**3GPP TSG-CT WG1 Meeting #125-eC1-204737**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **2462** | **rev** | **-** | **Current version:** | **16.5.1** |  |
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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 |  | Core Network | **x** |

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| ***Title:*** | NSSAA during PDU session modification procedure | | | | | | | | | |
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| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNS | | | | |  | ***Date:*** | | | 2020-08-07 |
|  |  | | | |  | |  | | |  |
| ***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) Rel-17 (Release 17)* | |
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| ***Reason for change:*** | | CT1 has already agreed that during NSSAA the AMF can reject a request from the UE to establish a PDU session (see [C1-203260](http://www.3gpp.org/ftp/tsg_ct/WG1_mm-cc-sm_ex-CN1/TSGC1_124e/Docs/C1-203260.zip) from CT1#124e meeting).  However, the same can also be applicable to a request for PDU session modification. For example, there is no value in allowing a request to modify a PDU session when the AMF knows that NSSAA has failed for the S-NSSAI.  Therefore, the current AMF behaviour should be extended to PDU session modification as well. | | | | | | | | |
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| ***Summary of change:*** | | The AMF may not forward a PDU session modification request during NSSAA. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unnecessary signaling to modify a PDU session when NSSAA fails since the session will anyways be released.  AMF may have policy to first perform NSSAA before allowing further modifications to a session. Per current spec, the AMF is not able to enforce this policy if required. | | | | | | | | |
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| ***Clauses affected:*** | | 4.6.2.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\*\*\*\* START CHANGE \*\*\*\*\*\*

#### 4.6.2.4 Network slice-specific authentication and authorization

The UE and network may support network slice-specific authentication and authorization.

A serving PLMN shall perform network slice-specific authentication and authorization for the S-NSSAI(s) of the HPLMN which are subject to it based on subscription information. The UE shall indicate whether it supports network slice-specific authentication and authorization in the 5GMM Capability IE in the REGISTRATION REQUEST message as specified in subclauses 5.5.1.2.2 and 5.5.1.3.2.

The upper layer stores an association between each S-NSSAI and its corresponding credentials for the network slice-specific authentication and authorization.

NOTE 1: The credentials for network slice-specific authentication and authorization and how to provision them in the upper layer are out of the scope of 3GPP.

The network slice-specific authentication and authorization procedure shall not be performed unless:

a) the primary authentication and key agreement procedure as specified in the subclause 5.4.1 has successfully been completed; and

b) the initial registration procedure or the mobility and periodic registration update procedure has been completed.

The AMF informs the UE about S-NSSAI(s) for which network slice-specific authentication and authorization will be performed in the pending NSSAI. The AMF informs the UE about S-NSSAI(s) for which NSSAA procedure is completed as success in the allowed NSSAI. The AMF informs the UE about S-NSSAI(s) for which NSSAA procedure is completed as failure in the rejected NSSAI for the failed or revoked NSSAA. The AMF stores and handles allowed NSSAI, pending NSSAI, rejected NSSAI, and 5GS registration result in the REGISTRATION ACCEPT message according to subclauses 5.5.1.2.4 and 5.5.1.3.4.

NOTE 2: The AMF maintains the NSSAA procedure status for each S-NSSAI, as specified in 3GPP TS 29.518 [20B].

To perform network slice-specific authentication and authorization for an S-NSSAI, the AMF invokes an EAP-based network slice-specific authentication and authorization procedure for the S-NSSAI, see subclause 5.4.7 and 3GPP TS 23.502 [9] using the EAP framework as described in 3GPP TS 33.501 [24].

The AMF updates the allowed NSSAI and the rejected NSSAI using the generic UE configuration update procedure as specified in the subclause 5.4.4 after the network slice-specific authentication and authorization procedure is completed.

The AMF shall send the pending NSSAI containing all S-NSSAIs for which the network slice-specific authentication and authorization procedure will be performed or is ongoing in the REGISTRATION ACCEPT message. The AMF shall also include in the REGISTRATION ACCEPT message the allowed NSSAI containing one or more S-NSSAIs from the requested NSSAI which are allowed by the AMF and for which network slice-specific authentication and authorization is not required, if any.The network slice-specific authentication and authorization procedure or the network slice-specific authorization revocation procedure can be invoked by the network for a UE supporting NSSAA at any time. After the network performs the network slice-specific re-authentication and re-authorization procedure or network slice-specific authorization revocation procedure:

a) if network slice-specific authentication and authorization fails or network slice-specific authorization is revoked for some but not all S-NSSAIs in the allowed NSSAI, the AMF updates the allowed NSSAI and the rejected NSSAI accordingly using the generic UE configuration update procedure as specified in the subclause 5.4.4 and inform the SMF to release all PDU sessions associated with the S-NSSAI for which network slice-specific re-authentication and re-authorization fails or network slice-specific authorization is revoked; or

b) if network slice-specific authentication and authorization fails or network slice-specific authorization is revoked for all S-NSSAIs in the allowed NSSAI and the pending NSSAI, then AMF performs the network-initiated de-registration procedure and includes the rejected NSSAI in the DEREGISTRATION REQUEST message as specified in the subclause 5.5.2.3 except when the UE has an emergency PDU session established or the UE is establishing an emergency PDU session. In this case the AMF shall send the CONFIGURATION UPDATE COMMAND message containing rejected NSSAI and inform the SMF to release all PDU sessions associated with the S-NSSAI for which network slice-specific re-authentication and re-authorization fails or network slice-specific authorization is revoked. After the emergency PDU session is released, the AMF performs the network-initiated de-registration procedure as specified in the subclause 5.5.2.3.

When performing the network slice-specific re-authentication and re-authorization procedure if the S-NSSAI is included in the allowed NSSAI for both 3GPP and non-3GPP accesses, and the UE is registered to both 3GPP and non-3GPP accesses in the same PLMN, then the AMF selects an access type to perform network slice-specific authentication and authorization based upon operator policy.

If network slice-specific authorization is revoked for an S-NSSAI that is in the current allowed NSSAI for an access type, the AMF shall:

a) provide a new allowed NSSAI, excluding the S-NSSAI for which the network slice-specific authorization is revoked; and

b) provide a new rejected NSSAI for the failed or revoked NSSAA, including the S-NSSAI for which the network slice-specific authorization is revoked, with the reject cause "S-NSSAI is not available due to the failed or revoked network slice-specific authentication and authorization",

to the UE using the generic UE configuration update procedure as specified in the subclause 5.4.4 and inform the SMF to release all PDU sessions associated with the S-NSSAI for which the network slice-specific authorization is revoked for this access type.

If the UE requests the establishment of a new PDU session or the modification of a PDU session for an S-NSSAI for which:

a) the AMF is performing network slice-specific authentication and authorization procedure and the AMF decides to not forward the 5GSM message based on local policy; or

b) the network slice-specific authentication and authorization procedure has failed;

as described in subclause 5.4.5.3.2.

NOTE 2: If the AMF receives the HTTP code set to "4xx" or "5xx" as specified in 3GPP TS 29.500 [20AA] or the AMF detects that the NSSAAF failure as specified in 3GPP TS 29.526 [21A] during the NSSAA procedure for an S-NSSAI, then the AMF considers the NSSAA procedure has failed for this S-NSSAI.

\*\*\*\*\*\* END CHANGE \*\*\*\*\*\*