**3GPP TSG-CT WG1 Meeting #124-eC1-20XXXX**

**Electronic meeting, 2-10 June 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.502** | **CR** | **0138** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Correcting editorial errors | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Motorola Mobility, Lenovo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc16-non3GPP | | | | |  | ***Date:*** | | | 2020-06-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | N5CW device is misspelled as N3CW device.  A sentence started with a space. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correction of format of “is” which is red and underlined.  Correction of N3CW device to N5CW device.  Removal of the space.  Correction of the subclause in TS 24.501, where the NSSAI information element is defined.  Correction of figure and table numbering. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Editorial errors remain. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.3.2, 7.2.4.3, 7.3A.4.2, 9.2.1, 9.2.2, 9.2.3, 9.2.5, 9.2.6, 9.2.7, 9.3.2.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 6.3.2 Authentication of N5GC device behind a CRG over wireline access

In order to register to 5GCN via wireline access, the N5GC device first establishes a layer-2 connection to W-AGF via the CRG as specified in CableLabs WR-TR-5WWC-ARCH-V01-190820 [36]. Once the layer-2 connection is established, authentication and authorization for access to 5GCN is performed.

The W-AGF initiates an exchange of EAP-Request/Identity message and EAP-Response/Identity message as specified in IETF RFC 3748 [9] for obtaining the identity of the N5GC device. Inwireline access, the W-AGF and the N5GC device exchange EAP-Request/Identity message and EAP-Response/Identity message via the CRG, encapsulated in the link layer protocol packets.

Upon reception of EAP-Request/Identity message, the N5GC device shall:

a) construct an EAP-Response/Identity message as described in IETF RFC 3748 [9] containing an NAI as specified IETF RFC 7542 [37]; and

NOTE: If subscription identifier privacy protection is to be used, the "username" part is either omitted or set to "anonymous".

b) transmit the EAP-Response of identity type encapsulated in the link layer protocol packets towards the W-AGF.

The CRG conveys the information provided by the N5GC device to the W-AGF which initiates the registration on behalf of the N5GC device as described in 3GPP TS 24.501 [4].

An exchange of the EAP request and EAP response as described in IETF RFC 3748 [9] occurs until the N5GC device is authenticated by the 5GCN with the EAP authentication described in 3GPP TS 33.501 [5].

Editor's note (WI:5WWC, CR# 0116): The SUPI, SUCI used when the W-AGF acts on behalf of the N5GC device are FFS.

Upon completion of successful authentication and on reception of the authentication result from the AMF, the W-AGF serving the N5GC shall complete the procedure by sending an EAP-Success message encapsulated in the link layer protocol packets.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 7.2.4.3 UE procedure when the UE only supports connectivity with N3IWF

If the UE only supports connectivity with N3IWF and does not support connectivity with ePDG, the UE shall ignore the following ePDG related configuration parameters if available in the N3AN node configuration information when selecting an N3IWF:

- the home ePDG identifier configuration; and

- the preference parameter in each N3AN node selection information entry in the N3AN node selection information.

The UE shall proceed as follows:

a) if the UE is located in its home country:

1) if the N3AN node configuration information is provisioned:

i) if the home N3IWF identifier configuration is provisioned in the N3AN node configuration information and contains an IP address, the UE shall use the IP address of the home N3IWF identifier configuration as the IP address of the N3IWF;

ii) if the home N3IWF identifier configuration is provisioned in the N3AN node configuration information and does not contain an IP address, the UE shall use the FQDN of the home N3IWF identifier configuration as the N3IWF FQDN; and

iii) if the home N3IWF identifier configuration is not provisioned in the N3AN node configuration information, the UE shall construct an N3IWF FQDN based on the FQDN format of the HPLMN's N3AN node selection information entry in the N3AN node selection information using the PLMN ID of the HPLMN stored on the USIM as specified in 3GPP TS 23.003 [8]; and

2) if the N3AN node configuration information is not provisioned on the UE, the UE shall construct the N3IWF FQDN based on the Operator Identifier FQDN format using the PLMN ID of the HPLMN stored on the USIM;

and for the above cases constructing or using an N3IWF FQDN, the UE shall use the DNS server function to resolve the N3IWF FQDN to the IP address(es) of the N3IWF(s). The UE shall select as the IP address of the N3IWF a resolved IP address of an N3IWF with the same IP version as its local IP address; and

b) if the UE is not located in its home country:

