**3GPP TSG-RAN WG4 Meeting #95-e *R4-200xxxx***

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

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.133** | **CR** | **0857** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  |
| *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 | **X** | Core Network |  |

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| ***Title:***  | NR E-CID reporting criteria requirements |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_POS-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)* |
|  |  |
| ***Reason for change:*** | Endorsed in RAN4#94-e-Bis as R4-2005417==================================Reporting criteria for NR E-CID are missing |
|  |  |
| ***Summary of change:*** | Adding reporting criteria for NR E-CID |
|  |  |
| ***Consequences if not approved:*** | Reporting criteria for NR E-CID are missing |
|  |  |
| ***Clauses affected:*** | 9.1.4 |
|  |  |
|  | **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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

### 9.1.4 Capabilities for Support of Event Triggering and Reporting Criteria

#### 9.1.4.1 Introduction

This clause contains requirements on UE capabilities for support of event triggering and reporting criteria. As long as the measurement configuration does not exceed the requirements stated in clause 9.1.4.2, the UE shall meet all other performance requirements defined in clause 9 and clause 10.

The UE can be requested to make measurements under different measurement identities defined in TS 38.331 [2]. Each measurement identity corresponds to either event based reporting, periodic reporting, or no reporting. In case of event based reporting, each measurement identity is associated with an event triggering criterion. In case of periodic reporting, a measurement identity is associated with one periodic reporting criterion. In case of no reporting, a measurement identity is associated with one no reporting criterion.

The purpose of this clause is to set some limits on the number of different event triggering, periodic, and no reporting criteria the UE may be requested to track in parallel.

#### 9.1.4.2 Requirements

In this clause a reporting criterion corresponds to either one event (in the case of event based reporting), or one periodic reporting criterion (in case of periodic reporting), or one no reporting criterion (in case of no reporting). For event based reporting, each instance of event, with the same or different event identities, is counted as separate reporting criterion in Table 9.1.4.2-1.

The UE shall be able to support in parallel per category up to Ecat reporting criteria configured by PSCell and E-UTRA PCell according to Table 9.1.4.2-1. For the measurement categories belonging to intra-frequency, inter-frequency, and inter-RAT measurements (i.e. without counting other categories that the UE shall always support in parallel), the UE need not support more than the total number of reporting criteria as follows:

- For UE configured with EN-DC: $E\_{cat,EN-DC,NR}+E\_{cat,EN-DC,E-UTRA}$, where

$E\_{cat,EN-DC,NR}=10+9×n$ is the total number of NR reporting criteria applicable for UE configured with EN-DC according to Table 9.1.4.2-1, and  is the number of configured NR serving frequencies, including PSCell and SCells carrier frequencies,

$E\_{cat,EN-DC,E-UTRA}$ is the total number of E-UTRA reporting criteria configured by E-UTRA PCell except PSCell and SCells carrier frequencies, as specified in TS 36.133 [15] for UE configured with EN-DC.

- For UE configured with NE-DC:$ E\_{cat,NE-DC,NR}+E\_{cat,NE-DC,E-UTRA}$, where

$E\_{cat,NE-DC,NR}=10+9×n$ is the total number of NR reporting criteria according to Table 9.1.4.2-1, and  is the number of configured NR serving frequencies, including PCell and SCells carrier frequencies,

$E\_{cat,NE-DC,E-UTRA}=E\_{cat,NE-DC,E-UTRA,inter-RAT}+E\_{cat,NE-DC,E-UTRA,intra-RAT}$, where

$E\_{cat,NE-DC,E-UTRA,inter-RAT}$ is the total number of inter-RAT E-UTRA reporting criteria configured by PCell except E-UTRA PSCell and E-UTRA SCells carrier frequencies, according to Table 9.1.4.2-1,

$E\_{cat,NE-DC,E-UTRA,intra-RAT}$ is the total number of E-UTRA reporting criteria including E-UTRA PSCell and E-UTRA SCells carrier frequencies as specified in TS 36.133 [15] for UE configured with NE-DC.

