**3GPP TSG-RAN WG3 Meeting #114-e R3-215658**

**E-meeting, 1-11 Nov 2021**

**Title:** TP to 38.413 on configuration details

**Source:** Huawei, Ericsson

**Agenda item:** 15.2.1.2

**Document Type:** Discussion

# 1. Introduction

In this contribution, we provide the TP to 38.413 on QoE configuration details based on our contributions [1] [2] [3].

# 2. TP for 38.413

8.3.1 Initial Context Setup

8.3.1.1 General

The purpose of the Initial Context Setup procedure is to establish the necessary overall initial UE context at the NG-RAN node, when required, including PDU session context, the Security Key, Mobility Restriction List, UE Radio Capability and UE Security Capabilities, etc. The AMF may initiate the Initial Context Setup procedure if a UE-associated logical NG-connection exists for the UE or if the AMF has received the *RAN UE NGAP ID* IE in an INITIAL UE MESSAGE message or if the NG-RAN node has already initiated a UE-associated logical NG-connection by sending an INITIAL UE MESSAGE message via another NG interface instance. The procedure uses UE-associated signalling.

For signalling only connections and if the *UE Context Request* IE is not received in the Initial UE Message, the AMF may be configured to trigger the procedure for all NAS procedures or on a per NAS procedure basis depending on operator’s configuration.

8.3.1.2 Successful Operation

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**Figure 8.3.1.2-1: Initial context setup: successful operation**

In case of the establishment of a PDU session the 5GC shall be prepared to receive user data before the INITIAL CONTEXT SETUP RESPONSE message has been received by the AMF. If no UE-associated logical NG-connection exists, the UE-associated logical NG-connection shall be established at reception of the INITIAL CONTEXT SETUP REQUEST message.

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If the *Trace Activation* IE is included in the INITIAL CONTEXT SETUP REQUEST message the NG-RAN node shall, if supported, initiate the requested trace function as described in TS 32.422 [11]. In particular, the NG-RAN node shall, if supported:

- if the *Trace Activation* IE includes the *MDT Activation* IE set to "Immediate MDT and Trace", initiate the requested trace session and MDT session as described in TS 32.422 [11];

- if the *Trace Activation* IE includes the *MDT Activation* IE set to "Immediate MDT Only", "Logged MDT only", initiate the requested MDT session as described in TS 32.422 [11] and the NG-RAN node shall ignore the *Interfaces To Trace* IE and the *Trace Depth* IE;

- if the *Trace Activation* IE includes the *MDT Location Information* IE within the *MDT Configuration* IE, store this information and take it into account in the requested MDT session;

- if the *Trace Activation* IE includes the *Signalling Based MDT PLMN List* IE within the *MDT Configuration* IE, the NG-RAN node may use it to propagate the MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *Bluetooth Measurement Configuration* IE within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *WLAN Measurement Configuration* IE within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *Sensor Measurement Configuration* IE within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *MDT Configuration* IE and if the NG-RAN node is a gNB at least the *MDT Configuration-NR* IE shall be present, while if the NG-RAN node is an ng-eNB at least the *MDT Configuration-EUTRA* IE shall be present.

If the *UE Security Capabilities* IE included in the INITIAL CONTEXT SETUP REQUEST message only contains the EIA0 or NIA0 algorithm as defined in TS 33.501 [13] and if the EIA0 or NIA0 algorithm is defined in the configured list of allowed integrity protection algorithms in the NG-RAN node (TS 33.501 [13]), the NG-RAN node shall take it into use and ignore the keys received in the *Security Key* IE.

If the QMC Activation IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall, if supported, use it for QoE management as described in TS 38.300 [8].

Next change

### 8.3.4 UE Context Modification

#### 8.3.4.1 General

The purpose of the UE Context Modification procedure is to partly modify the established UE context. The procedure uses UE-associated signalling.

#### 8.3.4.2 Successful Operation



Figure 8.3.4.2-1: UE context modification: successful operation

Upon receipt of the UE CONTEXT MODIFICATION REQUEST message the NG-RAN node shall

- if supported, store the received IAB Authorization information in the UE context.

If the *Security Key* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall store it and perform AS key re-keying according to TS 33.501 [13].

