**3GPP TSG-RAN WG3 #109 *R3-20xxxx***

**Online, 17th - 28th August 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **36.455** | **CR** | **0111** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  |
| *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 | **X** |

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|  |
| ***Title:***  | Introducing NR beam level measurement in inter-RAT measurement in E-CID measurement over LPPa. |
|  |  |
| ***Source to WG:*** | NTT DOCOMO, Ericsson |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | TEI16 |  | ***Date:*** | 2020-08-05 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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:*** | This CR adds per SS beam index measurement in the E-CID measurement NR results.  |
|  |  |
| ***Summary of change:*** | Adding per SS beam index measurement in the inter-RAT measurement results for NR**Impact Analysis:** Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because this is additional information that may be used by receiving node This CR has no impact from functional point of view. The impact can be considered isolated. |
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| ***Consequences if not approved:*** | E-CID measurement based positioning accuracy is lower compared with the SS beam index measurement being included in the E-CID measurement NR results.  |
|  |  |
| ***Clauses affected:*** | 9.2.13, 9.3.5, 9.3.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

**START OF CHANGES**

### 9.2.13 Inter-RAT Measurement Result

The purpose of the Inter-RAT Measurement Result information element is to provide the Inter-RAT measurement results.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description | Criticality | Assigned criticality |
| **Inter-RAT Measured Results** |  | *1.. <maxnoMeas>* |  |  | - |  |
| >CHOICE *Inter-RAT Measured Results Value* | M |  |  |  | - |  |
| >>**Result GERAN** | M | *1..<maxGERANMeas>* |  |  | - |  |
| >>>ARFCN of BCCH | M |  | INTEGER (0..1023, ...) |  | - |  |
| >>>Physical CellId GERAN | M |  | INTEGER (0..63, ...) |  | - |  |
| >>>RSSI | M |  | INTEGER(0..63, ...) |  | - |  |
| >>**Result UTRAN** |  | *1..<maxUTRANMeas>* |  |  | - |  |
| >>>UARFCN | M |  | INTEGER (0..16383, ...) |  | - |  |
| >>>CHOICE Physical CellId UTRA | M |  |  |  | - |  |
| >>>>Physical CellId UTRA FDD | M |  | INTEGER (0..511, ...) |  | - |  |
| >>>>Physical CellId UTRA TDD | M |  | INTEGER (0..127, ...) |  | - |  |
| >>>UTRA RSCP | O |  | INTEGER(-5..91, ...) |  | - |  |
| >>>UTRA EcNo | O |  | INTEGER(0..49, ...) | This IE applies to FDD only. | - |  |
| **>>Result NR** | M | *1..<maxNRMeas>* |  |  | - |  |
| >>>NR ARFCN | M |  | INTEGER (0.. 3279165) |  | - |  |
| >>>NR PCI | M |  | INTEGER (0..1007) |  | - |  |
| >>>NR SS-RSRP | O |  | INTEGER (0..127) | Cell level measurement result of NR SS-RSRP | - |  |
| >>>NR SS-RSRQ | O |  | INTEGER (0..127) | Cell level measurement result of NR SS-RSRQ | - |  |
| >>>ResultsPerSSB Index List |  | *0..1* |  |  | YES | ignore |
| >>>>ResultsPerSSB Index Item |  | *1..<maxResultsPerSSBIndex>* |  |  |  |  |
| >>>>>SSB Index | M |  | INTEGER (0..63) |  | - |  |
| >>>>>NR SS-RSRP beam value | O |  | INTEGER (0..127) | Beam level measurement result of NR SS-RSRP | - |  |
| >>>>>NR SS-RSRQ beam value | O |  | INTEGER (0..127) | Beam level measurement result of NR SS-RSRQ | - |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoMeas | Maximum no. of measured quantities that can be configured and reported with one message. Value is 63. |
| maxGERANMeas | Maximum no. of GERAN cells that can be reported with one message. Value is 8. |
| maxUTRANMeas | Maximum no. of UTRAN cells that can be reported with one message. Value is 8. |
| maxNRMeas | Maximum no. of NR cells that can be reported with one message. Value is 32. |
| maxResultsPerSSBIndex | Maximum no. of NR SSB indices that can be reported with one message. Value is 64. |

NEXT CHANGE

### 9.3.5 Information Element definitions

-- ASN1START

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-- Information Element Definitions

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

LPPA-IEs {

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

eps-Access (21) modules (3) lppa (6) version1 (1) lppa-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 id-MeasurementQuantities-Item,

 id-ResultsPerSSB-Index-List,

 maxCellineNB,

 maxCellReport,

 maxNrOfErrors,

 maxNoMeas,

 maxnoOTDOAtypes,

 maxServCell,

 id-InterRATMeasurementQuantities-Item,

 id-WLANMeasurementQuantities-Item,

 maxGERANMeas,

 maxUTRANMeas,

 maxNRmeas,

 maxResultsPerSSBIndex,

 maxCellineNB-ext,

 maxWLANchannels,

 maxMBSFN-Allocations,

 maxnoFreqHoppingBandsMinusOne,

 maxNrOfPosSImessage,

 maxnoAssistInfoFailureListItems,

 maxNrOfSegments,

 maxNrOfPosSIBs

FROM LPPA-Constants

NEXT CHANGE

UNCHANGED TEXT OMMITED

ResultNR ::= SEQUENCE (SIZE (1.. maxNRmeas)) OF ResultNR-Item

ResultNR-Item ::= SEQUENCE {

 nRARFCN NRARFCN,

 nRPCI NRPCI,

 sS-NRRSRP SS-NRRSRP OPTIONAL,

 sS-NRRSRQ SS-NRRSRQ OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultNR-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultNR-Item-ExtIEs LPPA-PROTOCOL-EXTENSION ::= {

 { ID id-ResultsPerSSB-Index-List CRITICALITY ignore EXTENSION ResultsPerSSB-Index-List PRESENCE optional},

 ...

