**3GPP TSG-CT WG1 Meeting #141eC1-23xxxx**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | **24.502** | **CR** | **0241** | **rev** | **1** | **Current version:** | **18.1.1** |  |
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| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm%22%20%5Cl%20%22_blank)*** *on using this form: comprehensive instructions can be found at <http://www.3gpp.org/Change-Requests>.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | Corrections to UE behaviors when receiving N3IWF/TNGF information in the REGISTRATION REJECT message |
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| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5WWC\_Ph2 |  | ***Date:*** | 2023-04-19 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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:*** | Excerpted from clause 5.5.1.2.5 of TS 24.501 as below:#81 (Selected N3IWF is not compatible with the allowed NSSAI). … …If the N3IWF identifier IE is included in the REGISTRATION REJECT message and the UE supports slice-based N3IWF selection, the UE **may** use the provided N3IWF identifier IE in N3IWF selection as specified in 3GPP TS 24.502 [18] prior to an immediate consecutive initial registration attempt to the network, otherwise the UE shall ignore the N3IWF identifier IE.#82 (Selected TNGF is not compatible with the allowed NSSAI). … … If the TNAN information IE is included in the REGISTRATION REJECT message and the UE supports slice-based TNGF selection, the UE **may** use the provided TNAN information IE in TNAN selection as specified in 3GPP TS 24.502 [18] prior to an immediate consecutive registration attempt to the network, otherwise the UE shall ignore the TNAN information IE.Based on the above, for the UE supporting slice-based N3IWF selection/slice-based TNGF selection, using the N3IWF information or TNAN information in the registration rejection message is an optional requirement.However, "shall" is used in clause 7.2.7 for N3AN node selection based on N3IWF identifier information provided to the UE in the REGISTRATION REJECT message and clause 7.3A.5 for TNAN selection based on TNAN information provided to the UE in the REGISTRATION REJECT message.Actually, when the UE receives the N3IWF information or TNAN information in the registration rejection message, whether the UE will use the received N3IWF selection or TNAN information should depend on whether the UE decides to re-attempt the registration procedure with the same requested NSSAI. Therefore, it is not mandatory for the UE to use the N3IWF identifier or the TNAN information in the REGISTRATION REJECT message for N3IWF or TNGF selection. |
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| ***Summary of change:*** | Correct the clause number in clause 7.2.1.Clarify the conditions under which the UE shall perform N3AN node selection based on N3IWF identifier information provided to the UE in the REGISTRATION REJECT message and TNAN selection based on TNAN information provided to the UE in the REGISTRATION REJECT message. |
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| ***Consequences if not approved:*** | The statement on UE behavior is inconsistent with TS 24.501. |
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| ***Clauses affected:*** | 7.2.1, 7.2.6.2a, 7.2.7, 7.3A.5 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* First Change \* \* \* \*

### 7.2.1 General

The UE performs N3AN node selection procedure based on:

1. the N3AN node configuration information provisioned to the UE by the HPLMN, based on the UE's knowledge of the country the UE is located in and the PLMN the UE is registered to via 3GPP access and based on the list of "forbidden PLMNs for non-3GPP access to 5GCN";or
2. the N3IWF identifier information provided to the UE in the REGISTRATION REJECT message, if any, when the UE has indicated its support for slice-based N3IWF selection to the AMF as specified in 3GPP TS 24.501 [4].

Clauses 7.2.1, 7.2.2, 7.2.3, 7.2.4 and 7.2.6 are applicable to a UE selecting an N3AN node in a PLMN. For a UE accessing PLMN services via an SNPN, restrictions on N3IWF FQDN are specified in clause 4.3.2. As part of N3AN node selection, the UE also selects an PLMN for non-3GPP access.

Clause 7.2.5 is applicable to a UE selecting an N3AN node in an SNPN. As part of N3AN node selection, the UE also selects an SNPN for non-3GPP access.

Clause 7.2.7 is applicable to a UE selecting an N3AN node for case b) above.

Clause 7.2.8 is applicable to a UE selecting an N3IWF for onboarding SNPN.

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

#### 7.2.6.2a UE procedure when the UE only supports connectivity with N3IWF when accessing SNPN via non-3GPP access

If the UE is in the home country of the selected entry in "list of subscriber data" and the entry is considered as valid, the UE shall follow the procedure in clause 7.2.5 bullet a).

If the UE is in a visited country of the selected entry in "list of subscriber data" or there is no valid entry in "list of subscriber data" in the UE, the UE shall construct a N3IWF FQDN for the SNPN.

Editor note: The format of the N3IWF FQDN for SNPN in visited country is FFS.

If the emergency registration procedure has failed for the SNPNs corresponding to the entries of "list of subscriber data", the UE shall abort the procedure.

NOTE: The UE can notify the user that an emergency session cannot be established.

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

### 7.2.7 N3AN node selection based on N3IWF identifier information provided to the UE in the REGISTRATION REJECT message

If the UE that supports slice-based N3IWF selection receives N3IWF identifier IE in the REGISTRATION REJECT message as specified in 3GPP TS 24.501 [4], and re-attempts the registration procedure with the same requested NSSAI over untrusted non-3GPP access, the UE shall proceed as follows:

a) if the N3IWF identifier IE contains an IP address, the UE shall use that IP address as the IP address of the N3IWF; or

b) if the N3IWF identifier IE contains an FQDN, the UE shall use that FQDN as the FQDN of the N3IWF and 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

once the UE has selected the IP address of the N3IWF, the UE shall initiate the IKEv2 SA establishment procedure as specified in clause 7.3.

If the IKEv2 SA establishment procedure towards the selected N3IWF fails due to no response to an IKE\_SA\_INIT request message, the UE shall repeat the N3AN node selection procedure but with considering the N3AN node configuration information provisioned to the UE as specified in clause 7.2.1.

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.5 TNAN selection based on TNAN information provided to the UE in the REGISTRATION REJECT message

If the UE that supports slice-based TNGF selection receives TNAN information IE in the REGISTRATION REJECT message as specified in 3GPP TS 24.501 [4], and re-attempts the registration procedure with the same requested NSSAI over trusted non-3GPP access, the UE shall proceed as follows:

a) if the SSID is included in the received TNAN information IE, the UE shall connect to a TNAN based on the received SSID; otherwise, the UE shall not change the previously used SSID; and

b) if the TNGF ID is included in the received TNAN information IE, the UE shall construct a NAI taking the received TNGF ID into account as specified in clause xxy of 3GPP TS 23.003 [8]; otherwise, the UE shall construct the NAI as specified in clause 28.7.6 of 3GPP TS 23.003 [8].

Editor’s note (CR#0231, 5WWC\_Ph2): The format of the NAI based on the TNGF ID and the format of TNGF ID used in NAI are FFS and waiting for the updates in 3GPP TS 23.003 [8].

Then the UE shall proceed with the EAP authentication as specified in clause 7.3A.2 and by using the new constructed NAI.

\* \* \* End of Changes \* \* \* \*