**3GPP TSG-RAN WG3 Meeting #123 *R3-240834***

**Athens, GR, 26 Feb – 01 Mar, 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **29.413** | **CR** | **0024** | **rev** | **1** | **Current version:** | **17.3.0** |  |
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| *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:***  | Trace functionality extension in N3IWF for non-3GPP access scenarios |
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| ***Source to WG:*** | Huawei, Ericsson, ZTE, Nokia, Nokia Shanghai Bell, Deutsche Telekom, British Telecommunications |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core, TEI16 |  | ***Date:*** | 2024-02-27 |
|  |  |  |  |  |
| ***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)* |
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| ***Reason for change:*** | According to the SA5 LS in S5-241051, the tracing functionality in N3IWF is agreed for signalling based 5GC trace activation in TS 32.422. This CR is to add the signalling based 5GC trace procedures for N3IWF.   |
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| ***Summary of change:*** | * Add the signalling-based trace procedures.
* Specify that the *MDT Configuration* IE in the Trace Start message should be ignored when received.

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 it adds the missing tracing functionality for N3IWF.  |
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| ***Consequences if not approved:*** | No support of the signalling based 5GC trace activation for N3IWF.   |
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| ***Clauses affected:*** | 5.1, 5.2, 5.3 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specification  | TS/TR ... CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev0: R3-240515Rev1: R3-240834 Update the texts based on online comments.  |

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| **Change Begins** |

# 5 Non-3GPP access

## 5.1 Use of the NGAP for non-3GPP access

The following NGAP procedures are used between the Non-3GPP access network node and the AMF:

- PDU Session Management Procedures

- PDU Session Resource Setup

- PDU Session Resource Release

- PDU Session Resource Modify

- PDU Session Resource Notify

- UE Context Management Procedures

- Initial Context Setup

- UE Context Release Request

- UE Context Release

- UE Context Modification

- Transport of NAS Messages Procedures

- Initial UE Message

- Downlink NAS Transport

- Uplink NAS Transport

- NAS Non Delivery Indication

- Reroute NAS Request

- Interface Management Procedures

- NG Setup

- RAN Configuration Update

- AMF Configuration Update

- NG Reset

- Error Indication

- AMF Status Indication

- Overload Start

- Overload Stop

- UE TNLA Binding Procedures

- UE TNLA Binding Release

The following NGAP procedures are used between the N3IWF node and the AMF:

- Trace Procedures

- Trace Start

- Trace Failure Indication

- Deactivate Trace

For the NGAP procedures used between the Non-3GPP access network node and the AMF, the Non-3GPP access network node fulfils the behaviour of the NG-RAN node as specified in clause 8 of TS 38.413 [2], with clarifications as specified in Clause 5.3. The text in clause 8 of TS 38.413 [2] referring to Uu should be understood as referring to the Y2 reference point as specified in TS 23.501 [3].

## 5.2 NGAP messages used for non-3GPP access

The list given below shows the NGAP messages, as specified in TS 38.413 [2] subclause 9.2 (tabular format) and 9.4

(ASN.1 notation) that are used between the Non-3GPP access network node and the AMF.

- PDU SESSION RESOURCE SETUP REQUEST

- PDU SESSION RESOURCE SETUP RESPONSE

- PDU SESSION RESOURCE RELEASE COMMAND

- PDU SESSION RESOURCE RELEASE RESPONSE

- PDU SESSION RESOURCE MODIFY REQUEST

- PDU SESSION RESOURCE MODIFY RESPONSE

- PDU SESSION RESOURCE NOTIFY

- INITIAL CONTEXT SETUP REQUEST

- INITIAL CONTEXT SETUP RESPONSE

- INITIAL CONTEXT SETUP FAILURE

- UE CONTEXT RELEASE REQUEST

- UE CONTEXT RELEASE COMMAND

- UE CONTEXT RELEASE COMPLETE

- UE CONTEXT MODIFICATION REQUEST

- UE CONTEXT MODIFICATION RESPONSE

- UE CONTEXT MODIFICATION FAILURE

- INITIAL UE MESSAGE

- DOWNLINK NAS TRANSPORT

- UPLINK NAS TRANSPORT

- NAS NON DELIVERY INDICATION

- REROUTE NAS REQUEST

- NG SETUP REQUEST

- NG SETUP RESPONSE

- NG SETUP FAILURE

- RAN CONFIGURATION UPDATE

- RAN CONFIGURATION UPDATE ACKNOWLEDGE

- RAN CONFIGURATION UPDATE FAILURE

- AMF CONFIGURATION UPDATE

- AMF CONFIGURATION UPDATE ACKNOWLEDGE

- AMF CONFIGURATION UPDATE FAILURE

- NG RESET

- NG RESET ACKNOWLEDGE

- ERROR INDICATION

- AMF STATUS INDICATION

- OVERLOAD START

- OVERLOAD STOP

- UE TNLA BINDING RELEASE REQUEST

The list given below shows the NGAP messages, as specified in TS 38.413 [2] subclause 9.2 (tabular format) and 9.4

(ASN.1 notation) that are used between the N3IWF node and the AMF.

