**3GPP TSG-CT WG4 Meeting #103-eC4-212xyz**

**E-Meeting, 14th – 23rd April 2021 (was C4-212102)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.526** | **CR** | **0020** | **rev** | **1** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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:*** | SUPI in Notifications from NSSAF | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc17 | | | | |  | ***Date:*** | | | 2021-03-25 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The AMF uses the SUPI as a primary identity of the user context of the UE, so in order to facilitate the reception of notifications from the NSSAAF, it is useful to include the SUPI in the payload of such notifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the supi attribute to the SliceAuthReauthNotification and SliceAuthRevocNotification data types. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The AMF does not handle the notifications from NSSAAF in an efficient manner. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.2.3.1, 5.2.2.4.1, 6.1.6.1, 6.1.6.2.6, 6.1.6.2.7, A.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 introduces backwards-compatible corrections to the TS29526\_Nnssaaf\_NSSAA.yaml API | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

##### 5.2.2.3.1 General

The Re-Authentication Notification service operation shall be used by the NSSAAF to notify the AMF to re-initiate slice-specific authentication and authorization for a given UE, as specified in clause 4.2.9.3 of 3GPP TS 23.502 [3], and clause 16.4 of 3GPP TS 33.501 [8].

The NSSAAF shall notify the NF Service Consumer (i.e. the AMF) by using the HTTP POST method as shown in Figure 5.2.2.3.1-1.



Figure 5.2.2.3.1-1: Re-authentication Notification

1. The NSSAAF shall send a POST request to the callback URI used to receiving re-authentication notification, which is either provided by the NF Service Consumer (i.e. the AMF), or retrieved from the AMF profile stored in the NRF.

The HTTP payload body of the POST request shall contain the SliceAuthReauthNotification data structure, within which:

- the notificationType set to the SliceAuthNotificationType of "SLICE\_RE\_AUTH";

- the gpsi set to the GPSI of the given UE required to be re-authenticated;

- the snssai set to the S-NSSAI required to be re-authenticated;

- the supi set to the SUPI of the given UE required to be re-authenticated.

NOTE: The NSSAAF can obtain the SUPI of the UE in the response of a previous Nudm\_UECM\_Get used by the NSSAAF to retrieve the AMF ID.

2a. On success, "204 No Content" shall be returned and the payload body of the POST response shall be empty.

After responding the request, the NF Service Consumer (i.e. the AMF) shall send NAS message to the UE to trigger re-authentication and re-authorization for the given slice.

If Slice-Specific Authentication and Authorization is triggered by the AAA Server as described in clause 4.2.9.3 of 3GPP TS 23.502 [3], the AMF shall set "status" attribute for the given slice listed in "nssaaStatusList" attribute to "PENDING" (See 3GPP TS 29.518 [16]).

2b. On failure or redirection, one of the HTTP status code listed in Table 6.1.7.3-1 shall be returned. If the NSSAAF is not able to handle the request, but knows that another NSSAAF is able to handle it, it shall reply with an HTTP 3xx redirect error response pointing to the URI of the new NSSAAF. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.7.3-1.

If slice-specific re-authentication and re-authorization finally fails, and there are PDU sessions previously established corresponding to the S-NSSAIs required to be re-authenticated, the AMF should trigger the release of those PDU sessions, if the failure is not due to UE is unreachable.

#### 

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

##### 5.2.2.4.1 General

The Revocation Notification service operation shall be used by the NSSAAF to notify the AMF to revoke slice-specific authentication and authorization result, as specified in clause 4.2.9.4 of 3GPP TS 23.502 [3], and clause 16.5 of 3GPP TS 33.501 [8], and may trigger the AMF to release the corresponding PDU sessions associated to the indicated slice.

The NSSAAF shall notify the NF Service Consumer (i.e. the AMF) by using the HTTP POST method as shown in Figure 5.2.2.4.1-1.



Figure 5.2.2.4.1-1: Revocation Notification

1. The NSSAAF shall send a POST request to the revocation notification callback URI, which is either provided by the NF Service Consumer (i.e. the AMF), or retrieved from the AMF profile stored in the NRF.

The HTTP payload body of the POST request shall contain the SliceAuthRevocNotification data structure, within which:

- the notificationType set to the SliceAuthNotificationType of "SLICE\_REVOCATION";

- the gpsi set to the GPSI of the given UE for whom the slice-specific authorization revocation is required;

- the snssai set to the S-NSSAI for which the slice-specific authorization revocation is required;

- the supi set to the SUPI of the given UE for whom the slice-specific authorization revocation is required.