If the *UE Security Capabilities* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall store them and take them into use together with the received keys according to TS 33.501 [13].

If the *Index to RAT/Frequency Selection Priority* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, use it as defined in TS 23.501 [9].

If the *RAN Paging Priority* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node may use it to determine a priority for paging the UE in RRC\_INACTIVE state.

If the *UE Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall

- replace the previously provided UE Aggregate Maximum Bit Rate by the received UE Aggregate Maximum Bit Rate in the UE context;

- use the received UE Aggregate Maximum Bit Rate for all Non-GBR QoS flows for the concerned UE as specified in TS 23.501 [9].

If the *Core Network Assistance Information for RRC INACTIVE* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, replace the previously provided Core Network Assistance Information for RRC INACTIVE and use it for the RRC\_INACTIVE state decision and RNA configuration for the UE and RAN paging if any for a UE in RRC\_INACTIVE state, as specified in TS 38.300 [8]. If the *MICO All PLMN* IE is included in the *Core Network Assistance Information* *for RRC INACTIVE* IE the NG-RAN node shall, if supported, consider that the registration area for the UE is the full PLMN and ignore the *TAI List for RRC Inactive* IE.

If the *CN Assisted RAN Parameters Tuning* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node may use it as described in TS 23.501 [9].

If the *RRC Inactive Transition Report Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, store this information in the UE context and report to the AMF the *User Location Information* IE and the *RRC State* IE in the UE CONTEXT MODIFICATION RESPONSE message.

If the *RRC Inactive Transition Report Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message and set to "cancel report", the NG-RAN node shall, if supported, stop reporting to the AMF the RRC state of the UE.

The NG-RAN node shall report, in the UE CONTEXT MODIFICATION RESPONSE message to the AMF, the successful update of the UE context.

If the *Emergency Fallback Indicator* IE is included in the UE CONTEXT MODIFICATION REQUEST message, it indicates that the concerned UE context is subject to emergency service fallback as described in TS 23.501 [9] and the NG-RAN node may, if supported, take the appropriate mobility actions taking into account the *Emergency Service Target CN* IE if provided.

If the *New AMF UE NGAP ID* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall use the received value for future signalling with the AMF.

If the *New GUAMI* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall replace the previously stored GUAMI as specified in TS 23.501 [9].

If the *SRVCC Operation Possible* IE is included in UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, store the content of the received *SRVCC Operation Possible* IE in the UE context and use it as defined in TS 23.216 [31].

If the *NR V2X Services Authorized* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, update its V2X services authorization information for the UE accordingly. If the *NR V2X Services Authorized* IE includes one or more IEs set to "not authorized", the NG-RAN node shall, if supported, initiate actions to ensure that the UE is no longer accessing the relevant service(s).

If the *LTE V2X Services Authorized* IE is contained in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, update its V2X services authorization information for the UE accordingly. If the *LTE V2X Services Authorized* IE includes one or more IEs set to "not authorized", the NG-RAN node shall, if supported, initiate actions to ensure that the UE is no longer accessing the relevant service(s).

If the *NR UE Sidelink Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported:

- replace the previously provided NR UE Sidelink Aggregate Maximum Bit Rate, if available in the UE context, with the received value;

* use the received value for the concerned UE’s sidelink communication in network scheduled mode for NR V2X services.

If the *LTE UE Sidelink Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported:

- replace the previously provided LTE UE Sidelink Aggregate Maximum Bit Rate, if available in the UE context, with the received value;

- use the received value for the concerned UE’s sidelink communication in network scheduled mode for LTE V2X services.

If the *PC5 QoS Parameters* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, use it as defined in TS 23.287 [33].

If the UE CONTEXT MODIFICATION REQUEST message contains the *UE Radio Capability ID* IE, the NG-RAN node shall, if supported, use it as specified in TS 23.501 [9] and TS 23.502 [10].

If the QMC Activation IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, use it for QoE management as described in TS 38.300 [8].

If the *QMC Deactivation* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, deactivate the QMC configurations therein.

Next change

## 8.4 UE Mobility Management Procedures

### 8.4.1 Handover Preparation

#### 8.4.1.1 General

The purpose of the Handover Preparation procedure is to request the preparation of resources at the target side via the 5GC. There is only one Handover Preparation procedure ongoing at the same time for a certain UE. The procedure uses UE-associated signalling.

