**3GPP TSG RAN meeting #97e RP-222603**

**Electronic Meeting, September 12-16, 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.473** | **CR** | **1004** | **rev** | **4** | **Current version:** | **17.1.0** |  |
|  |
| *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 |  | Radio Access Network | **X** | Core Network |  |

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|  |
| ***Title:***  | CR to 38.473 on E-CID measurement periodicity |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | Huawei, China Unicom, CMCC, Ericsson, Nokia, Nokia Shanghai Bell, CATT |
|  |  |
| ***Work item code:*** | NR\_pos-Core |  | ***Date:*** | 2022-09-12 |
|  |  |  |  |  |
| ***Category:*** | A |  | ***Release:*** | Rel-17 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | The *Measurement Periodicity* IE is included in Measurement Request message and E-CID Measurement Initiation Request message. To support the LMF requesting the measurement results from the NG-RAN, the codedpoints were extended to align with the periodicity of SRS transmissions. Currently, this extension was not applicable in E-CID Measurement Initiation Request message for the reporting of E-CID measurements.However, E-CID positioning method has now been enhanced to support the reporting of NR UL Angle of Arrival (AoA). Then the measurement periodicity extended codepoints should also be applicable to E-Cell ID positioning.This is the F1AP mirror CR to R3-225128. |
|  |  |
| ***Summary of change:*** | Add the *Measurement Periodicity NR-AoA* IE, to contain all codepoints applicable to NR UL Angle of Arrival. The new IE is conditional on *E-CID Report Characteristics* IE set to “Periodic” and *E-CID Measurement Quantities Item* IE set to “NR UL AoA”.Impact analysis:Impact assessment towards the previous version of the specification (same release):This CR has a limited impact on the protocol.This CR has functionality impact. This CR can be considered isolated.This CR is implemented with asn.1 in a BC way. |
|  |  |
| ***Consequences if not approved:*** | The reporting of AoA measurement results can not be aligned with the SRS transmissions. |
|  |  |
| ***Clauses affected:*** | 9.2.12.20, 9.4.4,9.4.5, 9.4.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS38.455 CR0079 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev#1: revision output of CB # 18\_R17Positioning\_CorrRev#2: add impact analysis in coverpageRev#3: correct the detected asn.1 error and the WI code, as company CR to replace R3-225267 of RP-222186Rev#4: remove unnecessary change marks |

<<<<<<<<<<<<<<<<<<<< Changes Begin >>>>>>>>>>>>>>>>>>>>

#### 9.2.12.20 E-CID MEASUREMENT INITIATION REQUEST

This message is sent by gNB-CU to initiate E-CID measurements.

Direction: gNB-CU → gNB-DU.

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| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| gNB-CU UE F1AP ID | M |  | 9.3.1.4 |  | YES | reject |
| gNB-DU UE F1AP ID | M |  | 9.3.1.5 |  | YES | reject |
| LMF UE Measurement ID | M |  | INTEGER (1.. 256, …) |  | YES | reject |
| RAN UE Measurement ID | M |  | INTEGER (1.. 256, …) |  | YES | reject |
| E-CID Report Characteristics | M |  | ENUMERATED (OnDemand, Periodic, …) |  | YES | reject |
| E-CID Measurement Periodicity | C-ifReportCharacteristicsPeriodic |  | ENUMERATED (120ms, 240ms, 480ms, 640ms, 1024ms, 2048ms, 5120ms, 10240ms, 1min, 6min, 12min, 30min, …, 20480ms, 40960ms, extended) | The codepoint “extended” is not applicable.This IE is not applicable to NR Angle of Arrival. | YES | reject |
| **E-CID Measurement Quantities** |  | *1 .. <maxnoofMeasE-CID>* |  |  | EACH | reject |
| >E-CID Measurement Quantities Item | M |  | ENUMERATED (Default, NR Angle of Arrival, …, NR Timing Advance) | If “Default” is the only requested measurement quantity, it indicates that the *Measured Results List* IE need not be included in response or reporting messages. | - |  |
| Measurement Periodicity NR-AoA | C- ifReportCharacteristicsPeriodicAndMeasQuantityItemAoA |  | ENUMERATED (160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms,40960ms, 61440ms, 81920ms, 368640ms, 737280ms, 1843200ms, …) |  | YES | reject |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofMeasE-CID | Maximum no. of E-CID measured quantities that can be configured and reported with one message. Value is 64. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifReportCharacteristicsPeriodic | This IE shall be present if the *E-CID Report Characteristics* IE is set to the value "Periodic". |
| ifReportCharacteristicsPeriodicAndMeasQuantityItemAoA | This IE shall be present if the *E-CID Report Characteristics* IE is set to the value "Periodic" and the *E-CID Measurement Quantities* *Item* IE is set to the value "NR Angle of Arrival". |