1) if the N3AN node configuration information is provisioned, the UE is registered to a VPLMN via 3GPP access and the PLMN ID of VPLMN is not included in the list of "forbidden PLMNs for non-3GPP access to 5GCN":

i) if an N3AN node selection information entry for the VPLMN is available in the N3AN node selection information of the N3AN node configuration information, the UE shall construct an N3IWF FQDN based on FQDN format of the VPLMN's N3AN node selection information entry in the N3AN node selection information using the PLMN ID of the VPLMN as specified in 3GPP TS 23.003 [8]; and

ii) if an N3AN node selection information entry for the VPLMN is not available in the N3AN node selection information of the N3AN node configuration information, the UE shall construct an N3IWF FQDN based on the FQDN format of the 'Any\_PLMN' N3AN node selection information entry in the N3AN node selection information using the PLMN ID of the VPLMN as specified in 3GPP TS 23.003 [8];

and for the above cases, the UE shall use the DNS server function to resolve the constructed N3IWF FQDN to the IP address(es) of the N3IWF(s). The UE shall select as the IP address of the N3IWF a resolved IP address of an N3IWF with the same IP version as its local IP address; and

2) if one of the following is true:

- the UE is not registered to a PLMN via 3GPP access and the UE uses WLAN;

- the N3AN node configuration information is not provisioned; or

- the N3AN node configuration information is provisioned, the UE is registered to a VPLMN via 3GPP access and the PLMN ID of VPLMN is included in the list of "forbidden PLMNs for non-3GPP access to 5GCN";

the UE shall perform a DNS query (see 3GPP TS 23.003 [8]) as specified in subclause 7.2.4.2.2 to determine if the visited country mandates the selection of N3IWF in this country and:

i) if selection of N3IWF in visited country is mandatory:

A) if the UE is registered to a VPLMN via 3GPP access, the PLMN ID of VPLMN is included in one of the returned DNS records and is not included in the list of "forbidden PLMNs for non-3GPP access to 5GCN", the UE shall construct an N3IWF FQDN based on the Operator Identifier FQDN format using the PLMN ID of the VPLMN in 3GPP access as described in 3GPP TS 23.003 [8]; and

B) if the UE is not registered to a PLMN via 3GPP access or the UE is registered to a VPLMN via 3GPP access and the PLMN ID of VPLMN is not included in any of the returned DNS records or is included in the list of "forbidden PLMNs for non-3GPP access to 5GCN":

- if the N3AN node configuration information is provisioned, the UE shall select a PLMN included in the DNS response that has highest PLMN priority (see 3GPP TS 24.526 [17]) in the N3AN node selection information of the N3AN node configuration information excluding any PLMN in the list of "forbidden PLMNs for non-3GPP access to 5GCN" and the UE shall construct an N3IWF FQDN based on the FQDN format of the selected PLMN's N3AN node selection information entry in the N3AN node selection information using the PLMN ID of the selected PLMN as specified in 3GPP TS 23.003 [8]; and

- if the N3AN node configuration information is not provisioned or the N3AN node selection information of the N3AN node configuration information excluding any PLMN in the list of "forbidden PLMNs for non-3GPP access to 5GCN" does not contain any of the PLMNs in the DNS response, selection of the PLMN is UE implementation specific. The UE shall construct an N3IWF FQDN based on the Operator Identifier FQDN format using the PLMN ID of the selected PLMN as described in 3GPP TS 23.003 [8];

and for the above cases, the UE shall use the DNS server function to resolve the constructed N3IWF FQDN to the IP address(es) of the N3IWF(s). The UE shall select as the IP address of the N3IWF a resolved IP address of an N3IWF with the same IP version as its local IP address;

ii) if the DNS response contains no records and thus selection of N3IWF in visited country is not mandatory:

