3GPP TSG RAN3 125 R3-244709

**Maastricht, NL, 19 - 23 August, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **1349** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | Corrections to QMC support in NR-DC for RRC Segmentation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung, Lenovo, Ericsson, ZTE | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_QoE\_enh-Core | | | | |  | ***Date:*** | | | 2024-08-21 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | |  |
|  | *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)* ***S*** *(adding to the sourcing companies’ CR statistics)*  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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | RAN2 has defined two separate parameters on whether the segmentation of RRC message for QoE reporting are enabled on SRB4 and SRB5, i.e. rrc-SegAllowedSRB4 and rrc-SegAllowedSRB5. However, if the QoE configuring node requests the non QoE configuring node to receive the QoE report, the QoE configuring node cannot know whether the non QoE configuring node enables RRC segmentation for QoE report according to the current spec.  Moreover, there was comment that whether the RRC segmentation is allowed over SRB4 or SRB5 are node capability. However, according to the current RRC spec, the configuration on rrc-SegAllowedSRB4 and rrc-SegAllowedSRB5 is on a per UE basis, and it is possible that whether to enable the RRC segmentation on SRB4/5 is reconfigured to a UE by UE dedicated signalling. As a result, perceiving the rrc-SegAllowedSRB4 and rrc-SegAllowedSRB5 as node capability deviates from the intention to introduce such IEs and restricts the flexibility for good gNB implementation.  Therefore, the new coordination is needed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Add RRC Segmentation Required IE in QMC Information Request, and RRC Segmentation Allowed IE in QMC Information Response.   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) on the QMC coordination. | | | | | | | | |
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| ***Consequences if not approved:*** | | Some sub-features for QMC in NR-DC are not fully supported. | | | | | | | | |
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| ***Clauses affected:*** | | 9.2.3.197, 9.2.3.198, 9.3.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Rev#1: revised based on RAN3#125 meeting discussion. | | | | | | | | |

-------------------------------------------Start of changes-------------------------------------------

### 9.2.3 General IE definitions

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

-------------------------------------------Next change-------------------------------------------

