**3GPP TSG-CT WG3 Meeting #123-eC3-224125**

**E-Meeting, 18th – 26th August 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.535** | **CR** | **0020** | **rev** | **-** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Application errors reference update in the tables defining methods on the resources for Naanf\_AKMA API | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AKMA-CT | | | | |  | ***Date:*** | | | 2022-08-11 |
|  |  | | | |  | |  | | |  |
| ***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 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The normative table NOTEs that refer to application errors in the tables defining the methods on the resources defined for a particular API are redundant and may introduce confusion/misalignments with the service description clauses.  This update is proposed to make it consistent with other TS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | This CR proposes to:   * Update tables 5.1.4.4.2-2 to remove the existing tables NOTEs related to application errors and add a new NOTE referring to clause 5.1.7.3 for failure cases description and related update in Open API. * Added 403 Frobidden response code with ProblemDetails, that was missing in the table 5.1.4.3.2-2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | * Inconsistency in the specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1.4.3.2, 5.1.4.4.2, 5.1.7.3, 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 has impact on OpenAPI Naanf\_AKMA API | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* \* Start of changes \* \* \* \*

##### 5.1.4.3.2 Operation Definition

This operation shall support the response data structures and response codes specified in tables 5.1.4.3.2-1 and 5.1.4.3.2-2.

Table 5.1.4.3.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| AkmaAfKeyRequest | M | 1 | Parameters to request to retrieve AKMA Application Key information. |

Table 5.1.4.3.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| AkmaAfKeyData | M | 1 | 200 OK | The requested AKMA Application Key information was returned successfully. (NOTE 2) |
| n/a |  |  | 204 No Content | If the requested data does not exist, the AAnF shall respond with "204 No Content". |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during retrieval. The response shall include a Location header field containing an alternative URI of the resource located in an alternative AAnF (service) instance. |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during retrieval. The response shall include a Location header field containing an alternative URI of the resource located in an alternative AAnF (service) instance. |
| ProblemDetails | O | 0..1 | 403 Forbidden | (NOTE 3) |
| NOTE 1: The manadatory HTTP error status code for the POST method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.  NOTE 2: For the "AkmaAfKeyData" data structure used in the current release of this specification, the "supi" attribute shall be included and the “gpsi” attribute is not applicable.  NOTE 3: Failure cases are described in clause 5.1.7.3 | | | | |

Table 5.1.4.3.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative AAnF (service) instance. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target AAnF (service) instance towards which the request is redirected. |

Table 5.1.4.3.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative AAnF (service) instance. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target AAnF (service) instance towards which the request is redirected. |

\* \* \* \* Next changes \* \* \* \*

##### 5.1.4.4.2 Operation Definition

This operation shall support the response data structures and response codes specified in tables 5.1.4.4.2-1 and 5.1.4.4.2-2.

Table 5.1.4.4.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| CtxRemove | M | 1 | Parameters to request to delete the AKMA context for the UE. |

Table 5.1.4.4.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| n/a |  |  | 204 No Content | Successful case: The AKMA context matching the "CtxRemove" in the request body was deleted, the AAnF shall respond with "204 No Content". |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during remove procedure. The response shall include a Location header field containing an alternative URI of the resource located in an alternative AAnF (service) instance. |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during remove procedure. The response shall include a Location header field containing an alternative URI of the resource located in an alternative AAnF (service) instance. |
| ProblemDetails | O | 0..1 | 404 Not Found | (NOTE 2) |
| NOTE 1: The manadatory HTTP error status code for the POST method listed in Table 5.2.7.1-1 of 3GPP TS 29.500 [4] also apply.  NOTE 2: Failure cases are described in clause 5.1.7.3 | | | | |

Table 5.1.4.4.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative URI of the resource located in an alternative AAnF (service) instance. |
| 3gpp-Sbi-Target-Nf-Id | String | O | 0..1 | Identifier of the target AAnF (service) instance towards which the request is redirected. |

Table 5.1.4.4.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative AAnF (service) instance. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target AAnF (service) instance towards which the request is redirected. |

\* \* \* \* Next changes \* \* \* \*

#### 5.1.7.3 Application Errors

The application errors defined for the Naanf\_AKMA service are listed in Table 5.1.7.3-1.

Table 5.1.7.3-1: Application errors

|  |  |  |
| --- | --- | --- |
| Application Error | HTTP status code | Description |
| K\_AKMA\_NOT\_PRESENT | 403 Forbidden | Indicates that the KAKMA identified by the A-KID provided in the AKMA Application Key retrieval request body is not present at the AAnF. |
| AKMA\_CONTEXT\_NOT\_FOUND | 404 Not Found | Indicates that the AKMA context to be deleted indicated by the "CtxRemove" Data type in the request body is not found. |

\* \* \* \* Next changes \* \* \* \*

# A.2 Naanf\_AKMA API

openapi: 3.0.0

info:

title: 3gpp-akma

version: 1.0.0

description: |

API for Naanf\_AKMA.

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externalDocs:

description: 3GPP TS 29.535 V17.5.0; 5G System; AKMA Anchor Services.

url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.535/'

security:

- {}

- oAuth2ClientCredentials:

- naanf-akma

servers:

- url: '{apiRoot}/naanf-akma/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501.

paths:

/register-anchorkey:

post:

summary: Store AKMA related key material.

operationId: RegisterAKMAKey

tags:

- Register the AKMA related key material

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: The requested information was returned successfully.

content:

application/json:

schema:

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

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/retrieve-applicationkey:

post:

summary: Request to retrieve AKMA Application Key information.

operationId: GetAKMAAPPKeyMaterial

tags:

- Retrieve the AKMA Application key material (Collection)

requestBody:

required: true

content:

application/json:

schema:

$ref: 'TS29522\_AKMA.yaml#/components/schemas/AkmaAfKeyRequest'

responses:

'200':

description: The requested information was returned successfully.

content:

application/json:

schema:

$ref: 'TS29522\_AKMA.yaml#/components/schemas/AkmaAfKeyData'

'204':

description: No Content (The requested AKMA Application material does not exist.)

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/remove-context:

post:

summary: Request to remove the AKMA related key material.

operationId: RemoveContext

tags:

- Remove the AKMA Application key material (deletion)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content (The AKMA context for the UE has been removed successfully.)

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404' '411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

naanf\_akma: Access to the Naanf\_AKMA API

schemas:

AkmaKeyInfo:

description: Represents AKMA related key material.

type: object

properties:

suppFeat:

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

supi:

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

aKId:

$ref: 'TS29522\_AKMA.yaml#/components/schemas/AKId'

kAkma:

type: string

required:

- supi

- aKId

- kAkma

CtxRemove:

description: Parameters to request to delete the AKMA context for the UE.

type: object

properties:

supi:

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

\* \* \* \* End of changes \* \* \* \*