A) if the N3AN node configuration information is provisioned and the N3AN node selection information of the N3AN node configuration information contains one or more PLMNs in the visited country which are not in the list of "forbidden PLMNs for non-3GPP access to 5GCN", the UE shall select a PLMN that has highest PLMN priority (see 3GPP TS 24.526 [17]) in the N3AN node selection information excluding any PLMN in the list of "forbidden PLMNs for non-3GPP access to 5GCN" and the UE shall construct an N3IWF FQDN based on the FQDN format of the selected PLMN's N3AN node selection information entry in the N3AN node selection information as specified in 3GPP TS 23.003 [8] using the PLMN ID of the selected PLMN; and

B) if the N3AN node configuration information is not provisioned or the N3AN node configuration information is provisioned and the N3AN node selection information of the N3AN node configuration information excluding any PLMN in the list of "forbidden PLMNs for non-3GPP access to 5GCN" contains no PLMNs in the visited country:

- if the home N3IWF identifier configuration is provisioned in the N3AN node configuration information (see 3GPP TS 24.526 [17]) and contains an IP address, the UE shall use the IP address of the home N3IWF identifier configuration as the IP address of the N3IWF;

- if the home N3IWF identifier configuration is provisioned in the N3AN node configuration information (see 3GPP TS 24.526 [17]) and does not contain an IP address, the UE shall use the FQDN of the home N3IWF identifier configuration as the N3IWF FQDN; and

- if the home N3IWF identifier configuration is not provisioned in the N3AN node configuration information, the UE shall construct an N3IWF FQDN based on the Operator Identifier FQDN format using the PLMN ID of the HPLMN as described in 3GPP TS 23.003 [8];

and for the above cases constructing or using an N3IWF FQDN, the UE shall use the DNS server function to resolve the N3IWF FQDN to the IP address(es) of the N3IWF(s). The UE shall select as the IP address of the N3IWF a resolved IP address of an N3IWF with the same IP version as its local IP address; and

iii) if no DNS response is received, the UE shall terminate the N3AN node selection procedure.

Following bullet a) and b) above, once the UE selected the IP address of the N3IWF, the UE shall initiate the IKEv2 SA establishment procedure as specified in subclause 7.3.

If the IKEv2 SA establishment procedure towards an N3IWF in the HPLMN fails due to no response to an IKE\_SA\_INIT request message, and the selection of N3IWF in the HPLMN is performed using home N3IWF identifier configuration and there are more pre-configured N3IWFs in the HPLMN, the UE shall repeat the tunnel establishment attempt using the next FQDN or IP address(es) of the N3IWF in the HPLMN.

If the IKEv2 SA establishment procedure towards to any of the received IP addresses of the selected N3IWF fails due to no response to an IKE\_SA\_INIT request message, then the UE shall repeat the N3IWF selection as described in this subclause, excluding the N3IWFs for which the UE did not receive a response to the IKE\_SA\_INIT request message.

NOTE: The time the UE waits before reattempting access to another N3IWF or to an N3IWF that it previously did not receive a response to an IKE\_SA\_INIT request message, is implementation specific.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 7.3A.4.2 N5CW device registration over trusted WLAN access network

A trusted WLAN access network (TWAN) includes a trusted WLAN access point (TWAP) and a trusted WLAN interworking function (TWIF) as illustrated in figure 7.3A.4.2-1.

|  |
| --- |
|  |

Figure 7.3A.4.2-1: Trusted WLAN Access Network

The TWAN and an N5CW device initiate an exchange of EAP-Request/Identity message and EAP-Response/Identity message as specified in IETF RFC 3748 [9] for link layer authentication of the UE by the TWAP. In the trusted WLAN access network, the TWAP and the N5CW device exchange EAP-Request/Identity message and EAP-Response/Identity message, encapsulated in the link layer protocol packets i.e. IEEE 802.11/802.1x packets

Upon reception of EAP-Request/Identity message encapsulated in the IEEE 802.11/802.1x packets from the TWAP, the N5CW device shall:

a) construct an EAP-Response/Identity message as described in IETF RFC 3748 [9] containing an NAI as specified in subclause 28.7 of 3GPP TS 23.003 [8] to Request the PLMN with trusted 5G connectivity without NAS signalling capability; and

NOTE 1: The NAI includes the 5G-GUTI assigned to the N5CW device over 3GPP access, if the N5CW device is also a 5G UE and is already registered to 5GCN over 3GPP access.

