRAN cell meets the reselection criteria defined in TS38.304 [1] within NEUTRAN carrier\_Relax \* Tdetect,EUTRAN\_Relax + NEUTRAN carrier\_Non\_relax \* Tdetect,EUTRAN. Cells which have been detected shall be measured at least every NEUTRAN carrier\_Relax \* Tmeasure,EUTRAN\_Relax + NEUTRAN carrier\_Non\_relax \* Tmeasure,EUTRAN. The UE shall be able to evaluate that an already identified inter-RAT E-UTRAN cell has met reselection criterion defined in TS 38.304 [1] within NEUTRAN carrier\_Relax \* Tevaluate,EUTRAN\_Relax + NEUTRAN carrier\_Non\_relax \* Tevaluate,EUTRAN.

- When T331 is running,

- The parameter NEUTRAN carrier\_Relax is the total number of inter-RAT E-UTRAN carriers not configured for idle mode CA/DC measurements.

- The parameter NEUTRAN carrier\_Non\_relax is the total number of inter-RAT E-UTRAN carriers configured for idle mode CA/DC measurements.

- When T331 is not running,

- he parameter NEUTRAN carrier\_Relax is the total number of inter-RAT E-UTRAN carriers configured for mobility measurements only and the number of inter-RAT E-UTRAN carriers configured for both mobility measurement and idle mode CA/DC measurements.

- The parameter NEUTRAN carrier\_Non\_relax =0.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ and regardless of whether the UE is configured with *highPriorityMeasRelax* [2] or not, the UE shall search for inter-RAT E-UTRAN frequency layers of higher priority at least every Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2.7.

**Table 4.2.2.11.3-1: Tdetect,EUTRAN\_Relax, Tmeasure,EUTRAN\_Relax, and Tevaluate,EUTRAN\_Relax**

|  |  |  |  |
| --- | --- | --- | --- |
| **DRX cycle length [s]** | **Tdetect,EUTRAN [s] (number of DRX cycles)** | **Tmeasure,EUTRAN [s] (number of DRX cycles)** | **Tevaluate,EUTRAN**  **[s] (number of DRX cycles)** |
| 0.32 | 11.52 x K1 (36 x K1) | 1.28 x K1 (4 x K1) | 5.12 x K1 (16 x K1) |
| 0.64 | 17.92 x K1 (28 x K1) | 1.28 x K1 (2 x K1) | 5.12 x K1 (8 x K1) |
| 1.28 | 32 x K1 (25 x K1) | 1.28 x K1 (1 x K1) | 6.4 x K1 (5 x K1) |
| 2.56 | 58.88 x K1 (23 x K1) | 2.56 x K1 (1 x K1) | 7.68 x K1 (3 x K1) |
| Note 1: K1 = 3 is the measurement relaxation factor applicable for UE fulfilling the *cellEdgeEvaluation* [2] criterion. | | | |

4.2.2.11.4 Measurements for UE fulfilling low mobility and not-at-cell edge criterion

This clause contains requirements for measurements on inter-RAT E-UTRAN cells provided that:

- T331 timer is not running for EMR measurements on inter-RAT E-UTRAN, and

- UE is configured with both *lowMobilityEvaluation* [2] criterion and *cellEdgeEvaluation* [2] criterion, and

- both *lowMobilityEvaluation* [2] and *cellEdgeEvaluation* [2] criteria are fulfilled.

In this case the UE is not required to meet Tdetect,EUTRAN , Tmeasure,EUTRAN and Tevaluate,EUTRAN as defined in Table 4.2.2.5-1.

When Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ, the UE shall search for, measure and evaluate inter-RAT E-UTRAN layers of higher or lower priority at least every 1 hour.

When Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ, the UE shall search for inter-RAT E-UTRAN 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.

<End of Changes>