NOTE: The NSSAAF can obtain the SUPI of the UE in the response of a previous Nudm\_UECM\_Get used by the NSSAAF to retrieve the AMF ID.

2a. On success, "204 No Content" shall be returned and the payload body of the POST response shall be empty.

On receiving the request, the NF Service Consumer (i.e. the AMF) shall revoke the slice-specific authentication and authorization result for the given UE. If there is PDU session associated to the given slice, the AMF shall trigger the PDU session release to the SMF, with appropriate cause value.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.1.7.3-1 shall be returned. If the NSSAAF is not able to handle the request, but knows that another NSSAAF is able to handle it, it shall reply with an HTTP 3xx redirect error response pointing to the URI of the new NSSAAF. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.7.3-1.

If there are PDU sessions previously established corresponding to the S-NSSAIs required to be revoked, the AMF shall trigger the release of those PDU sessions.

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

#### 6.1.6.1 General

This clause specifies the application data model supported by the API.

Table 6.1.6.1-1 specifies the data types defined for the Nnssaaf service based interface protocol.

Table 6.1.6.1-1: Nnssaaf specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| SliceAuthInfo | 6.1.6.2.2 | Contains the GPSI, S-NSSAI, EAP ID Response, etc. |  |
| SliceAuthContext | 6.1.6.2.3 | Contains the information of the resource created for slice-specific authentication and authorization. |  |
| SliceAuthConfirmationData | 6.1.6.2.4 | Contains the EAP message from the UE for EAP process. |  |
| SliceAuthConfirmationResponse | 6.1.6.2.5 | Contains the slice-specific authentication and authorization result from the NSSAAF to the UE. |  |
| SliceAuthReauthNotification | 6.1.6.2.6 | Contains the re-authentication notification for slice-specific authentication and authorization. |  |
| SliceAuthRevocNotification | 6.1.6.2.7 | Contains the revocation notification for slice-specific authentication and authorization. |  |
| SliceAuthCxtId | 6.1.6.3.2 | Contains the resource ID of slice authentication context. |  |
| EapMessage | 6.1.6.3.2 | Contains the string formatted EAP message. |  |
| SliceNotificationType | 6.1.6.3.3 | Notification type of slice-specification authentication and authorization. |  |

Table 6.1.6.1-2 specifies data types re-used by the Nnssaaf service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nnssaaf service based interface.

Table 6.1.6.1-2: Nnssaaf re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| ProblemDetails | 3GPP TS 29.571 [10] | Common Data Type used in response bodies |  |
| Gpsi | 3GPP TS 29.571 [10] | GPSI |  |
| Snssai | 3GPP TS 29.571 [10] | S-NSSAI |  |
| AuthStatus | 3GPP TS 29.571 [10] | Slice Authentication Status |  |
| Supi | 3GPP TS 29.571 [10] | SUPI of the UE |  |

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

##### 6.1.6.2.6 Type: SliceAuthReauthNotification

Table 6.1.6.2.6-1: Definition of type SliceAuthReauthNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notificationType | SliceAuthNotificationType | M | 1 | Indicate the type of slice authentication notification. |  |
| gpsi | Gpsi | M | 1 | Contains the GPSI of the UE. |  |
| snssai | Snssai | M | 1 | Contains the S-NSSAI for authentication. |  |
| supi | Supi | C | 0..1 | This IE should be sent by the NSSAAF to the AMF, if available. |  |

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

##### 6.1.6.2.7 Type: SliceAuthRevocNotification

Table 6.1.6.2.7-1: Definition of type SliceAuthRevocNotification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notificationType | SliceAuthNotificationType | M | 1 | Indicate the type of slice authentication notification. |  |
| gpsi | Gpsi | M | 1 | Contains the GPSI of the UE. |  |
| snssai | Snssai | M | 1 | Contains the S-NSSAI for authentication. |  |
| supi | Supi | C | 0..1 | This IE should be sent by the NSSAAF to the AMF, if available. |  |

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

## A.2 Nnssaaf\_NSSAA API

*(... text not shown for clarity ...)*

SliceAuthReauthNotification:

type: object

properties:

notifType:

$ref: '#/components/schemas/SliceAuthNotificationType'

gpsi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

snssai:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

supi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

required:

- notifType

- gpsi

- snssai

SliceAuthRevocNotification:

type: object

properties:

notifType:

$ref: '#/components/schemas/SliceAuthNotificationType'

gpsi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

snssai:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

supi:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

required:

- notifType

- gpsi

- snssai

*(... text not shown for clarity ...)*

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