**3GPP TSG CT WG3 Meeting #135 *C3-243560***

**Hyderabad, IN, 27 - 31 May, 2024 (Revision of C3-243301)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.591** | **CR** | **0173** | **rev** | **3** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | Add GPSI and Application Layer ID mapping information | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Xiaomi, Nokia? | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | Ranging\_SL | | | | |  | ***Date:*** | | | 2024-05-16 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | TS 23.586 clause 4.3.7 defined NEF provide the GMLC with the GPSI of the UE based on Application Layer ID mapping information stored in UDR application data. Also provide the GMLC with the Application Layer ID based on GPSI of the UE mapping information stored in UDR application data. Hence needs to be implented in this specification.  SA2 has the related LS reply for LS out S2-2405863 (C3-242616) and TS 23.502 CR 4812 adding GMLC as service consumer to retrieve Ranging\_SL UE Id mapping information in Nnef\_UEId API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding GMLC as service consumer and adding new service operation for GMLC to get GPSI and Application Layer ID mapping information. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Not implemented stage 2 requirement on NEF provide the GMLC with GPSI and Application Layer ID mapping information. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.7.2.3(new), 5.6.4.3(new), 5.6.6.1, 5.6.6.2.4(new), 5.6.7.3, A.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 23.502 CR 4812 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces backwards compatible feature in the OpenAPI file of Nnef\_UEId API.  The Nnef\_UEId API service descriptions covering this new service operation is updated in CR 0182. The Nnef\_UEId API security clause 5.6.9 and custom operations overiew clause 5.6.4.1 covering this new custom operation is updated in CR 0183. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR’s revision history:*** | | **Rev 2 provides additional update:**  Adding the related TS 23.502 CR 4812 in cover page and update the service operation naming and descriptions accordingly. Also update re-used data type, error handling and editorial changes.  **Rev 3 provides additional update:**  Updated upon the service operation naming changed in the agreed TS 23.502 CR 4812. Removed 204 response code and application errors for future discussion. | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

#### 4.7.2.2 Nnef\_UEId\_Get service operation

\*\*\* 2nd Change \*\*\*

##### 4.7.2.2.3 UE ID Mapping Information Retrieval

Figure 4.7.2.2.3-1 depicts a scenario where the service consumer sends a request to the NEF to request UE ID mapping information (see also 3GPP°TS°23.502°[3]).



Figure 4.7.2.2.3-1: UE ID Mapping Information Retrieval

1. In order to request the retrieval of UE ID mapping information, the service consumer shall send an HTTP POST request to the NEF targeting the URI of the corresponding custom operation (i.e., "UEIDMappingInfoRetrieval"), with the request body including the MapUeIdInfo data structure.

2a. Upon success, the NEF shall respond with either:

- an HTTP "200 OK" status code with the response body containing the requested UE ID mapping information within the MapUeIdInfo data structure; or

- an HTTP "204 No Content" status code in case no UE ID mapping information exists for the received input parameters.

2b. On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the HTTP POST response body, as specified in clause 5.6.7.

\*\*\* 2nd Change \*\*\*

#### 5.6.4.3 Operation: UEIDMappingInfoRetrieval

##### 5.6.4.3.1 Description

This custom operation allows the NF service consumer to retrieve UE ID mapping information from the NEF.

##### 5.6.4.3.2 Operation Definition

This operation shall support the request data structures specified in table 5.6.4.3.2-1 and the response data structures and response codes specified in table 5.6.4.3.2-2.

Table 5.6.4.3.2-1: Data structures supported by the POST Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MapUeIdInfo | M | 1 | Contains the parameters to request to retrieve the UE ID mapping information. |

Table 5.6.4.3.2-2: Data structures supported by the POST Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  Codes | Description |
| MapUeIdInfo | M | 1 | 200 OK | Successful case. The requested UE ID mapping information is returned. |
| n/a |  |  | 204 No Content | Successful case. There is no UE ID mapping information corresponding to the provided input parameters. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection.  (NOTE 2) |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection.  (NOTE 2) |
| NOTE 1: The mandatory 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: The RedirectResponse data structure may be provided by an SCP (cf. clause 6.10.9.1 of 3GPP TS 29.500 [4]). | | | | |

Table 5.6.4.3.2-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | Contains an alternative URI of the resource located in an alternative NEF (service) instance towards which the request is redirected.  For the case where the request is redirected to the same target via a different SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [4]. |
| 3gpp-Sbi-Target-Nf-Id | String | O | 0..1 | Contains the identifier of the NEF (service) instance towards which the request is redirected. |

Table 5.6.4.3.2-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains an alternative URI of the resource located in an alternative NEF (service) instance towards which the request is redirected.  For the case where the request is redirected to the same target via a different SCP, refer to clause 6.10.9.1 of 3GPP TS 29.500 [4]. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Contains the identifier of the NEF (service) instance towards which the request is redirected. |

\*\*\* 3rd Change \*\*\*

#### 5.6.6.1 General

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

Table 5.6.6.1-1 specifies the data types defined for the Nnef\_UEId service-based interface protocol.