#### 9.2.3.197 QMC Coordination Request

This IE contains the information that the S-NG-RAN node needs to provide to the M-NG-RAN node, or the information that the M-NG-RAN node needs to provide to the S-NG-RAN node, for managing configuration and reporting of one or more QoE and/or RAN visible QoE measurements.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| **MN to SN QMC Coordination Request List** |  | *0..1* |  |  |
| **>MN to SN QMC Coordination Request Item** |  | *1..<maxnoofUEAppLayerMeas>* |  |  |
| >>QoE Reference | M |  | OCTET STRING (SIZE(6)) | QoE Reference, as defined in clause 5.2 of TS 28.405 [55]. It consists of MCC+MNC+QMC ID, where the MCC and MNC are received with the QMC activation request from the management system to identify one PLMN hosting the management system, and QMC ID is a 3-byte Octet String. |
| >>Measurement Configuration Application Layer ID | O |  | INTEGER  (0..15, ...) | This IE indicates the identity of the application layer measurement configuration, and corresponds to information provided in the *MeasConfigAppLayerId* IE as defined in TS 38.331 [10]. This IE is allocated by the M-NG-RAN node. |
| >>Measurement Collection Entity IP Address | O |  | Transport Layer Address  9.2.3.29 | The IP address of the entity receiving the QoE measurement report. |
| >>QoE Reporting Path Request | O |  | ENUMERATED (srb4, srb5, …) | This IE indicates the preferred SRB for receiving the QoE reports. |
| >>RAN Visible QoE Reporting Path Request | O |  | ENUMERATED (srb4, srb5, …) | This IE indicates the preferred SRB for receiving the RAN Visible QoE reports. |
| >>Further RAN Visible QoE Interest Inquiry | O |  | ENUMERATED (true, ...) | This IE is used by the M-NG-RAN node when the M-NG-RAN node is the RAN Visible QoE configuring node and the S-NG-RAN node provides the bearers for the application session, to request from the S-NG-RAN node to indicate whether the S-NG RAN node is interested in receiving further RVQoE reports. |
| >>Further RAN Visible QoE Reporting Path Inquiry | O |  | ENUMERATED (true, ...) | This IE is used by the M-NG-RAN node when the M-NG-RAN node is the RAN Visible QoE configuring node and the S-NG-RAN node provides the bearers for the application session, to request from the S-NG-RAN node the preferred SRB for receiving further RAN Visible QoE reports. |
| >>Current RAN Visible QoE Configuration | O |  | RAN Visible QoE Configuration  9.2.3.201 | This IE is to indicate the current RAN Visible QoE configuration and inquire about the RAN Visible QoE Configuration preference of the S-NG-RAN node. |
| >>Available RAN Visible QoE Metrics | O |  | 9.2.3.158 |  |
| >>Configuration Release Indication | O |  | ENUMERATED (rvqoe, qoe and rvqoe, …) | This IE indicates that the configuration has been released by the M-NG-RAN node. |
| **SN to MN QMC Coordination Request List** |  | *0..1* |  |  |
| **>SN to MN QMC Coordination Request Item** |  | *1..<maxnoofUEAppLayerMeas>* |  |  |
| >>QoE Reference | M |  | OCTET STRING (SIZE(6)) | QoE Reference, as defined in clause 5.2 of TS 28.405 [55]. It consists of MCC+MNC+QMC ID, where the MCC and MNC are received with the QMC activation request from the management system to identify one PLMN hosting the management system, and QMC ID is a 3-byte Octet String. |
| >>Measurement Collection Entity IP Address | O |  | Transport Layer Address  9.2.3.29 | The IP address of the entity receiving the QoE measurement report. |
| >>QoE Reporting Path Request | O |  | ENUMERATED (srb4, srb5, ...) | This IE indicates the preferred SRB for receiving the QoE reports. |
| >>RAN Visible QoE Reporting Path Request | O |  | ENUMERATED (srb4, srb5, ...) | This IE indicates the preferred SRB for receiving the RAN Visible QoE reports. |
| >>Further RAN Visible QoE Interest Inquiry | O |  | ENUMERATED (true, ...) | This IE is used by the S-NG-RAN node when the S-NG-RAN node is the RAN Visible QoE configuring node and the M-NG-RAN node provides the bearers for the application session, to request from the M-NG-RAN node to indicate whether the M-NG-RAN node is interested in receiving further RVQoE reports. |
| >>Further RAN Visible QoE Reporting Path | O |  | ENUMERATED (true, ...) | This IE is used by the S-NG-RAN node when the S-NG-RAN node is the RAN Visible QoE configuring node and the M-NG-RAN node provides the bearers for the application session, to request from the M-NG-RAN node to indicate whether the M-NG RAN node is interested in receiving further RVQoE reports. |
| >>Current RAN Visible QoE Configuration | O |  | RAN Visible QoE Configuration  9.2.3.201 | This IE is to indicate the current RAN Visible QoE configuration. |
| >>Available RAN Visible QoE Metrics |  |  | 9.2.3.158 |  |
| >>Configuration Release Indication | O |  | ENUMERATED (rvqoe, qoe and rvqoe, ...) | This IE indicates that the configuration has been released by the S-NG-RAN node. |
| **>>RRC Segmentation Required Allowed Request** | O |  | ENUMERATED (true, …) | This IE is used by the M-NG-RAN node to indicate that the use of segmentation over SRB5 by the S-NG-RAN node is required, or used by the S-NG-RAN node to indicate that the use of segmentation over SRB4 by the M-NG-RAN node is required. |

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| --- | --- |
| Range bound | Explanation |
| maxnoofUEAppLayerMeas | Maximum no. of simultaneous QoE measurement configurations at a UE. In this version of the specification, the value is 16. |