Editor's note: An NAI for requesting the PLMN with trusted 5G connectivity without NAS signalling capability needs to be specified in subclause 28.7 of 3GPP TS 23.003 [8].

b) transmit the EAP-Response of identity type encapsulated in the link layer protocol packets towards the TWAP.

The TWAP conveys the information provided by the N5CW device to the TWIF which initiates the registration on behalf of the N5CW device to an AMF.

NOTE 2: The communication protocol between the TWAP and the TWIF is outside of the scope of 3GPP.

An exchange of the EAP request and EAP response as described in IETF RFC 3748 [9] occurs until the N5CW device is authenticated by the 5GCN with the EAP authentication described in 3GPP TS 33.501 [5]. Upon completion of the N5CW device authentication and reception of the EAP-Success by the N5CW device, the N5CW device and the TWAP use the TWAP key to establish access specific layer-2 security 4-way handshake according to IEEE 802.11 [19].

Editor's note: What the EAP method uses to perform this procedure is FFS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.1 GUAMI

The purpose of the GUAMI information element is to provide the globally unique AMF ID.

The GUAMI information element is coded as shown in figures 9.2.1-1 and table 9.2.1-1.

The GUAMI is a type 3 information element with a length of 7 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| GUAMI IEI | | | | | | | | octet 1 |
| MCC digit 2 | | | | MCC digit 1 | | | | octet 2 |
| MNC digit 3 | | | | MCC digit 3 | | | | octet 3 |
| MNC digit 2 | | | | MNC digit 1 | | | | octet 4 |
| AMF region ID | | | | | | | | octet 5 |
| AMF set ID | | | | | | | | octet 6 |
| AMF set ID (continued) | | AMF pointer | | | | | | octet 7 |

Figure 9.2.1-1: GUAMI information element

Table 9.2.1-1: GUAMI information element

|  |
| --- |
| MCC, Mobile country code (octet 2, octet 3 bits 1 to 4)  The MCC field is coded as in ITU-T Recommendation E.212 [21], Annex A. |
| MNC, Mobile network code (octet 4, octet 3 bits 5 to 8).  The coding of this field is the responsibility of each administration but BCD coding shall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, bits 5 to 8 of octet 3 shall be coded as "1111". |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.2 Establishment cause for non-3GPP access

The purpose of the Establishment cause for non-3GPP access information element is to provide the establishment cause for non-3GPP access.

The Establishment cause for non-3GPP access information element is coded as shown in figures 9.2.2-1 and table 9.2.2-1.

The Establishment cause for non-3GPP access is a type 3 information element with length of 2 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Establishment cause for non-3GPP access IEI | | | | | | | | octet 1 |
| 0  Spare | 0  Spare | 0  Spare | 0  Spare | N3AEC | | | | octet 2 |

Figure 9.2.2-1: Establishment cause for non-3GPP access information element

Table 9.2.2-1: Establishment cause for non-3GPP access information element

|  |
| --- |
| Establishment cause for non-3GPP access (N3AEC) (octet 2 bits 1 to 4)  Bits  4 3 2 1  0 0 0 0 emergency  0 0 0 1 highPriorityAccess  0 0 1 1 mo-Signalling  0 1 0 0 mo-Data  1 0 0 0 mps-PriorityAccess  1 0 0 1 mcs-PriorityAccess  All other values are spare values. The receiving entity shall treat a spare value as 0100, "MO data". |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.3 PLMN ID

The purpose of the PLMN ID information element is to indicate the PLMN identity of the selected PLMN.

The PLMN ID is a type 4 information element with a length of 5 octets.

The PLMN ID information element is coded as shown in figure 9.2.3-1 and table 9.2.3-1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| PLMN ID IEI | | | | | | | | octet 1 |
| Length of PLMN ID contents | | | | | | | | octet 2 |
| MCC digit 2 | | | | MCC digit 1 | | | | octet 3 |
| MNC digit 3 | | | | MCC digit 3 | | | | octet 4 |
| MNC digit 2 | | | | MNC digit 1 | | | | octet 5 |

Figure 9.2.3-1: PLMN ID information element

Table 9.2.3-1: PLMN ID information element

|  |
| --- |
| MCC, Mobile country code (octet 3, octet 4 bits 1 to 4)  The MCC field is coded as in ITU-T Recommendation E.212 [42], Annex A  MNC, Mobile network code (octet 5, octet 4 bits 5 to 8).  The coding of this field is the responsibility of each administrationbutBCDcodingshall be used. The MNC shall consist of 2 or 3 digits. If a network operator decides to use only two digits in the MNC, bits 5 to 8 of octet 4 shall be coded as "1111". Mobile equipment shall accept MNC coded in such a way. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.5 TNGF IPv4 contact info

The purpose of the TNGF IPv4 contact info information element is to indicate the IPv4 address of the TNGF to be used for IKE SA establishent over trusted non-3GPP access network.

