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5G;
Application of the NG Application Protocol (NGAP)
to non-3GPP access
(3GPP TS 29.413 version 15.2.0 Release 15)

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Foreword

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1 Scope

The present document describes the applicability of NG Application Protocol (NGAP) messages and procedures, defined in 3GPP TS 38.413 [2], to non-3GPP access. A general description for non-3GPP access can be found in 3GPP TS 23.501 [3] and 3GPP TS 23.502 [4].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".
- [3] 3GPP TS 23.501: "System Architecture for the 5G System".
- [4] 3GPP TS 23.502: "Procedures for the 5G System".

3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

N3IWF	Non-3GPP InterWorking Function
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4 Principles for the use of NGAP for non-3GPP access

4.1 General

TS 23.501 [3] specifies the NGAP used between the Non-3GPP InterWorking Function (N3IWF) and the AMF. NGAP is used as specified in TS 38.413 [2] with clarifications or additions as specified in Clause 5.

5 Non-3GPP access

5.1 Use of the NGAP for non-3GPP access

The following NGAP procedures are used between the N3IWF 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

For the NGAP procedures used between the N3IWF and the AMF, the N3IWF 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 N3IWF 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

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

For the NGAP messages transferred between the N3IWF and the AMF, the following exceptions to the specification in TS 38.413 [2] shall be applied:

PDU SESSION RESOURCE SETUP REQUEST message:

- the following IEs shall be ignored, when received:
 - *RAN Paging Priority IE*

PDU SESSION RESOURCE RELEASE COMMAND message:

- the following IEs shall be ignored, when received:
 - *RAN Paging Priority IE*

PDU SESSION RESOURCE MODIFY REQUEST message:

- the following IEs shall be ignored, when received:
 - *RAN Paging Priority IE*

INITIAL CONTEXT SETUP REQUEST message:

- the following IEs shall be ignored, when received:
 - *Core Network Assistance Information IE*
 - *Trace Activation IE*
 - *MobilityRestriction 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*

UE CONTEXT RELEASE COMPLETE message:

- the following IEs shall be ignored, when received:
 - *Information on Recommended Cells and RAN Nodes for Paging IE*

UE CONTEXT MODIFICATION REQUEST message:

- the following IEs shall be ignored, when received:
 - *RAN Paging Priority IE*
 - *Index to RAT/Frequency Selection Priority IE*
 - *Core Network Assistance Information IE*
 - *Emergency Fallback Indicator IE*
 - *RRC Inactive Transition Report Request IE*
- if this is the first message received from a new AMF, the N3IWF shall identify the old AMF and the UE using the received *RAN UE NGAP ID*, release the UE-associated logical NG-connection to the old AMF and create a new UE-associated logical NG-connection to the new AMF