**3GPP TSG-SA3 Meeting #101-e *draft\_S3-202883-r7***

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **2** | **Current version:** |  |  |
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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:***  |  |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell, Ericsson, Mavenir, Huawei, HiSilicon |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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 authorization for indirect communication with delegated discovery procedure, the SCP is requesting NRF for the authorization token before forwarding NFc’s service request to NFp. Thus, unless the SCP caches the access tokens, the SCP needs to re-ask a new access token to the NRF for every request, even for requests targeting an already created resource for which an access token had already been obtained, which causes signalling overhead and latency.Revision 1: In SA3#100e in addition to S3-201802 (Nokia), also a proposal by Ericsson was provided (S3-201924), which addresses the case that the token is not valid anymore. Both proposals are combined. |
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| ***Summary of change:*** | Enable to return access token from SCP to NFc to avoid SCP re-asking a new access token at every request targeting a resource: When SCP is requesting for NFc a service from the same NFp it may re-use a previously issued token within its validity time. Thus, it is proposed that SCP returns the access token with the service response to NFc. If NFc then asks again for the same resource and the token is still valid, NFc can attach the token and SCP can forward the request to NFp without the need of requesting a new authorization token from NRF. This can also be used in the case of access token requested for an NF type (not a specific NF Set / NF instance id). Further, NFc could also provide the same access token for a request creating a new resource (e.g; when access token is obtained for an NF type).Revision 1: Including S3-201924 reusage of access token request parameters with additional clarification, i.e. make clear that for subsequent request the access token request parameters should also be sent from SCP to NFc during the servicer response (step 9). |
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| ***Consequences if not approved:*** | SCP is re-asking NRF for a new access token at every service request targeting the same resource. |
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| ***Clauses affected:*** | 13.4.1.3.2 |
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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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | S3-202883, S3-201802 |

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

##### 13.4.1.3.2 Authorization for indirect communication with delegated discovery procedure

This clause covers the scenario where the NF Service Consumer use the SCP to discover and select the NF Service Producer instance that can process the service request.



Figure 13.4.1.3.2-1: Authorization and service invocation procedure, for indirect communication with delegated discovery

1. The NF Service Consumer sends a service request to the SCP. The service request may include the NF Service Consumer CCA as defined in clause 13.3.8. The NF Service Consumer may include an access token in the service request if it has received an access token in a previous service response.

NOTE: Inclusion of access token can be useful for SCP deployed as a standalone network entity.

If a previously received access token has expired, the NF Service Consumer may include discovery parameters as specified in TS 29.500 [74] clause 5.2.3.2.7 in the service request.

2. The SCP may perform a service discovery with the NRF. If NF Service Consumer has included an access token in step 1, or if the SCP has a cached granted access token, then SCP may reuse the access token and proceeds to step 6.

3. The SCP sends an access token request (Nnrf\_AccessToken\_Get Request) to the NRF. The access token request includes parameters as defined in clause 13.4.1.1. The access token request may include the NF Service Consumer's CCA if received in Step 1. If the SCP has received discovery parameters in Step 1, the SCP may use the received discovery parameters to infer the input parameters for the access token request.

4. The NRF authenticates the NF Service Consumer using one of the methods described in clause 13.3.1.2. If cNF authentication is successful and the NF Service Consumer is authorized based on the NRF policy, the NRF issues an access token as described in clause 13.4.1.1. The NRF uses the NF Service Consumer instance ID as the subject of the access token.

5. The NRF sends the access token to the SCP in an access token response (Nnrf\_AccessToken\_Get Response).

6. The SCP sends the service request to the NF Service Producer. The service request includes an access token (i.e. received in Step 1, received in Step 5, or previously cached), and may include the NF Service Consumer CCA if received in Step 1.

7. The NF Service Producer authenticates the NF Service Consumer by one of the methods described in clause 13.3.2.2 and if successful, it validates the access token as described in clause 13.4.1.1.

8. If the validation of the access token is successful, the NF Service Producer sends the service response to the SCP.

9. The SCP forwards the service response to the NF Service Consumer. The SCP may include the access token in the service response to NF Service Consumer for possible re-use in subsequent service requests.

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