- TRACE START

- TRACE FAILURE INDICATION

- DEACTIVATE TRACE

## 5.3 Exceptions for NGAP message contents and information element coding when used for non-3GPP access

For the NGAP messages transferred between the Non-3GPP access network node and the AMF, the following exceptions to the specification in TS 38.413 [2] shall be applied:

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INITIAL CONTEXT SETUP REQUEST message:

- the following IEs shall be ignored, when received:

- *Core Network Assistance Information* *for RRC INACTIVE* IE

- *Trace Activation* IE (except for non-trusted non-3GPP access as specified in TS 23.501 [3])

- *Mobility Restriction List* IE

- *UE Radio Capability* IE

- *Index to RAT/Frequency Selection Priority* IE

- *Emergency Fallback Indicator* IE

- *RRC Inactive Transition Report Request* IE

- *UE Radio Capability for Paging* IE

- *Redirection for Voice EPS Fallback* IE

- *Location Reporting Request Type* IE

- *CN Assisted RAN Parameters Tuning* IE

- *SRVCC Operation Possible* IE

- *IAB Authorized* IE

- *Enhanced Coverage Restriction* IE

- *Extended Connected Time* IE

- *UE Differentiation Information* IE

- *NR V2X Services Authorized* IE

- *LTE V2X Services Authorized* IE

- *NR UE Sidelink Aggregate Maximum Bit Rate* IE

- *LTE UE Sidelink Aggregate Maximum Bit Rate* IE

- *PC5 QoS Parameters* IE

- *CE-mode-B Restricted* IE

- *UE User Plane CIoT Support Indicator* IE

- *Management Based MDT PLMN List* IE

- *UE Radio Capability ID* IE

- *UE Aggregate Maximum Bit Rate* IE (except for non-trusted non-3GPP access, trusted non-3GPP access and trusted WLAN access as specified in TS 23.501 [3])

- *UE Security Capabilities* IE

- *Time Synchronisation Assistance Information* IE

- *QMC Configuration Information* IE

- *Target NSSAI Information* IE

- *UE Slice Maximum Bit Rate List* IE

- *5G ProSe Authorized* IE

- *5G ProSe UE PC5 Aggregate Maximum Bit Rate* IE

- *5G ProSe PC5 QoS Parameters* IE

- *RG Level Wireline Access Characteristics* IE: the information given within this IE between the W-AGF and the AMF shall be stored in the UE context by the W-AGF as specified in TS 23.316 [6].

- *Notification Control* IE included in the *QoS Flow Level QoS Parameters* IE

- *Alternative QoS Parameters Set List* IE included in the *QoS Flow Level QoS Parameters* IE

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NG SETUP REQUEST message:

- the following IEs shall be ignored, when received:

- *Default Paging DRX* IE

- *NB-IoT Default Paging DRX* IE

NG SETUP RESPONSE message:

- the following IEs shall be ignored, when received:

- *IAB Supported* IE

RAN CONFIGURATION UPDATE message:

- the following IEs shall be ignored, when received:

- *Default Paging DRX* IE

- *NB-IoT Default Paging DRX* IE

OVERLOAD START message:

- *AMF Overload Response* IE: if the *Overload Action* IE is included, the contained information is used to identify the related signalling traffic corresponding to the Establishment cause for non-3GPP access as specified in TS 24.502 [7].

- *Slice Overload Response* IE: if the *Overload Action* IE is included, the contained information is used to identify the related signalling traffic corresponding to the Establishment cause for non-3GPP access as specified in TS 24.502 [7].

TRACE START message:

- the following IEs shall be ignored, when received:

- *MDT Configuration* IE

The *Global RAN Node ID* IE in the applicable NGAP messages includes the following IEs as specified in TS 38.413 [2]:

- *Global N3IWF ID* IE for the untrusted non-3GPP access.

- *Global TNGF ID* IE for the trusted non-3GPP access.

- *Global TWIF ID* IE for the trusted WLAN access.

- *Global W-AGF ID* IE for the wireline 5G access.

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| **Change Ends** |