**3GPP TSG-SA3 Meeting #220 S3-250351**

Athens, Greee, 17 – 21 February 2025

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** | **2077** | **rev** | **1** | **Current version:** | **19.1.0** |  |
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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:***  | Authorization of a service request when the discovery is delegated to the target PLMN |
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| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** | TEI19, TEI19\_NFsel\_by\_tPLMN |  | ***Date:*** | 2024-11-15 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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:*** | In scenarios where NFc and NFp pertain to different domains (e.g. different PLMNs, NPNs, or different regional organizations in a same PLMN) and using Indirect Communication with Delegated Discovery, the operator (or organization) of the target domain may prefer to perform the discovery and selection of the NFp in the target domain, e.g. for the following reasons:* to avoid disclosing information about candidate NFp that may be sensitive or that changes frequently (e.g. load and capacity info);
* to enable the operator of the target domain to deploy its own discovery/selection policies, independently from NF implementations in other domains;
* because SCPs in the target domain have the best knowledge about candidate NFp instances and sets, incl. load and capacity info, NF service status, etc.

SA#103 approved a Rel-19 WID on NF discovery and selection by target PLMN (TEI19\_NFsel\_by\_tPLMN), see [SP-240490](https://www.3gpp.org/ftp/Information/WI_Sheet/SP-240490.zip), with the objective to enable, for 5GC, the target PLMN/domain to perform the target NF producer selection based on target operator's policy, using indirect communication with or without delegated discovery (in the latter case, when the request indicates the NF set, the selection of the target NF instance in the set is delegated to the SCP of the target domain).Corresponding stage 2 requirements have been approved at SA#104 ([S2-2407125](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_163_Jeju_2024-05/Docs/S2-2407125.zip) to 23.501, [S2-2407356](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_163_Jeju_2024-05/Docs/S2-2407356.zip) to 23.502) and resulted in the following CRs of stage 3.

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| [**C4-243186**](https://www.3gpp.org/ftp/tsg_ct/WG4_protocollars_ex-CN4/TSGCT4_124_Maastricht/Docs/C4-243186.zip) | Indirect communication with or without delegated discovery between different PLMNs with possible NF selection at target PLMN | [**Rel-19**](https://portal.3gpp.org/desktopmodules/Release/ReleaseDetails.aspx?releaseId=194)[**29.500**](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3338) |
| [**C4-243617**](https://www.3gpp.org/ftp/tsg_ct/WG4_protocollars_ex-CN4/TSGCT4_124_Maastricht/Docs/C4-243617.zip) | NF discovery and selection by target PLMN | [**Rel-19**](https://portal.3gpp.org/desktopmodules/Release/ReleaseDetails.aspx?releaseId=194)[**29.510**](https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3345) |

29.573 holds a place holder section on authorization of NF service access when for a service request the discovery is delegated to the target PLMN. Details will be captured in 33.501, while 29.573 can then reference them.The CR aims to provide the missing parts in 33.501. |
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| ***Summary of change:*** | Providing the details of access token request and service request for the different cases when the target PLMN has discovered selected the NF instance/service instance or NF Set. |
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| ***Consequences if not approved:*** | Security details are missing.  |
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| ***Clauses affected:*** | 13.4.1.2.0 (new), 13.4.1.X (new), 13.4.1.X.1 (new), 13.4.1.X.2 (new), 13.4.1.X.2.1 (new), 13.4.1.X.2.2 (new), 13.4.1.X.3 (new) |
|  |  |
|  | **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:*** | 13.4.1.X -> 13.4.1.5 |
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| ***This CR's revision history:*** | **S3-244918** |

\*\*\*\*\* START OF CHANGES

#### 13.4.1.2 Service access authorization in roaming scenarios

##### 13.4.1.2.0 General

The clause describes service access authorization in roaming scenarios without SCP involvement. The service access authorization in roaming to support indirect communication is described in clause 13.4.1.X.

\*\*\*\*\* NEXT CHANGE

#### 13.4.1.X Service access authorization in roaming scenarios in indirect communication scenarios

##### 13.4.1.X.1 General

This clause specifies specific requirements to support indirect communication with or without delegated discovery between different PLMNs and, in case of delegated discovery, with possible NF selection at target PLMN, as specified in clause 6.3.1 of 3GPP TS 23.501 [2] and clause 4.17.10a of 3GPP TS 23.502 [8].

The terms "source PLMN" and "target PLMN" throughout this clause refer respectively to the PLMN originating the request (i.e. the PLMN of the NF Service Consumer) and the PLMN receiving/serving the request (i.e. the PLMN of the NF Service Producer). vNRF refers to the NRF in the source PLMN and hNRF refers to the NRF in the target PLMN.

The OAuth 2.0 roles for roaming are described in clause 13.4.1.2.1.

##### 13.4.1.X.2 Authorization for indirect communication without delegated discovery procedure

##### 13.4.1.X.2.1 With mutual authentication between NF Service Consumer and NRF at the transport layer

The procedure of access token request and service request as specified in clause13.4.1.3.1.1 applies with the vNRF-hNRF communication as specified in clause 13.2.1.2.2.

##### 13.4.1.X.2.2 Without mutual authentication between NF Service Consumer and NRF at the transport layer

In case of selection of the target NF by the SCP in the source PLMN, the procedure of access token request and service request as specified in clause13.4.1.3.1.2 applies with the vNRF-hNRF communication as specified in clause 13.2.1.2.2.

In case of selection of the target NF by the SCP of the target PLMN, the SCP of the source PLMN sends a service request without access token to the target PLMN's SCP, which then requests the access token from hNRF. After receiving an access token, the SCP of the target PLMN sends a service request to the selected NF Instance or NF Service Instance. The SCP in the target PLMN forwards the service response via the SCP in the source PLMN to the respective NF Service Consumer.

##### 13.4.1.X.3 Authorization for indirect communication with delegated discovery procedure

In case of selection of the target NF by the SCP in the source PLMN, the procedure of access token request and service request as specified in clause13.4.1.3.2 applies with the vNRF-hNRF communication as specified in clause 13.2.1.2.2.

In case of selection of the target NF by the SCP of the target PLMN, the SCP of the source PLMN sends a service request without access token to the target PLMN's SCP as described in step 7 of Figure 4.17.10a-1 in 3GPP TS 23.502 [X]. The SCP of the target PLMN requests an access token from hNRF and if successful, the SCP of the target PLMN forwards the service request to the selected NF Instance or NF Service Instance. A service response is provided via the SCP in the source PLMN to the respective NF Service Consumer.

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