}

RSSI ::= INTEGER (0..63, ...)

-- S

SFNInitialisationTime ::= BIT STRING (SIZE (64))

SRSConfigurationForAllCells ::= SEQUENCE (SIZE (1.. maxServCell)) OF SRSConfigurationForOneCell

SRSConfigurationForOneCell ::= SEQUENCE {

 pci PCI,

 ul-earfcn EARFCN,

 ul-bandwidth ENUMERATED {n6, n15, n25, n50, n75, n100},

 ul-cyclicPrefixLength CPLength,

 srs-BandwidthConfig ENUMERATED {bw0, bw1, bw2, bw3, bw4, bw5, bw6, bw7},

 srs-Bandwidth ENUMERATED {bw0, bw1, bw2, bw3},

 srs-AntennaPort ENUMERATED {an1, an2, an4, ...},

 srs-HoppingBandwidth ENUMERATED {hbw0, hbw1, hbw2, hbw3},

 srs-cyclicShift ENUMERATED {cs0, cs1, cs2, cs3, cs4, cs5, cs6, cs7},

 srs-ConfigIndex INTEGER (0..1023),

 maxUpPts ENUMERATED {true} OPTIONAL, -- Cond ifTDD

 transmissionComb INTEGER (0..1),

 freqDomainPosition INTEGER (0..23),

 groupHoppingEnabled BOOLEAN,

 deltaSS INTEGER (0..29) OPTIONAL,

 sfnInitialisationTime SFNInitialisationTime,

 ...

}

Subframeallocation ::= CHOICE {

 oneFrame BIT STRING (SIZE(6)),

 fourFrames BIT STRING (SIZE(24))

}

SS-NRRSRP ::= INTEGER (0..127)

SS-NRRSRQ ::= INTEGER (0..127)

SSB-Index ::= INTEGER (0..63)

ResultsPerSSB-Index-List ::= SEQUENCE (SIZE(1..maxResultPerSSBIndex)) OF ResultsPerSSB-Index-Item

ResultsPerSSB-Index-Item ::=SEQUENCE {

 sSB-Index SSB-Index,

 sS-NRRSRPBeamValue SS-NRRSRP, OPTIONAL,

 sS-NRRSRQBeamValue SS-NRRSRQ, OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { { ResultsPerSSB-Index-Item-ExtIEs} } OPTIONAL,

 ...

}

ResultsPerSSB-Index-Item-ExtIEs LPPA-PROTOCOL-EXTENSION ::= {

 ...

}

NEXT CHANGE

### 9.3.7 Constant definitions

UNCHANGED TEXT OMMITED

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

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-- Lists

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

maxNrOfErrors INTEGER ::= 256

maxCellineNB INTEGER ::= 256

maxNoMeas INTEGER ::= 63

maxCellReport INTEGER ::= 9

maxnoOTDOAtypes INTEGER ::= 63

maxServCell INTEGER ::= 5

maxGERANMeas INTEGER ::= 8

maxUTRANMeas INTEGER ::= 8

maxCellineNB-ext INTEGER ::= 3840

maxMBSFN-Allocations INTEGER ::= 8

maxWLANchannels INTEGER ::= 16

maxnoFreqHoppingBandsMinusOne INTEGER ::= 7

maxNrOfPosSImessage INTEGER ::= 32

maxnoAssistInfoFailureListItems INTEGER ::= 32

maxNrOfSegments INTEGER ::= 64

maxNrOfPosSIBs INTEGER ::= 32

maxNRmeas INTEGER ::= 32

maxResultsPerSSBIndex INTEGER ::= 64

UNCHANGED TEXT OMMITED

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

--

-- IEs

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

id-Cause ProtocolIE-ID ::= 0

id-CriticalityDiagnostics ProtocolIE-ID ::= 1

id-E-SMLC-UE-Measurement-ID ProtocolIE-ID ::= 2

id-ReportCharacteristics ProtocolIE-ID ::= 3

id-MeasurementPeriodicity ProtocolIE-ID ::= 4

id-MeasurementQuantities ProtocolIE-ID ::= 5

id-eNB-UE-Measurement-ID ProtocolIE-ID ::= 6

id-E-CID-MeasurementResult ProtocolIE-ID ::= 7

id-OTDOACells ProtocolIE-ID ::= 8

id-OTDOA-Information-Type-Group ProtocolIE-ID ::= 9

id-OTDOA-Information-Type-Item ProtocolIE-ID ::= 10

id-MeasurementQuantities-Item ProtocolIE-ID ::= 11

id-RequestedSRSTransmissionCharacteristics ProtocolIE-ID ::= 12

id-ULConfiguration ProtocolIE-ID ::= 13

id-Cell-Portion-ID ProtocolIE-ID ::= 14

id-InterRATMeasurementQuantities ProtocolIE-ID ::= 15

id-InterRATMeasurementQuantities-Item ProtocolIE-ID ::= 16

id-InterRATMeasurementResult ProtocolIE-ID ::= 17

id-AddOTDOACells ProtocolIE-ID ::= 18

id-WLANMeasurementQuantities ProtocolIE-ID ::= 19

id-WLANMeasurementQuantities-Item ProtocolIE-ID ::= 20

id-WLANMeasurementResult ProtocolIE-ID ::= 21

id-Assistance-Information ProtocolIE-ID ::= 22

id-Broadcast ProtocolIE-ID ::= 23

id-AssistanceInformationFailureList ProtocolIE-ID ::= 24

id-ResultsPerSSB-Index-List ProtocolIE-ID ::= 25

END

-- ASN1STOP

END OF CHANGE