The TNGF IPv4 contact info is a type 4 information element with a length of 6 octets.

The TNGF IPv4 contact info information element is coded as shown in figure 9.2.5-1 and table 9.2.5.-1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| TNGF IPv4 contact info IEI | | | | | | | | octet 1 |
| Length of TNGF IPv4 contact info contents | | | | | | | | octet 2 |
| TNGF IPv4 address | | | | | | | | octet 3 - 6 |

Figure 9.2.5-1: TNGF IPv4 contact info information element

Table 9.2.5-1: TNGF IPv4 contact info information element

|  |
| --- |
| TNGF IPv4 address contains IPv4 address of the TNGF for IKE SA establishment over trusted non-3GPP access network. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.6 TNGF IPv6 contact info

The purpose of the TNGF IPv6 contact info information element is to indicate the IPv6 address of the TNGF to be used for IKE SA establishent.

The TNGF IPv6 contact info is a type 4 information element with a length of 18 octets.

The TNGF IPv6 contact info information element is coded as shown in figure 9.2.6-1 and table 9.2.6.-1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| TNGF IPv6 contact info IEI | | | | | | | | octet 1 |
| Length of TNGF IPv6 contact info contents | | | | | | | | octet 2 |
| TNGF IPv6 address | | | | | | | | octet 3 - 18 |

Figure 9.2.6-1: TNGF IPv6 contact info information element

Table 9.2.6-1: TNGF IPv6 contact info information element

|  |
| --- |
| TNGF IPv6 address contains IPv6 address of the TNGF for IKE SA establishment over trusted non-3GPP access network. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 9.2.7 NID

The purpose of the NID information element is to indicate the NID of the selected SNPN.

The NID is a type 4 information element with a length of 8 octets.

The NID information element is coded as shown in figure 9.2.7-1 and table 9.2.7-1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| NID IEI | | | | | | | | octet 1 |
| Length of NID contents | | | | | | | | octet 2 |
| NID value digit 1 | | | | Assignment mode | | | | octet 3 |
| NID value digit 3 | | | | NID value digit 2 | | | | octet 4 |
| NID value digit 5 | | | | NID value digit 4 | | | | octet 5 |
| NID value digit 7 | | | | NID value digit 6 | | | | octet 6 |
| NID value digit 9 | | | | NID value digit 8 | | | | octet 7 |
| 0 0 0 0  Spare | | | | NID value digit 10 | | | | octet 8 |

Figure 9.2.7-1: NID information element

Table 9.2.7-1: NID information element

|  |
| --- |
| Assignment mode (octet 3 bits 1 to 4)  This field contains the binary encoding of the assignment mode of the NID as defined in 3GPP TS 23.003 [8].  NID value (octet 3 bits 5 to 8, octets 4 to 7, octet 8 bits 1 to 4)  This field contains the binary encoding of each hexadecimal digit of the NID value as defined in 3GPP TS 23.003 [8].  Bits 5 to 8 of octet 8 are spare and shall be coded as zero. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 9.3.2.2.2 EAP-Response/5G-NAS message

EAP-Response/5G-NAS message is coded as specified in figure 9.3.2.2.2-1 and table 9.3.2.2.2-1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bits | | | | | | | |  |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Octets |
| Code | | | | | | | | 1 |
| Identifier | | | | | | | | 2 |
| Length | | | | | | | | 3 - 4 |
| Type | | | | | | | | 5 |
| Vendor-Id | | | | | | | | 6 - 8 |
| Vendor-Type | | | | | | | | 9 - 12 |
| Message-Id | | | | | | | | 13 |
| Spare | | | | | | | | 14 |
| AN-parameters length | | | | | | | | 15-16 |
| AN-parameters | | | | | | | | 17 - 17+x |
| NAS-PDU length | | | | | | | | 18+x - 19+x |
| NAS-PDU | | | | | | | | 20+x - n+x |
| Extensions | | | | | | | | n+x+1 - z+x |