Table 5.6.6.1-1: Nnef\_UEId specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| MapUeIdInfo | 5.6.6.2.4 | Contains the UE ID mapping information. |  |
| UeIdReq | 5.6.6.2.2 | Contains the UE ID request information. |  |
| UeIdInfo | 5.6.6.2.3 | Contains the UE ID information. |  |
|  |  |  |  |

Table 5.6.6.1-2 specifies data types re-used by the Nnef\_UEId 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 Nnef\_UEId service based interface.

Table 5.6.6.1-2: Nnef\_UEId re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| ApplicationlayerId | 3GPP TS 29.571 [16] | Identifies an Application Layer ID. |  |
| Gpsi | 3GPP TS 29.571 [16] | Identifies the GPSI of a UE. |  |
| Supi | 3GPP TS 29.571 [16] | Identifies the SUPI of a UE. |  |
| SupportedFeatures | 3GPP TS 29.571 [16] | Indicates the features supported. |  |

\*\*\* 4th Change \*\*\*

##### 5.6.6.2.4 Type: MapUeIdInfo

Table 5.6.6.2.4-1: Definition of type MapUeIdInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| appLayerId | ApplicationlayerId | C | 0..1 | Identifies a Ranging/Sidelink Positioning-enabled UE within the context of a specific application.  This attribute shall be present in the UE ID mapping information retrieval response only if the "gpsi" attribute was present in the corresponding request.  (NOTE) |  |
| gpsi | Gpsi | C | 0..1 | Contains the GPSI of a UE.  This attribute shall be present in the UE ID mapping information retrieval response only if the "appLayerId" attribute was present in the corresponding request.  (NOTE) |  |
| NOTE: These attributes are mutually exclusive. Either one of them shall be present. | | | | | |

\*\*\* 5th Change \*\*\*

# A.7 Nnef\_UEId API

openapi: 3.0.0

info:

title: Nnef\_UEId

version: 1.0.0-alpha.1

description: |

NEF Traffic Correlation Service.

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externalDocs:

description: >

3GPP TS 29.591 V18.4.0; 5G System; Network Exposure Function Southbound Services; Stage 3.

url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.591/

servers:

- url: '{apiRoot}/nnef-ueid/v1'

variables:

apiRoot:

default: https://example.com

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

security:

- {}

- oAuth2ClientCredentials:

- nnef-ueid

paths:

/fetch:

post:

summary: fetch the Internal UE Identifier for roaming UE(s).

operationId: FetchUEId

tags:

- UE ID (Document)

security:

- {}

- oAuth2ClientCredentials:

- nnef-ueid

- oAuth2ClientCredentials:

- nnef-ueid

- nnef-ueid:fetch:read

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: The requested information was returned successfully.

content:

application/json:

schema:

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

'204':

description: No Content (The requested Internal UE Identifier does not exist.)

'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'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

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

default:

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

/get-ueid-mapping:

post:

summary: Retrieve the UE ID mapping information.

operationId: UEIDMappingInfoRetrieval

tags:

- UE ID Mapping Info Retrieval Request

security:

- {}

- oAuth2ClientCredentials:

- nnef-ueid

- oAuth2ClientCredentials:

- nnef-ueid

- nnef-ueid:get-ueid-mapping:read

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: Successful case. The requested UE ID mapping information is returned.

content:

application/json:

schema:

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

'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'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'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:

nnef-ueid: Access to the UE ID API

nnef-ueid:fetch:read >

Access to service operation applying to retrieve the internal UE identifier from the

H-NEF for the roaming UE.

nnef-ueid:get-ueid-mapping:read >

Access to service operation applying to retrieve the UE ID .

schemas:

UeIdReq:

description: Contains parameters to request to fetch the Internal UE Identifier.

type: object

properties:

gpsi:

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

required:

- gpsi

UeIdInfo:

description: Contains the UE ID Information.

type: object

properties:

supi:

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

required:

- supi

MapUeIdInfo:

description: >

Contains the UE ID mapping information.

type: object

properties:

appLayerId:

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

gpsi:

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

oneOf:

- required: [appLayerId]

- required: [gpsi]

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