#### 8.4.1.2 Successful Operation



Figure 8.4.1.2-1: Handover preparation: successful operation

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

If the *DAPS Request Information* IE is included for a DRB in the *Source NG-RAN Node to Target NG-RAN Node Transparent Container* IE within the HANDOVER REQUIRED message, it indicates that the request concerns a DAPS Handover for that DRB, as described in TS 38.300 [8].

If the HANDOVER REQUIRED message includes the QMC Activation IE, the AMF shall pass it to the target NG-RAN node.

Next change

8.4.2 Handover Resource Allocation

8.4.2.1 General

The purpose of the Handover Resource Allocation procedure is to reserve resources at the target NG-RAN node for the handover of a UE. The procedure uses UE-associated signalling.

8.4.2.2 Successful Operation

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**Figure 8.4.2.2-1: Handover resource allocation: successful operation**

The AMF initiates the procedure by sending the HANDOVER REQUEST message to the target NG-RAN node.

If the *Masked IMEISV* IE is contained in the HANDOVER REQUEST message the target NG-RAN node shall, if supported, use it to determine the characteristics of the UE for subsequent handling.

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If the *Trace Activation* IE is included in the HANDOVER REQUEST message the target NG-RAN node shall, if supported, initiate the requested trace function as described in TS 32.422 [11]. In particular, the NG-RAN node shall, if supported:

- if the *Trace Activation* IE includes the *MDT Activation* IE set to "Immediate MDT and Trace", initiate the requested trace session and MDT session as described in TS 32.422 [11];

- if the *Trace Activation* IE includes the *MDT Activation* IE set to "Immediate MDT Only", "Logged MDT only", initiate the requested MDT session as described in TS 32.422 [11] and the target NG-RAN node shall ignore the *Interfaces To Trace* IE and the *Trace Depth* IE;

- if the *Trace Activation* IE includes the *MDT Location Information* IE within the *MDT Configuration* IE, store this information and take it into account in the requested MDT session;

- if the *Trace Activation* IE includes the *Signalling Based MDT PLMN List* IE within the *MDT Configuration* IE, the NG-RAN node may use it to propagate the MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *Bluetooth Measurement Configuration* IE within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *WLAN Measurement Configuration* IE within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *Sensor Measurement Configuration* IE within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [41].

- if the *Trace Activation* IE includes the *MDT Configuration* IE and if the NG-RAN node is a gNB at least the *MDT Configuration-NR* IE shall be present, while if the NG-RAN node is an ng-eNB at least the *MDT Configuration-EUTRA* IE shall be present.

If the *Location Reporting Request Type* IE is included in the HANDOVER REQUEST message, the target NG-RAN node should perform the requested location reporting functionality for the UE as described in subclause 8.12.

If the *Core Network Assistance Information for RRC INACTIVE* IE is included in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, store this information in the UE context and use it for the RRC\_INACTIVE state decision and RNA configuration for the UE and RAN paging if any for a UE in RRC\_INACTIVE state, as specified in TS 38.300 [8].

If the *CN Assisted RAN Parameters Tuning* IE is included in the HANDOVER REQUEST message, the NG-RAN node may use it as described in TS 23.501 [9].

If the *New Security Context Indicator* IE is included in the HANDOVER REQUEST message, the target NG-RAN node shall use the information as specified in TS 33.501 [13].

If the QMC Activation IE is included in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, use it for QoE management as described in TS 38.300 [8].

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Next change

### 9.2.2 UE Context Management Messages

#### 9.2.2.1 INITIAL CONTEXT SETUP REQUEST

This message is sent by the AMF to request the setup of a UE context.