Figure 9.3.2.2.2-1: EAP-Response/5G-NAS message

Table 9.3.2.2.2-1: EAP-Response/5G-NAS message

|  |
| --- |
| Code field is set to 2 (decimal) as specified in IETF RFC 3748 [9] subclause 4.1 and indicates response. |
| Identifier field is set as specified in IETF RFC 3748 [9] subclause 4.1. |
| Length field is set as specified in IETF RFC 3748 [9] subclause 4.1 and indicates the length of the EAP-Response/5G-NAS message in octets. |
| Type field is set to 254 (decimal) as specified in IETF RFC 3748 [9] subclause 5.7 and indicates the expanded type. |
| Vendor-Id field is set to the 3GPP Vendor-Id of 10415 (decimal) registered with IANA under the SMI Private Enterprise Code registry. |
| Vendor-Type field is set to EAP-5G method identifier of 3 (decimal) as specified in 3GPP TS 33.402 [10] annex C. |
| Message-Id field is set to 5G-NAS-Id of 2 (decimal). |
| Spare field consists of spare bits. |
| AN-parameters length indicate the length of the AN-parameters field in octets |
| AN-parameters field is coded according to figure 9.3.2.2.2-2 and table 9.3.2.2.2-2. |
| NAS-PDU length field indicates the length of NAS-PDU field in octets. |
| NAS-PDU field contains a NAS message from the UE as specified in 3GPP TS 24.501 [4]. |
| Extensions field is an optional field and consists of spare bits. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |  |
| AN-parameter 1 | | | | | | | | octet 17  octet a |
| AN-parameter 2 | | | | | | | | octet a+1  octet b |
| ... | | | | | | | | octet b+1  octet k |
| AN-parameter n | | | | | | | | octet k+1  octet 17+x |

Figure 9.3.2.2.2-2: AN-parameters field

Table 9.3.2.2.2-2: AN-parameters field

|  |
| --- |
| Each AN-parameter field is coded according to figure 9.3.2.2.2.1-3 and table 9.3.2.2.2.3. |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |  |
| AN-parameter type | | | | | | | | octet a+1 |
| AN-parameter length | | | | | | | | octet a+2 |
| AN-parameter value | | | | | | | | octet a+3  octet b |

Figure 9.3.2.2.2-3: AN-parameter field

Table 9.3.2.2.2-3: AN-parameter field

|  |
| --- |
| The AN-parameter length field indicates the length of the AN-parameter value field. |
|  |
| The AN-parameter type field indicates the type of the AN-parameter value field. Sending entity shall not set the AN-parameter type field to a spare value. Receiving entity shall ignore any AN-parameter field with the AN-parameter type field set to a spare value.  The following AN-parameter type field values are specified:  - 01H (GUAMI);  - 02H (selected PLMN ID);  - 03H (requested NSSAI);  - 04H (establishment cause for non-3GPP access); and  - 05H (selected NID).  All other values of the AN-parameter type field are spare. Receiving entity shall ignore an AN-parameter field with the AN-parameter type field set to a spare value.  When the AN-parameter type field indicates the GUAMI, the AN-parameter value field is coded as value part (as specified in 3GPP TS 24.007 [22] for type 3 information element) of GUAMI information element as specified in subclause 9.2.1.  When the AN-parameter type field indicates the selected PLMN ID, the AN-parameter value field is coded according to value part of PLMN ID information element as specified in subclause 9.2.3.  When the AN-parameter type field indicates the requested NSSAI, the AN-parameter value field is coded according to value part of NSSAI information element as specified in subclause 9.11.3.37 of 3GPP TS 24.501 [4].  When the AN-parameter type field indicates the establishment cause for non-3GPP access, the AN-parameter field is coded as value part (as specified in 3GPP TS 24.007 [22] for type 3 information element) of the Establishment cause for non-3GPP access information element as specified in subclause 9.2.2. |
| When the AN-parameter type field indicates the selected NID, the AN-parameter value field is coded according to the value part of the NID information element as specified in subclause 9.2.7. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of Change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*