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>>>

### 9.4.4 PDU Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- PDU definitions for F1AP.

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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 MDTPLMNModificationList,

 ActivationRequestType,

 PosMeasGapPreConfigList,

 PosMeasurementPeriodicityNR-AoA

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>

 id-ManagementBasedMDTPLMNModificationList,

 id-ActivationRequestType,

 id-PosMeasGapPreConfigList,

 id-PosMeasurementPeriodicityNR-AoA,

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- E-CID MEASUREMENT INITIATION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

E-CIDMeasurementInitiationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container {{E-CIDMeasurementInitiationRequest-IEs}},

 ...

}

E-CIDMeasurementInitiationRequest-IEs F1AP-PROTOCOL-IES ::= {

 { ID id-gNB-CU-UE-F1AP-ID CRITICALITY reject TYPE GNB-CU-UE-F1AP-ID PRESENCE mandatory }|

 { ID id-gNB-DU-UE-F1AP-ID CRITICALITY reject TYPE GNB-DU-UE-F1AP-ID PRESENCE mandatory }|

 { ID id-LMF-UE-MeasurementID CRITICALITY reject TYPE LMF-UE-MeasurementID PRESENCE mandatory }|

 { ID id-RAN-UE-MeasurementID CRITICALITY reject TYPE RAN-UE-MeasurementID PRESENCE mandatory }|

 { ID id-E-CID-ReportCharacteristics CRITICALITY reject TYPE E-CID-ReportCharacteristics PRESENCE mandatory }|

 { ID id-E-CID-MeasurementPeriodicity CRITICALITY reject TYPE MeasurementPeriodicity PRESENCE conditional }|

-- The above IE shall be present if the E-CID-ReportCharacteristics IE is set to “periodic” –-

 { ID id-E-CID-MeasurementQuantities CRITICALITY reject TYPE E-CID-MeasurementQuantities PRESENCE mandatory}|

 { ID id-PosMeasurementPeriodicityNR-AoA CRITICALITY reject TYPE PosMeasurementPeriodicityNR-AoA PRESENCE conditional},

-- The IE shall be present if the E-CID-ReportCharacteristics IE is set to “periodic” and the E-CID-MeasurementQuantities-Item IE in the E-CID-MeasurementQuantities IE is set to the value "angleOfArrivalNR"--

 ...

}

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### 9.4.5 Information Element Definitions

-- ASN1START

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-- Information Element Definitions

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

F1AP-IEs {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) f1ap (3) version1 (1) f1ap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>

PRSTransmissionTRPList ::= SEQUENCE (SIZE(1.. maxnoofTRPs)) OF PRSTransmissionTRPItem

PRSTransmissionTRPItem ::= SEQUENCE {

 tRP-ID TRPID,

 pRSConfiguration PRSConfiguration,

 iE-Extensions ProtocolExtensionContainer { { PRSTransmissionTRPItem-ExtIEs} } OPTIONAL,

 ...

}

PRSTransmissionTRPItem-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

 ...

}

PosMeasurementPeriodicityNR-AoA ::= ENUMERATED {

 ms160,

 ms320,

 ms640,

 ms1280,

 ms2560,

 ms5120,

 ms10240,

 ms20480,

 ms40960,

 ms61440,

 ms81920,

 ms368640,

 ms737280,

 ms1843200,

 ...

}

<<<<<<<<<<<<<<<<<<<< Unchanged Text Omitted >>>>>>>>>>>>>>>>>>

id-SIB15-message ProtocolIE-ID ::= 648

id-ActivationRequestType ProtocolIE-ID ::= 649

id-PosMeasGapPreConfigList ProtocolIE-ID ::= 650

id-PosMeasurementPeriodicityNR-AoA ProtocolIE-ID ::= xxx

 <<<<<<<<<<<<<<<<<<<< Changes End >>>>>>>>>>>>>>>>>>>>