Direction: AMF → NG-RAN node

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | reject |
| Old AMF | O |  | AMF Name9.3.3.21 |  | YES | reject |
| UE Aggregate Maximum Bit Rate | C-ifPDUsessionResourceSetup |  | 9.3.1.58 |  | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| GUAMI | M |  | 9.3.3.3 |  | YES | reject |
| **PDU Session Resource Setup Request List** |  | *0..1* |  |  | YES | reject |
| **>PDU Session Resource Setup Request Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID | M |  | 9.3.1.50 |  | - |  |
| >>PDU Session NAS-PDU | O |  | NAS-PDU9.3.3.4 |  | - |  |
| >>S-NSSAI  | M |  | 9.3.1.24 |  | - |  |
| >>PDU Session Resource Setup Request Transfer | M |  | OCTET STRING | Containing the *PDU Session Resource Setup Request Transfer* IE specified in subclause 9.3.4.1. | - |  |
| >>PDU Session Expected UE Activity Behaviour | O |  | Expected UE Activity Behaviour9.3.1.94 | Expected UE Activity Behaviour for the PDU Session. | YES | ignore |
| Allowed NSSAI | M |  | 9.3.1.31 | Indicates the S-NSSAIs permitted by the network | YES | reject |
| UE Security Capabilities | M |  | 9.3.1.86 |  | YES | reject |
| Security Key | M |  | 9.3.1.87 |  | YES | reject |
| Trace Activation | O |  | 9.3.1.14 |  | YES | ignore |
| Mobility Restriction List | O |  | 9.3.1.85 |  | YES | ignore |
| UE Radio Capability | O |  | 9.3.1.74 |  | YES | ignore |
| Index to RAT/Frequency Selection Priority | O |  | 9.3.1.61 |  | YES | ignore |
| Masked IMEISV | O |  | 9.3.1.54 |  | YES | ignore |
| NAS-PDU | O |  | 9.3.3.4 |  | YES | ignore |
| Emergency Fallback Indicator | O |  | 9.3.1.26 |  | YES | reject |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| UE Radio Capability for Paging | O |  | 9.3.1.68 |  | YES | ignore |
| Redirection for Voice EPS Fallback  | O |  | 9.3.1.116 |  | YES | ignore |
| Location Reporting Request Type | O |  | 9.3.1.65 |  | YES | ignore |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| SRVCC Operation Possible | O |  | 9.3.1.128 |  | YES | ignore |
| IAB Authorized | O |  | 9.3.1.129 |  | YES | ignore |
| Enhanced Coverage Restriction | O |  | 9.3.1.140 |  | YES | ignore |
| Extended Connected Time | O |  | 9.3.3.31 |  | YES | ignore |
| UE Differentiation Information | O |  | 9.3.1.144 |  | YES | ignore |
| NR V2X Services Authorized | O |  | 9.3.1.146 |  | YES | ignore |
| LTE V2X Services Authorized | O |  | 9.3.1.147 |  | YES | ignore |
| NR UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.3.1.148 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| LTE UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.3.1.149 | This IE applies only if the UE is authorized for LTE V2X services. | YES | ignore |
| PC5 QoS Parameters | O |  | 9.3.1.150 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| CE-mode-B Restricted | O |  | 9.3.1.155 |  | YES | ignore |
| UE User Plane CIoT Support Indicator | O |  | 9.3.1.160 |  | YES | ignore |
| RG Level Wireline Access Characteristics | O |  | OCTET STRING | Specified in TS 23.316 [34]. Indicates the wireline access technology specific QoS information corresponding to a specific wireline access subscription. | YES | ignore |
| Management Based MDT PLMN List | O |  | MDT PLMN List9.3.1.168 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.142 |  | YES | reject |
| QMC Activation | O |  | 9.3.1.xx2 | Contains the QoE measurement configuration information. | YES | ignore |

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| Range bound | Explanation |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |

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| Condition | Explanation |
| ifPDUsessionResourceSetup | This IE shall be present if the *PDU Session Resource Setup List* IE is present. |

Next change

#### 9.2.2.7 UE CONTEXT MODIFICATION REQUEST

This message is sent by the AMF to provide UE Context information changes to the NG-RAN node.