#### 9.2.3.198 QMC Coordination Response

This IE contains the information that the M-NG-RAN node needs to provide to the S-NG-RAN node, or the information that the S-NG-RAN node needs to provide to the M-NG-RAN node in response to the QMC Coordination Request.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| **MN to SN QMC Coordination Response List** |  | *0..1* |  |  |
| **>MN to SN QMC Coordination Response Item** |  | *1..<maxnoofUEAppLayerMeas>* |  |  |
| >>QoE Reference | M |  | OCTET STRING (SIZE(6)) | QoE Reference, as defined in clause 5.2 of TS 28.405 [55]. It consists of MCC+MNC+QMC ID, where the MCC and MNC are received with the QMC activation request from the management system to identify one PLMN hosting the management system, and QMC ID is a 3-byte Octet String. |
| >>Measurement Configuration Application Layer ID | O |  | INTEGER  (0..15, ...) | This IE indicates the identity of the application layer measurement configuration, and corresponds to information provided in the *MeasConfigAppLayerId* IE as defined in TS 38.331 [10]. |
| >>QoE Configuration Sending Path | O |  | ENUMERATED (mn, sn, …) |  |
| >>QoE Reporting Path Response | O |  | ENUMERATED (accepted, rejected, …) |  |
| >>RVQoE Reporting Path Response | O |  | ENUMERATED (accepted, rejected, …) |  |
| >>Further RAN Visible QoE Interest Response | O |  | ENUMERATED (interested, not-interested, ...) | This IE is to indicate whether the M-NG-RAN node is interested in receiving further RAN Visible QoE reports. |
| >>Further RAN Visible QoE Reporting Path Response | O |  | ENUMERATED (srb4, srb5, ...) | This IE indicates the preferred path for further RAN Visible QoE reporting. |
| >>Preferred RAN Visible QoE Configuration | O |  | RAN Visible QoE Configuration  9.2.3.201 | The RAN Visible QoE Configuration preference of the M-NG-RAN node. |
| **SN to MN QMC Coordination Response List** |  | *0..1* |  |  |
| **>SN to MN QMC Coordination Response Item** |  | *1..<maxnoofUEAppLayerMeas>* |  |  |
| >>QoE Reference | M |  | OCTET STRING (SIZE(6)) | QoE Reference, as defined in clause 5.2 of TS 28.405 [55]. It consists of MCC+MNC+QMC ID, where the MCC and MNC are received with the QMC activation request from the management system to identify one PLMN hosting the management system, and QMC ID is a 3-byte Octet String. |
| >>QoE Reporting Path Response | O |  | ENUMERATED (accepted, rejected, …) |  |
| >>RAN Visible QoE Reporting Path Response | O |  | ENUMERATED (accepted, rejected, …) |  |
| >>Further RAN Visible QoE Interest Response | O |  | ENUMERATED (interested, not-interested, ...) | This IE indicates whether the S-NG-RAN node is interested in receiving further RAN Visible QoE reports. |
| >>Further RAN Visible QoE Reporting Path Response | O |  | ENUMERATED (srb4, srb5, ...) | This IE indicates the preferred path for further RAN Visible QoE reporting. |
| >>Preferred RAN Visible QoE Configuration | O |  | RAN Visible QoE Configuration  9.2.3.201 | The RAN Visible QoE Configuration preference of the S-NG-RAN node. |
| **RRC Segmentation Allowed** | O |  | ENUMERATED (enabled, …) | This IE is used to indicate that the node providing the QMC Coordination Response allows segmentation of *MeasurementReportAppLayer* RRC messages defined in TS 38.331 [10]. |

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| --- | --- |
| Range bound | Explanation |
| maxnoofUEAppLayerMeas | Maximum no. of simultaneous QoE measurement configurations at a UE. In this version of the specification, the value is 16. |

-------------------------------------------Next change-------------------------------------------

### 9.3.5 Information Element definitions

-- ASN1START

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-- Information Element Definitions

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

XnAP-IEs {

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

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

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-CNTypeRestrictionsForEquivalent,

id-CNTypeRestrictionsForServing,

id-Additional-UL-NG-U-TNLatUPF-List,

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

-- Q

QMCConfigInfo ::= SEQUENCE {

uEAppLayerMeasInfoList UEAppLayerMeasInfoList,

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

...

}

QMCConfigInfo-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

UEAppLayerMeasInfoList ::= SEQUENCE (SIZE(1..maxnoofUEAppLayerMeas)) OF UEAppLayerMeasInfo-Item

UEAppLayerMeasInfo-Item ::= SEQUENCE {

uEAppLayerMeasConfigInfo UEAppLayerMeasConfigInfo,

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

...

}

UEAppLayerMeasInfo-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

QMCCoordinationRequest ::= SEQUENCE {

mN-to-SN-QMCCoordRequestList MN-to-SN-QMCCoordRequestList OPTIONAL,

sN-to-MN-QMCCoordRequestList SN-to-MN-QMCCoordRequestList OPTIONAL,

rRCSegmentationAllowedRequired ENUMERATED{true, ...} OPTIONAL,

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

...

}

QMCCoordinationRequest-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

QMCCoordinationResponse ::= SEQUENCE {

mN-to-SN-QMCCoordResponseList MN-to-SN-QMCCoordResponseList OPTIONAL,

sN-to-MN-QMCCoordResponseList SN-to-MN-QMCCoordResponseList OPTIONAL,

rRCSegmentationAllowed ENUMERATED{enabled, ...} OPTIONAL,

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

...

}

QMCCoordinationResponse-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

-------------------------------------------End of changes-------------------------------------------