**3GPP TSG-RAN WG4 Meeting #95 *R4-2007940***

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

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **0858** | **rev** | **-** | **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 measurement 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 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-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 R4-2004677  ==================================  NOTE: This CR was agreed in RAN4#94, but not implemented due to the missing top level section in the specification (9.8 NR measurements for positioning):  **R4-2002288 NR E-CID measurement requirements**  *Type: CR For: Agreement  38.133 v16.2.0 CR-0569 Cat: B (Rel-16)  Source: Ericsson*  **Decision: Agreed.**  NR E-CID measurement requirements are missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Top level section is added. The rest is as in the CR agreed in RAN4#94:  Change #1: NR E-CID measurement requirements are introduced  Change #2: reference to 37.355 is added | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | NR E-CID measurement requirements are missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 9.8, 9.8.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

**=== start of change 1 ===**

## 9.8 NR measurements for positioning

### 9.8.1 Introduction

### 9.8.2 DL RSTD measurements

### 9.8.3 DL PRS-RSRP measurements

### 9.8.4 UE Rx-Tx time difference measurements

### 9.8.5 NR E-CID measurements

#### 9.8.5.1 Introduction

The requirements in section 9.8.5 shall apply provided the UE has received *nr-ECID-RequestLocationInformation* message from LMF via LPP [31] requesting the UE to report one or more of the following measurements for NR E-CID positioning [22]: SS-RSRP, SS-RSRQ, CSI-RSRP, and CSI-RSRQ.

#### 9.8.5.2 Measurement Requirements

#### 9.8.5.2.1 Intra-frequency Measurement Requirements

The intra-frequency NR E-CID measurements shall meet the requirements in section 9.2, except the measurement reporting requirements. The NR E-CID measurement reporting requirements are defined in section 9.8.5.2.3.

The reported intra-frequency NR E-CID measurements shall also meet:

- for FR1 SS-RSRP, the accuracy requirements in sections 10.1.2,

- for FR1 SS-RSRQ, the accuracy requirements in sections 10.1.7,

- for FR1 CSI-RSRP, the accuracy requirements in section 10.1,

- for FR1 CSI-RSRQ, the accuracy requirements in section 10.1,

- for FR2 SS-RSRP, the accuracy requirements in sections 10.1.3,

- for FR2 SS-RSRQ, the accuracy requirements in sections 10.1.8,

- for FR2 CSI-RSRP, the accuracy requirements in section 10.1,

- for FR2 CSI-RSRQ, the accuracy requirements in section 10.1.

#### 9.8.5.2.2 Inter-frequency Measurement Requirements

The inter-frequency NR E-CID measurements shall meet the requirements in section 9.3, except the measurement reporting requirements. The NR E-CID measurement reporting requirements are defined in section 9.8.5.2.3.

The reported inter-frequency NR E-CID measurements shall also meet:

- for FR1 SS-RSRP, the accuracy requirements in sections 10.1.4,

- for FR1 SS-RSRQ, the accuracy requirements in sections 10.1.9,

- for FR1 CSI-RSRP, the accuracy requirements 10.1,

- for FR1 CSI-RSRQ, the accuracy requirements 10.1,

- for FR2 SS-RSRP, the accuracy requirements in sections 10.1.5,

- for FR2 SS-RSRQ, the accuracy requirements in sections 10.1.10,

- for FR2 CSI-RSRP, the accuracy requirements 10.1,

- for FR2 CSI-RSRQ, the accuracy requirements 10.1.

#### 9.8.5.2.3 Measurement Reporting Delay

The measurement reporting delay is defined as the time between the moment when the periodic measurement report is triggered and the moment when the UE starts to transmit the measurement report over the air interface. This requirement assumes that that the measurement report is not delayed by other LPP signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is: 2 x TTIDCCH where TTIDCCH is the duration of subframe or slot or subslot when the measurement report is transmitted on the PUSCH with subframe or slot or subslot duration. This measurement reporting delay excludes any delay caused by no UL resources for UE to send the measurement report.

The reported NR E-CID measurement values contained in periodically triggered measurement reports shall be based on the measurement report mapping requirements specified in sections 10.1.6 and 10.1.11 for SS-RSRP and SS-RSRQ, respectively, and section 10.1 for CSI-RSRP and CSI-RSRQ, respectively.

The UE shall not send any measurement reports as long as no corresponding reporting criteria specified in section 9.1.4 are fulfilled.

**=== end of change 1 ===**

**=== start of change 2 ===**

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in idle mode".

[2] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[3] 3GPP TS 38.213: "NR; Physical layer procedures for control".

[4] 3GPP TS 38.215: "NR; Physical layer measurements".

[5] 3GPP TS 38.533: "NR; User Equipment (UE) conformance specification; Radio Resource Management (RRM)".

[6] 3GPP TS 38.211: "NR; Physical channels and modulation”.

[7] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[8] 3GPP TS 38.212 "NR; Multiplexing and channel coding".

[9] 3GPP TS 38.202: "NR; Physical layer services provided by the physical layer".

[10] 3GPP TS 38.300: "NR; Overall description; Stage-2".

[11] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[12] 3GPP TS 38.423: "NG-RAN; Xn Application Protocol (XnAP)".

[13] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception".

[14] 3GPP TS 38.306: "NR; User Equipment (UE) radio access capabilities".

[15] 3GPP TS 36.133: "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for support of radio resource management".

[16] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) protocol specification".

[17] 3GPP TS 37.340: "Evolved Universal Terrestrial Radio Access (E-UTRA) and NR; Multi-connectivity", Stage 2.

[18] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

[19] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".

[20] 3GPP TS 38.101-3: "NR; User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios".

[21] 3GPP TS 38.101-4: "NR; User Equipment (UE) radio transmission and reception; Part 4: Performance requirements".

[22] 3GPP TS 38.305: "NG Radio Access Network (NG-RAN); Stage 2 functional specification of User Equipment (UE) positioning in NG-RAN".

[23] 3GPP TS 36.211: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation".

[24] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA); Overall description".

[25] 3GPP TS 36.101: "Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".

[26] 3GPP TS 38.214: "NR; Physical layer procedures for data".

[27] 3GPP TS 36.355: "Evolved Universal Terrestrial Radio Access (E-UTRA); LTE Positioning Protocol (LPP)".

[28] Void.

[29] 3GPP TS 25.133: "Requirements for Support of Radio Resource Management (FDD)".

[30] 3GPP TS 25.302: "Services provided by the Physical Layer".

[31] 3GPP TS 37.355: “LTE Positioning Protocol (LPP)”.

**=== end of change 2 ===**