Direction: AMF → NG-RAN node

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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 |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | reject |
| RAN Paging Priority | O  |  | 9.3.3.15 |  | YES | ignore |
| Security Key | O |  | 9.3.1.87 |  | YES | reject |
| Index to RAT/Frequency Selection Priority | O |  | 9.3.1.61 |  | YES | ignore |
| UE Aggregate Maximum Bit Rate | O |  | 9.3.1.58 |  | YES | ignore |
| UE Security Capabilities | O |  | 9.3.1.86 |  | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| Emergency Fallback Indicator | O |  | 9.3.1.26 |  | YES | reject |
| New AMF UE NGAP ID | O |  | AMF UE NGAP ID9.3.3.1 |  | YES | reject |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| New GUAMI | O |  | GUAMI9.3.3.3 |  | YES | reject |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| SRVCC Operation Possible | O |  | 9.3.1.128 |  | YES | ignore |
| IAB Authorized | O |  | 9.3.1.129 |  | YES | ignore |
| NR V2X Services Authorized | O |  | 9.3.1.146 |  | YES | ignore |
| LTE V2X Services Authorized | O |  | 9.3.1.147 |  | YES | ignore |
| NR UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.3.1.148 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| LTE UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.3.1.149 | This IE applies only if the UE is authorized for LTE V2X services. | YES | ignore |
| PC5 QoS Parameters | O |  | 9.3.1.150 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.142 |  | YES | reject |
| RG Level Wireline Access Characteristics | O |  | OCTET STRING | Specified in TS 23. 316 [34]. Indicates the wireline access technology specific QoS information corresponding to a specific wireline access subscription. | YES | ignore |
| QMC Activation | O |  | 9.3.1.xx2 | Contains the QoE measurement configuration information. | YES | ignore |
| QMC Deactivation | O |  | 9.3.1.xx1 | Indicates the QoE measurement configurations to be deactivated. | YES | ignore |

Next change

#### 9.2.3.1 HANDOVER REQUIRED

This message is sent by the source NG-RAN node to the AMF to request the preparation of resources at the target.

Direction: NG-RAN node → AMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | reject |
| Handover Type | M |  | 9.3.1.22 |  | YES | reject |
| Cause | M |  | 9.3.1.2 |  | YES | ignore |
| Target ID | M |  | 9.3.1.25 |  | YES | reject |
| Direct Forwarding Path Availability | O |  | 9.3.1.64 |  | YES | ignore |
| **PDU Session Resource List** |  | *1* |  |  | YES | reject |
| **>PDU Session Resource Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID | M |  | 9.3.1.50 |  | - |  |
| >>Handover Required Transfer | M |  | OCTET STRING | Containing the *Handover Required Transfer* IE specified in subclause 9.3.4.14. | - |  |
| Source to Target Transparent Container | M |  | 9.3.1.20 |  | YES | Reject |
| QMC Activation | O |  | 9.3.1.xx2 | Used for passing the QoE measurement configuration from the source NG-RAN node to the AMF in NGAP handover. | YES | ignore |

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| Range bound | Explanation |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |

Next change

#### 9.2.3.4 HANDOVER REQUEST

This message is sent by the AMF to the target NG-RAN node to request the preparation of resources.

Direction: AMF → NG-RAN node.

