**3GPP TSG-CT WG4 Meeting #97eC4-202xxx**

**E-Meeting, 15th – 24th April 2020 revision of C4-202020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.503** | **CR** | **0377** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | 5G SRVCC Info retrieval | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UDICOM | | | | |  | ***Date:*** | | | 2020-04-17 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | According to 23.632 the Nudm\_MT service shall allow service consumers (e.g. HSS) to retrieve 5G SRVCC Info. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Extend the ProvideUeInfo service operation to allow retrieval of 5G SRVCC Info | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | requirement from stage 2 cannot be implemented | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.8.2.1, 5.8.2.2, 6.7.3.2.3.1, 6.7.6.1, 6.7.6.2.2, 6.7.6.2.x (new), A.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 a backwards compatible addition to  Nudm\_MT API | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 5.8.2.1 Introduction

For the Nudm\_MT service the following service operations are defined:

- ProvideUeInfo

- ProvideLocationInfo

The Nudm\_MT service is used by the HSS to request the UDM to provide terminating access domain selection information and/or user state and/or 5GSRVCCInfo by means of the ProvideUeInfo service operation.

It is also used by the HSS to request the UE's Location Information in 5GC by means of the ProvideLocationInfo service operation.

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

#### 5.8.2.2 ProvideUeInfo

##### 5.8.2.2.1 General

The following procedure using the ProvideUeInfo service operation is supported:

- UE Information Retrieval

##### 5.8.2.2.2 UE Information Retrieval

Figure 5.8.2.2.2-1 shows a scenario where the NF service consumer (HSS) retrieves domain selection information and/or user state and/or 5GSRVCCInfo for a UE from the UDM. The request contains the UE's identity (supi).



Figure 5.8.2.2.2-1: NF service consumer requesting domain selection information

1. The NF service consumer sends a GET request to the UDM to query the UeInfo. Query parameters indicate that TadsInfo and/or UserState and/or 5GSRVCCInfo is requested.

2a. The UDM responds with "200 OK" with the message body containing the requested information.

2b. If there is no valid subscription data for the UE, HTTP status code "404 Not Found" shall be returned and additional error information should be included in the response body (in the "ProblemDetails" element).

On failure, the appropriate HTTP status code indicating the error shall be returned and appropriate additional error information should be returned in the GET response body.

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

###### 6.7.3.2.3.1 GET

This method shall support the URI query parameters specified in table 6.7.3.2.3.1-1.

Table 6.7.3.2.3.1-1: URI query parameters supported by the GET method on this resource

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | | Data type | | P | | Cardinality | | Description | |
| fields | array(string) | | M | | 1..N | | The " fields " query parameter contains the pointers of the attribute(s) to be retrieved. See attribute names of type UeInfo. | |
| supported-features | | SupportedFeatures | | O | | 0..1 | | see 3GPP TS 29.500 [4] clause 6.6 | |

This method shall support the request data structures specified in table 6.7.3.2.3.1-2 and the response data structures and response codes specified in table 6.7.3.2.3.1-3.

Table 6.7.3.2.3.1-2: Data structures supported by the GET Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  |  |

Table 6.7.3.2.3.1-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response  codes | Description |
| UeInfo | M | 1 | 200 OK | Upon success, a response body containing the UeInfo shall be returned. |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be used to convey the following application errors:  - USER\_NOT\_FOUND  - DATA\_NOT\_FOUND |
| NOTE: In addition common data structures as listed in table 6.7.7-1 are supported. | | | | |

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

#### 6.7.6.1 General

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

Table 6.7.6.1-1 specifies the structured data types defined for the Nudm\_MT service API. For simple data types defined for the Nudm\_MT service API see table 6.7.6.3.2-1.

Table 6.7.6.1-1: Nudm\_MT specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| UeInfo | 6.7.6.2.2 |  |
| LocationInfoRequest | 6.7.6.2.3 |  |
| LocationInfoResult | 6.7.6.2.4 |  |
| 5GSrvccInfo | 6.7.6.2.x |  |

Table 6.7.6.1-2 specifies data types re-used by the Nudm\_MT service API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudm\_MT service API.

Table 6.7.6.1-2: Nudm\_MT re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| UeContextInfo | 3GPP TS 29.518 [36] |  |
| Supi | 3GPP TS 29.571 [7] |  |
| 5GsUserState | 3GPP TS 29.518 [36] |  |
| NfInstanceId | 3GPP TS 29.571 [7] | Network Function Instance Identifier |
| PlmnId | 3GPP TS 29.571 [7] | PLMN Identity |
| Ecgi | 3GPP TS 29.571 [7] | EUTRAN cell identity |
| Ncgi | 3GPP TS 29.571 [7] | NR cell identity |
| Tai | 3GPP TS 29.571 [7] | Tracking area identity |
| GeographicArea | 3GPP TS 29.572 [34] | Estimate of the location of the UE |
| AgeOfLocationEstimate | 3GPP TS 29.572 [34] | Age Of Location Estimate |
| RatType | 3GPP TS 29.571 [7] | RAT type |
| TimeZone | 3GPP TS 29.571 [7] | Time Zone |
| SupportedFeatures | 3GPP TS 29.571 [7] |  |
| ProblemDetails | 3GPP TS 29.571 [7] |  |
| StnSr | 3GPP TS 29.571 [7] | Session Transfer Number for 5G-SRVCC |
| CMsisdn | 3GPP TS 29.571 [7] | Correlation MSISDN |

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

##### 6.7.6.2.2 Type: UeInfo

Table 6.7.6.2.2-1: Definition of type UeInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| tadsInfo | UeContextInfo | O | 0..1 | See 3GPP TS 29.518 [36] |
| userState | 5GsUserState | O | 0..1 | See 3GPP TS 29.518 [36] |
| 5gSrvccInfo | 5GSrvccInfo | O | 0..1 |  |

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

##### 6.7.6.2.x Type: 5GSrvccInfo

Table 6.7.6.2.x-1: Definition of type 5GSrvccInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| ue5GSrvccCapability | boolean | M | 1 | This IE indicates whether the UE supports 5G SRVCC:  - true: 5G SRVCC is supported by the UE  - false: 5G SRVCC is not supported. |
| stnSr | StnSr | O | 0..1 | Session Transfer Number for 5G-SRVCC |
| cMsisdn | CMsisdn | O | 0..1 | Correlation MSISDN of the UE. |

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

## A.8 Nudm\_MT API

openapi: 3.0.0

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# COMPLEX TYPES:

UeInfo:

type: object

properties:

tadsInfo:

$ref: 'TS29518\_Namf\_MT.yaml#/components/schemas/UeContextInfo'

userState:

$ref: 'TS29518\_Namf\_EventExposure.yaml#/components/schemas/5GsUserState'

5gSrvccInfo:

$ref: '#/components/schemas/5GSrvccInfo'

5GSrvccInfo:

type: object

required:

- ue5GSrvccCapability

properties:

ue5GSrvccCapability:

type: boolean

stnSr:

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

cMsisdn:

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

\*\*\*\*\*\*\*\*\*\*\*\*text not shown for clarity\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \* \* \* End Of Change \* \* \* \*