**3GPP TSG-SA3 Meeting #116 *draftS3-242391-r2***

Jeju, South Korea, 20 – 24 May 2024

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **33.501** | **CR** | **2011** | **rev** | **1** | **Current version:** | **17.13.0** |  |
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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 |  | Core Network | **X** |

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| ***Title:***  | Serving Network Name check at AUSF  |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** | TEI17 |  | ***Date:*** | 2023-04-29 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | The Serving Network Name check at the AUSF is dependent on the presence of the 3gpp-Sbi-Originating-Network-Id header in the authentication request. If the 3gpp-Sbi-Originating-Network-Id header is not captured (such as legacy NF service consumer, non-roaming), the AUSF can not check the serving network name..  |
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| ***Summary of change:*** | Clarificaton the check is the AUSF is optional, considering the case that the 3gpp-Sbi-Originating-Network-Id header is not included in the Nausf\_UEAuthentication\_Authenticate Request message.  |
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| ***Consequences if not approved:*** | Not clear how the AUSF should handle the case when the 3gpp-Sbi-Originating-Network-Id header is not included in the authentication request message. |
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| ***Clauses affected:*** | 6.1.2 |
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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 ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\* BEGIN CHANGES \*\*\*

### 6.1.2 Initiation of authentication and selection of authentication method

The initiation of the primary authentication is shown in Figure 6.1.2-1.



Figure 6.1.2-1: Initiation of authentication procedure and selection of authentication method

The SEAF may initiate an authentication with the UE during any procedure establishing a signalling connection with the UE, according to the SEAF's policy. The UE shall use SUCI or 5G-GUTI in the Registration Request.

The SEAF shall invoke the Nausf\_UEAuthentication service by sending a Nausf\_UEAuthentication\_Authenticate Request message to the AUSF whenever the SEAF wishes to initiate an authentication.

The Nausf\_UEAuthentication\_Authenticate Request message shall contain either:

- SUCI, as defined in the current specification, or

- SUPI, as defined in TS 23.501 [2].

The SEAF shall include the SUPI in the Nausf\_UEAuthentication\_Authenticate Request message in case the SEAF has a valid 5G-GUTI and re-authenticates the UE. Otherwise the SUCI is included in Nausf\_UEAuthentication\_Authenticate Request. SUPI/SUCI structure is part of stage 3 protocol design.

The Nausf\_UEAuthentication\_Authenticate Request shall furthermore contain:

- the serving network name, as defined in sub-clause 6.1.1.4 of the present document.

NOTE 1: The local policy for the selection of the authentication method does not need to be on a per-UE basis, but can be the same for all UEs.

The Nausf\_UEAuthentication\_Authenticate Request may furthermore contain:

- Disaster Roaming service indication, as specified in TS 23.502[8] clause 4.2.2.2.

Upon receiving the Nausf\_UEAuthentication\_Authenticate Request message, the AUSF shall check that the requesting SEAF in the serving network identified by the 3gpp-Sbi-Originating-Network-Id header specified in TS 29.500 [74] is entitled to use the serving network name in the Nausf\_UEAuthentication\_Authenticate Request, in the case that the 3gpp-Sbi-Originating-Network-Id header is included in the Nausf\_UEAuthentication\_Authenticate Request message. For the case that the 3gpp-Sbi-Originating-Network-Id header is not included, i.e., the non-roaming case, the authorization of the serving network name in the Nausf\_UEAuthentication\_Authenticate Request message by the AUSF is up to implementation.

NOTE 1a: As described in clause 5.9.3.2, the SEPP in the AUSF's network verifies the correctness of the 3gpp-Sbi-Originating-Network-Id header and the SEPP in the SEAF's network ensures that the 3gpp-Sbi-Originating-Network-Id is included. According to Table 5.2.3.2.1-1 of TS 29.500 [74], the SEPP in the AUSF's network also ensures that the 3gpp-Sbi-Originating-Network-Id header is included if the request originates from another network.

The AUSF shall store the received serving network name temporarily. If the serving network is not authorized to use the serving network name, the AUSF shall respond with "serving network not authorized" in the Nausf\_UEAuthentication\_Authenticate Response.

NOTE 2: The AUSF and the UDM may be configured with Disaster Condition via OAM based on operator policy and the request by the government agencies.

For the Disaster Roaming, the AUSF shall check the local configuration and, if allowed, the AUSF sends Nudm\_UEAuthentication\_Get Request to the UDM.

The Nudm\_UEAuthentication\_Get Request sent from AUSF to UDM includes the following information:

- SUCI or SUPI;

- the serving network name;

- if received from SEAF, Disaster Roaming service indication;

Upon reception of the Nudm\_UEAuthentication\_Get Request, the UDM shall invoke SIDF if a SUCI is received. SIDF shall de-conceal SUCI to gain SUPI before UDM can process the request.

Based on SUPI, the UDM/ARPF shall choose the authentication method.

NOTE 3: The Nudm\_UEAuthentication\_Get Response in reply to the Nudm\_UEAuthentication\_Get Request and the Nausf\_UEAuthentication\_Authenticate Response message in reply to the Nausf\_UEAuthentication\_Authenticate Request message are described as part of the authentication procedures in clause 6.1.3.

For the Disaster Roaming, the UDM shall check the local configuration and, if allowed, the UDM proceeds with the chosen authentication method.

\*\*\* END CHANGES \*\*\*