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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 |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| Handover Type | M |  | 9.3.1.22 |  | YES | reject |
| Cause | M |  | 9.3.1.2 |  | YES | ignore |
| UE Aggregate Maximum Bit Rate | M |  | 9.3.1.58 |  | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| UE Security Capabilities  | M |  | 9.3.1.86 |  | YES | reject |
| Security Context | M |  | 9.3.1.88 |  | YES | reject |
| New Security Context Indicator | O |  | 9.3.1.55 |  | YES | reject |
| NASC | O |  | NAS-PDU9.3.3.4 | Refers to either the “Intra N1 mode NAS transparent container” or the “S1 mode to N1 mode NAS transparent container”, the details of the IE definition and the encoding arespecified in TS 24.501 [26]. | YES | reject |
| **PDU Session Resource Setup List** |  | *1* |  |  | YES | reject |
| **>PDU Session Resource Setup Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID  | M |  | 9.3.1.50 |  | - |  |
| >>S-NSSAI | M |  | 9.3.1.24 |  | - |  |
| >>Handover Request Transfer | M |  | OCTET STRING | Containing the *PDU Session Resource Setup Request Transfer* IE specified in subclause 9.3.4.1. | - |  |
| >>PDU Session Expected UE Activity Behaviour | O |  | Expected UE Activity Behaviour9.3.1.94 | Expected UE Activity Behaviour for the PDU Session. | YES | ignore |
| Allowed NSSAI | M |  | 9.3.1.31 | Indicates the S-NSSAIs permitted by the network. | YES | reject |
| Trace Activation | O |  | 9.3.1.14 |  | YES | ignore |
| Masked IMEISV | O |  | 9.3.1.54 |  | YES | ignore |
| Source to Target Transparent Container | M |  | 9.3.1.20 |  | YES | reject |
| Mobility Restriction List | O |  | 9.3.1.85 |  | YES | ignore |
| Location Reporting Request Type | O |  | 9.3.1.65 |  | YES | ignore |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| GUAMI | M |  | 9.3.3.3 |  | YES | reject |
| Redirection for Voice EPS Fallback  | O |  | 9.3.1.116 |  | YES | ignore |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| SRVCC Operation Possible | O |  | 9.3.1.128 |  | YES | ignore |
| IAB Authorized | O |  | 9.3.1.129 |  | YES | reject |
| Enhanced Coverage Restriction | O |  | 9.3.1.140 |  | YES | ignore |
| UE Differentiation Information | O |  | 9.3.1.144 |  | YES | ignore |
| NR V2X Services Authorized | O |  | 9.3.1.146 |  | YES | ignore |
| LTE V2X Services Authorized | O |  | 9.3.1.147 |  | YES | ignore |
| NR UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.3.1.148 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| LTE UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.3.1.149 | This IE applies only if the UE is authorized for LTE V2X services. | YES | ignore |
| PC5 QoS Parameters | O |  | 9.3.1.150 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| CE-mode-B Restricted | O |  | 9.3.1.155 |  | YES | ignore |
| UE User Plane CIoT Support Indicator | O |  | 9.3.1.160 |  | YES | ignore |
| Management Based MDT PLMN List | O |  | MDT PLMN List9.3.1.168 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.142 |  | YES | reject |
| Extended Connected Time | O |  | 9.3.3.31 |  | YES | ignore |
| QMC Activation  | O |  | 9.3.1.xx2 | Used for passing the QoE measurement configuration from the AMF to the target NG-RAN node in NGAP handover. | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |

Next change

9.3.1.xx1 QMC Deactivation

The IE defines the QMC configurations to be deactivated.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| QoE Reference List |  | *1 ..* < *maxnoofUEApplicationLayerMeas* > |  |  | - | - |
|  >QoE Reference | M | OCTET STRING (SIZE(6)) |  |  |  |  |

9.3.1.xx2 QMC Activation

The IE contains the information for the QoE Measurement Collection (QMC) configuration.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| **UE Application layer measurement information List** |  | *0..1* |  |  | YES | ignore |
| > **UE Application layer measurement information Item** |  | *1..<maxnoofUEApplicationLayerMeas>* |  |  |  |  |
| >> UE Application layer measurement information | M |  | 9.3.1.xx3 |  | - |  |
|  |  |  |  |  |  |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofUEApplicationLayerMeas | Maximum no. of UE application layer measurement. Value is FFS. |

