**3GPP TSG-RAN RAN Meeting #98-eRP-223477**

**E-meeting 12th - 16th Dec. 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.413** | **CR** | **0922** | **rev** | **6** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *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:*** | NGAP Corrections for Excess Packet Delay | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | CATT, Ericsson, AT&T, Deutsche Telekom, Huawei, Nokia, Nokia Shanghai Bell, ZTE | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_ENDC\_SON\_MDT\_enh-Core | | | | |  | ***Date:*** | | | 2022-12-1 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Need to align NGAP support of MDT configuration for Excess Packet Delay measurement with RAN2 specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The *M6 Delay Threshold* IE is renamed to *Excess Packet Delay Threshold Configuration* IE. This IE is changed from single enumerated value to a list of multiple values, and add *5QI* IE as reference information to reflect the relationship between threshold and service.  Impact analysis:  Impact assessment towards the previous version of the specification (same release):  This CR has an impact on the protocol.  This CR has functionality impact.  This CR impact can be considered isolated.  This CR is non backwards compatible. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Excess Packet Delay measurement is not correctly supported for signalling-based MDT. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.3.1.174, 9.3.1.x (new), 9.4.5, 9.4.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS38.423 CR0946 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1:   * Editorial modification * Add co-sign companies * Update the cover-page   Rev2:   * Editorial modification   Rev3:   * Add the co-sign companie * Add the revision history   Rev4:   * Update the cover-page   Rev5:   * Reserve the tracking removal mark of *M6 Excess Packet Delay Threshold Configuration* IE in 9.3.1.174 and some other editorial modifications. * ASN.1 corrections and editorial updates, e.g.,change *ExcessPacketDelayThresholdConfigurationItem* to *ExcessPacketDelayThresholdItem* for matching the tabular, change *ExcessPacketDelay-thresholdValue* to *ExcessPacketDelayThresholdValue* to match ASN.1 naming conventions.   Rev6:   * Editorial modification | | | | | | | | |

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9.3.1.174 M6 Configuration

This IE defines the parameters for M6 measurement collection.

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| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| M6 Report Interval | M |  | ENUMERATED (ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480, ms40960, min1, min6, min12, min30, …) |  | - |  |
| M6 Links to Log | M |  | ENUMERATED (uplink, downlink, both-uplink-and-downlink, …) |  | - |  |
| M6 Report Amount | O |  | ENUMERATED (1, 2, 4, 8, 16, 32, 64, infinity, …) | Number of reports | YES | ignore |
| Excess Packet Delay Threshold Configuration | O |  | 9.3.1.x |  | YES | ignore |



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9.3.1.x Excess Packet Delay Threshold Configuration

This IE defines the parameters for Excess Packet Delay Threshold configuration to support the calculation of the PDCP Excess Packet Delay in the UL per DRB as specified in TS 38.314 [48].

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| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| **Excess Packet Delay Threshold Item** |  | *1..<maxnoofThresholdsForExcessPacketDelay>* |  |  |
| >5QI | M |  | INTEGER (0..255, …) | Indicates the standardized or pre-configured 5QI as specified in TS 23.501 [9]. |
| >Excess Packet Delay Threshold Value | M |  | ENUMERATED (ms0.25, ms0.5, ms1, ms2, ms4, ms5, ms10, ms20, ms30, ms40, ms50, ms60, ms70, ms80, ms90, ms100, ms150, ms300,ms500, ...) |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofThresholdsForExcessPacketDelay | Maximum no. of thresholds for Excess Packet Delay configuration. Value is 255. |

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9.4.5 Information Element Definitions

-- ASN1START

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-- Information Element Definitions

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

NGAP-IEs {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

-------Text no need to change omitted-------

id-M4ReportAmount,

id-M5ReportAmount,

id-M6ReportAmount,

id-ExcessPacketDelayThresholdConfiguration,

id-M7ReportAmount,

-------Text no need to change omitted-------

maxnoofTargetS-NSSAIs,

maxnoofTimePeriods,

maxnoofTNLAssociations,

maxnoofUEAppLayerMeas,

maxnoofUEsforPaging,

maxnoofWLANName,

maxnoofXnExtTLAs,

maxnoofXnGTP-TLAs,

maxnoofXnTLAs,

maxnoofThresholdsForExcessPacketDelay

**-- TEXT OMITTED –**

M6Configuration ::= SEQUENCE {

m6report-Interval M6report-Interval,

m6-links-to-log Links-to-log,

iE-Extensions ProtocolExtensionContainer { { M6Configuration-ExtIEs} } OPTIONAL,

...

}

M6Configuration-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

{ ID id-M6ReportAmount CRITICALITY ignore EXTENSION M6ReportAmountMDT PRESENCE optional }|

{ ID id-ExcessPacketDelayThresholdConfiguration CRITICALITY ignore EXTENSION ExcessPacketDelayThresholdConfiguration PRESENCE optional },

...

}

ExcessPacketDelayThresholdConfiguration ::= SEQUENCE (SIZE(1..maxnoofThresholdsForExcessPacketDelay)) OF ExcessPacketDelayThresholdItem

ExcessPacketDelayThresholdItem ::= SEQUENCE {

fiveQi FiveQI,

excessPacketDelayThresholdValue ExcessPacketDelayThresholdValue,

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

...

}

ExcessPacketDelayThresholdItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

...

}

ExcessPacketDelayThresholdValue ::= ENUMERATED {

ms0dot25, ms0dot5, ms1, ms2, ms4, ms5, ms10, ms20, ms30, ms40, ms50, ms60, ms70, ms80, ms90, ms100, ms150, ms300, ms500,

...

}

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9.4.7 Constant Definitions

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-- Constant definitions

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

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-- Lists

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

**-- TEXT OMITTED –**

maxnoofPLMNforQMC INTEGER ::= 16

maxnoofUEAppLayerMeas INTEGER ::= 16

maxnoofSNSSAIforQMC INTEGER ::= 16

maxnoofTAforQMC INTEGER ::= 8

maxnoofThresholdsForExcessPacketDelay INTEGER ::= 255

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

--

-- IEs

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

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id-IncludeBeamMeasurementsIndication ProtocolIE-ID ::= 340

id-ExcessPacketDelayThresholdConfiguration ProtocolIE-ID ::= 341

id-PagingCause ProtocolIE-ID ::= 342

id-PagingCauseIndicationForVoiceService ProtocolIE-ID ::= 343

id-PEIPSassistanceInformation ProtocolIE-ID ::= 344

id-FiveG-ProSeAuthorized ProtocolIE-ID ::= 345

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