**3GPP TSG-RAN WG4 Meeting # 95-e *R4-2008634***

**Electronic Meeting, 25 May – 5 June, 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **0723** | **rev** | **-** | **Current version:** | **16.3.0** |  |
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| *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 on cell re-selection requirement for NR-EUTRAN measurement in TS38.133 |
|  |  |
| ***Source to WG:*** | vivo |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_HST-Core |  | ***Date:*** | 2020-05-15 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | The cell reselection requirements inter-RAT EUTRAN carriers are specified in NR HST. |
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| ***Summary of change:*** | Capture the requirement of cell reselection requirements to inter-RAT EUTRAN HST carriers. |
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| ***Consequences if not approved:*** | The specification is not completed |
|  |  |
| ***Clauses affected:*** |  |
|  |  |
|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

## << Start of change 1>>

#### 4.2.2.5 Measurements of inter-RAT E-UTRAN cells

If Srxlev > SnonIntraSearchP and Squal > SnonIntraSearchQ then the UE shall search for inter-RAT E-UTRAN layers of higher priority at least every Thigher\_priority\_search where Thigher\_priority\_search is described in clause 4.2.2

If Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ then the UE shall search for and measure inter-RAT E-UTRAN layers of higher, lower priority in preparation for possible reselection. In this scenario, the minimum rate at which the UE is required to search for and measure higher priority inter-RAT E-UTRAN layers shall be the same as that defined below for lower priority RATs.

The requirements in this clause apply for inter-RAT E-UTRAN FDD measurements and E-UTRA TDD measurements. When the measurement rules indicate that inter-RAT E-UTRAN cells are to be measured, the UE shall measure RSRP and RSRQ of detected E-UTRA cells in the neighbour frequency list at the minimum measurement rate specified in this clause. The parameter NEUTRA\_carrier is the total number of configured E-UTRA carriers indicated to meet non high speed requirements in the neighbour frequency list. The parameter NEUTRA\_carrier\_HST is the total number of configured E-UTRA carriers indicated to meet high speed requirements in FR1 in the neighbour frequency list. The UE shall filter RSRP and RSRQ measurements of each measured E-UTRA 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 half the minimum specified measurement period. UE is not expected to be configured with E-UTRA HST carriers in FR2.

An inter-RAT E-UTRA cell is considered to be detectable provided the following conditions are fulfilled:

- the same conditions as for inter-frequency RSRP measurements specified in TS 36.133 [15, Annex B.1.2] are fulfilled for a corresponding Band, and

- the same conditions as for inter-frequency RSRQ measurements specified in TS 36.133 [15, Annex B.1.2] are fulfilled for a corresponding Band.

- SCH conditions specified in TS 36.133 [15, Annex B.1.2] are fulfilled for a corresponding Band

The UE shall be able to evaluate whether a newly detectable inter-RAT E-UTRAN cell meets the reselection criteria defined in TS38.304 within NEUTRA\_carrier\_HST \* Tdetect,EUTRAN\_HST + NEUTRA\_carrier \* Tdetect,EUTRAN when Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ when Treselection = 0 provided that the reselection criteria is met by a margin of at least 6dB for RSRP reselections based on absolute priorities or 4dB for RSRQ reselections based on absolute priorities.

Cells which have been detected shall be measured at least every NEUTRA\_carrier\_HST \* Tmeasure,EUTRAN\_HST + NEUTRA\_carrier \* Tmeasure,EUTRAN when Srxlev ≤ SnonIntraSearchP or Squal ≤ SnonIntraSearchQ.

When higher priority cells are found by the higher priority search, they shall be measured at least every Tmeasure,EUTRAN. If, after detecting a cell in a higher priority search, it is determined that reselection has not occurred then the UE is not required to continuously measure the detected cell to evaluate the ongoing possibility of reselection. However, the minimum measurement filtering requirements specified later in this clause shall still be met by the UE before it makes any determination that it may stop measuring the cell.

If the UE detects on an inter-RAT E-UTRAN carrier a cell whose physical identity is indicated as not allowed for that carrier in the measurement control system information of the serving cell, the UE is not required to perform measurements on that cell.

The UE shall not consider an inter-RAT E-UTRA cell in cell reselection, if it is indicated as not allowed in the measurement control system information of the serving cell.

For a 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 an already identified inter-RAT E-UTRA cell has met reselection criterion defined in TS 38.304 [1] within NEUTRA\_carrier\_HST \* Tevaluate,EUTRAN\_HST + NEUTRA\_carrier \* T evaluate,EUTRAN when Treselection = 0as speficied in table 4.2.2.5-1 and 4.2.2.5-2 provided that the reselection criteria is met by a margin of at least 6dB for RSRP reselections based on absolute priorities or 4dB for RSRQ reselections based on absolute priorities.

If Treselection timer has a non zero value and the inter-RAT E-UTRA cell is satisfied with the reselection criteria which are defined in TS 38.304 [1], the UE shall evaluate this E-UTRA cell for the Treselection time. If this cell remains satisfied with the reselection criteria within this duration, then the UE shall reselect that cell.

Table 4.2.2.5-1: Tdetect,EUTRAN, Tmeasure,EUTRAN, and Tevaluate,EUTRAN

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| --- | --- | --- | --- |
| 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 (36) | 1.28 (4) | 5.12 (16) |
| 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) |

**Table 4.2.2.5-2: Tdetect,EUTRAN\_HST, Tmeasure,EUTRAN\_HST, and Tevaluate,EUTRAN\_HST for UE configured with RRM enhancements for high speed (Frequency range FR1)**

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| --- | --- | --- | --- |
| **DRX cycle length [s]** | **Tdetect,EURAN\_HST [s] (number of DRX cycles)** | **Tmeasure,EUTRAN\_HST [s] (number of DRX cycles)** | **Tevaluate,EUTRAN\_HST****[s] (number of DRX cycles)** |
|
| 0.32 | 4.16 (13) | 0.64 (2) | 0.96 (3) |
| 0.64 | 7.68 (12) | 1.28 (2) | 1.92 (3) |
| 1.28 | 8.96 (7) | 1.28 (1) | 3.84 (3) |
| 2.56 | 58.88 (23) | 2.56 (1) | 7.68 (3) |

## << End of change 1>>