9.3.1.xx3 UE Application Layer Measurement Information

The IE defines configuration information for the QoE Measurement Collection (QMC) function.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| Container for application layer measurement configuration | O |  | Octet string (1..FFS | Indicates application layer measurement configuration, see Annex L in [xx]. Present in case of initial QoE configuration. | - | - |
| Measurement Configuration Application Layer ID | O |  |  | This IE is present only when the message containing it is NG handover related. Otherwise, this IE is not needed.The IE indicates the identity of the application layer measurement configuration, as defined in TS 38.331 [18]. | - | - |
| CHOICE *Area Scope of QMC* | O |  |  |  | - | - |
| >*Cell based* |  |  |  |  |  | - |
| >>**Cell ID List for QMC** |  | *1 .. <maxnoofCellIDforQMC>* |  |  |  | - |
| >>>NG-RAN CGI | M |  | 9.3.1.73 |  | - | - |
| >*TA based* |  |  |  |  |  | - |
| >>**TA List for QMC** |  | *1 .. <maxnoofTAforQMC>* |  |  |  | - |
| >>>TAC | M |  | 9.3.3.10 | The TAI is derived using the current serving PLMN. | - | - |
| >*TAI based* |  |  |  |  | - | - |
| >>**TAI List for QMC** |  | *1 .. <maxnoofTAforQMC>* |  |  | - | - |
| >>>TAI | M |  | 9.3.3.11 |  | - | - |
| >*PLMN area based* |  |  |  |  |  | - |
| >>**PLMN List for QMC** |  | *1 .. <maxnoofPLMNforQMC>* |  |  |  | - |
| >>>PLMN Identity | M |  | 9.3.3.5 |  | - | - |
| Service Type | M |  | 9.3.1.xx4 | This IE indicates the service type of UE application layer measurements. | - | - |
| QoE Reference  | M |  | OCTET STRING (SIZE(6)) | *QoE Reference*, as defined in clause 5.2 of TS 28.405 [x]. It consists of MCC+MNC+QMC ID, where the MCC and MNC are coming with the trace activation request from the management system to identify one PLMN containing the management system, and QMC ID is a 3-bytes Octet String. |  |  |
| Measurement Collection Entity IP Address | M |  | Transport Layer Address9.3.2.4 | The IP address of the entity receiving the QoE measurement report. |  |  |
| **S-NSSAI List**  | O | *0 .. 1* |  |  |  |  |
| >S-NSSAI Item |  | *1 .. <maxnoofS-NSSAIforQMC>* |  |  |  |  |
| >>S-NSSAI | M |  | 9.3.1.24 |  |  |  |
| CHOICE *MDT Alignment Information (FFS)* | O |  |  | Indicates the MDT measurements with which alignment is required. | - | - |
| >S-based MDT |  |  |  |  |  |  |
| >>NG-RAN Trace ID | M |  | OCTET STRING (SIZE(8)) | This IE is composed of the following: Trace Reference defined in TS 32.422 [11] (leftmost 6 octets, with PLMN information encoded as in 9.3.3.1), and Trace Recording Session Reference defined in TS 32.422 [11] (last 2 octets). | - | - |
| >M-based MDT |  |  |  |  |  |  |
| >>Trace Reference | M |  | OCTET STRING (SIZE(6)) | *Trace Reference* defined in TS 32.422 [11].  | - | - |
| Radio Results and Information Report Configuration(FFS) | O |  | 9.3.1.xx5 |  |  |  |
| RAN Visible QoE Metric Indication(FFS) | O |  | 9.3.1.xx6 |  |  |  |

*Editor’s Note: Tabular structure may be refined after further checking.*

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofCellIDforQMC | Maximum no. of Cell ID subject for QMC scope. Value is 32. |
| maxnoofTAforQMC | Maximum no. of TA subject for QMC scope. Value is 8. |
| maxnoofPLMNforQMC | Maximum no. of PLMNs in the PLMN list for QMC scope. Value is 16. |
| maxnoofS-NSSAIforQMC | Maximum no. of S-NSSAIs in the S-NSSAI list for QMC scope. Value is 16. |

9.3.1.xx4 Service Type

The IE defines service type for the QoE Measurement Collection (QMC) function.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Service Type | M |  | ENUMERATED(streaming service, mTSI service, vR, ...) | This IE indicates the service type of UE application layer measurements. | - | - |

*Editior’s Note: FFS whether MBMS, XR should be supported or not.*

9.3.1.xx5 Radio Results and Information Report Configuration

The IE defines whether the NG-RAN needs to report the radio-related measurement results and the radio-related information for the QMC function.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Radio-related Measurement Results Report | O |  | ENUMERATED(true, ...) | The IE defines whether the NG-RAN needs to report the radio-related measurement results for the QMC function | - | - |
|  |  |  |  |  |  |  |

*Editor’s Note: Additional IEs are FFS.*

9.3.1.xx6 RAN Visible QoE Metric Indication

The IE defines which metrics can be configured by the NG-RAN in the RAN visible QoE measurement.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Buffer Level Indication | O |  | ENUMERATED(true, ...) | The IE defines whether the Buffer Level could be collected as visible QoE metric by NG-RAN from UE, for DASH and VR service types. | - | - |
| Playout delay Indication | O |  | ENUMERATED(true, ...) | The IE defines whether the Playout delay could be collected as visible QoE metric by NG-RAN from UE, for DASH and VR service types. |  |  |

End change

# 3. Reference

1. R3-5G0701, Further discussions on configuration details, Huawei
2. R3-5G0703, Further discussions on RAN visible QoE metrics, Huawei
3. R3-5G0704, Further discussions on RAN related measurements and information, Huawei