- For UE configured with SA operation mode: , where

 is the total number of NR reporting criteria according to Table 9.1.4.2-1, and  is the number of configured NR serving frequencies, including PCell, and SCells carrier frequencies,

 is the total number of inter-RAT E-UTRA reporting criteria according to Table 9.1.4.2-1.

- For UE configured with NR-DC: $E\_{cat,NR-DC,NR}+E\_{cat,NR-DC,E-UTRA}$, where

$E\_{cat,NR-DC,NR}=10+9×n$ is the total number of NR reporting criteria according to Table 9.1.4.2-1, and  is the number of configured NR serving frequencies, including PCell, PSCell and SCells carrier frequencies,

$E\_{cat,NR-DC,E-UTRA}$ is the total number of inter-RAT E-UTRA reporting criteria according to Table 9.1.4.2-1.

Table 9.1.4.2-1: Requirements for reporting criteria per measurement category

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| --- | --- | --- |
| Measurement category | Ecat | Note |
| Intra-frequency Note 1,2,3,4,5 | 9 | Events for any one or a combination of intra-frequency SS-RSRP, SS-RSRQ, and SS-SINR for NG-RAN intra-frequency cells |
| Inter-frequency Note 2,3,4,5 | 10 | Events for any one or a combination of inter-frequency SS-RSRP, SS-RSRQ, and SS-SINR for NG-RAN inter-frequency cells |
| Inter-RAT (E-UTRA FDD, E-UTRA TDD) Note 2,4,5 | 10 | Only applicable for UE with this (inter-RAT) capability. These reporting criteria apply for any E-UTRA carrier frequencies other than the carrier frequency of the E-UTRA PSCell or E-UTRA SCell. |
| Inter-RAT (E-UTRA FDD, E-UTRA TDD) RSTD Note 2,4,5 | 1 | Inter-RAT RSTD measurement reporting for UE supporting OTDOA; 1 report capable of minimum 16 inter-RAT cell measurements.Only applicable for UE with this (inter-RAT RSTD via LPP [22]) capability. These reporting criteria apply for any E-UTRA carrier frequencies other than the carrier frequency of the E-UTRA PSCell or E-UTRA SCell. |
| Inter-RAT (E-UTRA FDD, E-UTRA TDD) RSRP and RSRQ measurements for E-CID Note 2,4,5 | 1 | Inter-RAT RSRP and RSRQ measurements for E-CID reported to E-SMLC via LPP [22]. One report capable of at least in total 10 inter-RAT RSRP and RSRQ measurements. Applicable to UE capable of reporting inter-RAT RSRP and RSRQ to E-SMLC via LPP. These reporting criteria apply for any E-UTRA carrier frequencies other than the carrier frequency of the E-UTRA PSCell or E-UTRA SCell. |
| Intra-frequency SSB-based measurements for NR E-CID Note 1,2,3,4,5 | 1 | Intra-frequency SS-RSRP and SS-RSRQ measurements for NR E-CID reported to LMF via LPP [22]. One report capable of at least in total 9 intra-frequency SS-RSRP and SS-RSRQ measurements. Applicable to UE capable of reporting at least one of SS-RSRP and SS-RSRQ to LMF via LPP. |
| Inter-frequency SSB-based measurements for NR E-CID Note 2,3,4,5 | 1 | Inter-frequency SS-RSRP and SS-RSRQ measurements for NR E-CID reported to LMF via LPP [22]. One report capable of at least in total 10 inter-frequency SS-RSRP and SS-RSRQ measurements. Applicable to UE capable of reporting at least one of SS-RSRP and SS-RSRQ to LMF via LPP. |
| NOTE 1: When the UE is configured with PSCell and SCell carrier frequencies, Ecat for Intra-frequency is applied per corresponding NR serving frequency.NOTE 2: Applicable for UE configured with SA NR operation mode.NOTE 3: Applicable for UE configured with EN-DC operation mode.NOTE 4: Applicable for UE configured with NE-DC operation mode.NOTE 5: Applicable for UE configured with NR-DC operation mode. |