**3GPP TSG-CT WG4 Meeting #98eC4-203336**

**E-Meeting, 02nd – 12th June 2020**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.503** | **CR** | **0453** | **rev** | **-** | **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:***  | Support of SMSoIP |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | UDICOM |  | ***Date:*** | 2020-05-20 |
|  |  |  |  |  |
| ***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 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | For the scenarios introduced by CR 0019 to TS 23.632, the HSS needs to indicate to UDM the address of the IP-SM-GW handling SMS for a given UE.It is also needed that UDM handles the corresponding flags for MT SMS delivery re-attempt after delivery failure. |
|  |  |
| ***Summary of change:*** | - Define service operations in Nudm\_UECM service to support registration and deregistration of an IP-SM-GW (to be invoked by an HSS).- Define the UNRI flag within the IP-SM-GW context. |
|  |  |
| ***Consequences if not approved:*** | The UDICOM scenarios described in CR 0019 to TS 23.632 (support of SMSoIP in 5G-only deployments) service cannot be implemented. |
|  |  |
| ***Clauses affected:*** | 5.3.2.2.1, 5.3.2.2.x (new), 5.3.2.4.1, 5.3.2.4.x (new), 5.3.2.5.1, 5.3.2.5.x (new), 6.2.3.1, 6.2.3.x (new), 6.2.6.1, 6.2.6.2.x (new), A.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 23.632 CR 0019 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces backwards-compatible changes on the TS29503\_Nudm\_UECM OpenAPI specification. |
|  |  |
| ***This CR's revision history:*** |  |

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

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] 3GPP TS 33.501: "Security Architecture and Procedures for 5G System".

[7] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[8] 3GPP TS 23.003: "Numbering, addressing and identification".

[9] 3GPP TS 29.504: "5G System; Unified Data Repository Services; Stage 3".

[10] 3GPP TS 29.505: "5G System; Usage of the Unified Data Repository Services for Subscription Data; Stage 3".

[11] 3GPP TS 32.255: "Charging management; 5G data connectivity domain charging".

[12] 3GPP TS 32.298: "Charging management; Charging Data Record (CDR) parameter description".

[13] IETF RFC 7540: "Hypertext Transfer Protocol Version 2 (HTTP/2)".

[14] OpenAPI Initiative, "OpenAPI 3.0.0 Specification", <https://github.com/OAI/OpenAPI-Specification/blob/master/versions/3.0.0.md>

[15] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[16] IETF RFC 7807: "Problem Details for HTTP APIs".

[17] IETF RFC 7396: "JSON Merge Patch".

[18] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[19] 3GPP TS 29.510: "Network Function Repository Services; Stage 3".

[20] 3GPP TS 23.122: "Non-Access-Stratum (NAS) functions related to Mobile Station in idle mode".

[21] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[22] 3GPP TS 29.338: "Diameter based protocols to support Short Message Service (SMS) capable Mobile Management Entities (MMEs)"

[23] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[24] 3GPP TS 29.509: "Authentication Server Services; Stage 3".

[25] IETF RFC 7232: "Hypertext Transfer Protocol (HTTP/1.1): Conditional Requests".

[26] IETF RFC 7234: "Hypertext Transfer Protocol (HTTP/1.1): Caching".

[27] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[28] ETSI TS 102 225: "Smart Cards; Secured packet structure for UICC based applications".

[29] IETF RFC 7542: "The Network Access Identifier".

[30] 3GPP TR 21.900: "Technical Specification Group working methods".

[31] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

[32] 3GPP TS 23.632: "User Data Interworking, Coexistence and Migration"

[33] 3GPP TS 29.519: "Policy Data, Application Data and Structured Data for Exposure; Stage 3".

[34] 3GPP TS 29.572: "5G System; Location Management Services; Stage 3".

[35] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

[36] 3GPP TS 29.518: "Access and Mobility Management Services".

[37] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G System (5GS); Stage 2".

[38] 3GPP TS 23.273: "5G System (5GS) Location Services (LCS); Stage 2".

[39] 3GPP TS 29.515: "5G System; Gateway Mobile Location Services; Stage 3".

[40] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[41] IETF RFC 6902: "JavaScript Object Notation (JSON) Patch".

[42] BBF TR-069: "CPE WAN Management Protocol".

[43] BBF TR-369: "User Services Platform (USP)".

[44] 3GPP TS 29.524: "5G System; Cause codes mapping between 5GC interfaces; Stage 3".

[45] 3GPP TS 29.122: "T8 reference point for Northbound APIs".

[46] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".

[47] 3GPP TS 22.071: "Location Services (LCS); Service description; Stage 1".

[zz1] 3GPP TS 29.328: "IP Multimedia (IM) Subsystem Sh interface; Signalling flows and message contents".

[zz2] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

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

#### 5.3.2.2 Registration

##### 5.3.2.2.1 General

The Registration service operation is invoked by a NF that has been selected to provide service to the UE to store related UE Context Management information in UDM.

NF Consumers are AMF for access and mobility management service, SMF for session management services, SMSF providing SMS services and HSS for IP-SM-GW registration in SMSoIP scenarios.

As part of this registration procedure, the UDM authorizes or rejects the subscriber to use the service provided by the registered NF, based on subscription data (e.g. roaming restrictions).

The following procedures using the Registration service operation are supported:

- AMF registration for 3GPP access

- AMF registration for non-3GPP access

- SMF registration

- SMSF registration for 3GPP access

- SMSF registration for non-3GPP access

- IP-SM-GW registration

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

##### 5.3.2.2.x IP-SM-GW registration

Figure 5.3.2.2.x-1 shows a scenario where an HSS sends a request to the UDM to create a new registration of an IP-SM-GW (see also 3GPP TS 23.632 [32] figure 5.5.X.2.1-1 step 2). The request contains the UE's identity (/{ueId}) which shall be a SUPI and the IP-SM-GW registration information.



Figure 5.3.2.2.x-1: IP-SM-GW registration

1. The HSS sends a PUT request to the resource .../{ueId}/registrations/ip-sm-gw, to create an IP-SM-GW registration as present in the message body.

2a. If there was not a prior registration, the UDM responds with "201 Created" with the message body containing a representation of the created IP-SM-GW registration.

2b. If there was a prior registration, the UDM responds with "200 OK" with the message body containing a representation of the updated IP-SM-GW registration.

2c. If the operation cannot be authorized due to e.g UE does not have required subcription data, HTTP status code "403 Forbidden" should be returned including additional error information in the response body (in "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 PUT response body.

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

#### 5.3.2.4 Deregistration

##### 5.3.2.4.1 General

The following procedures using the Deregistration service operation are supported:

- AMF deregistration for 3GPP access

- AMF deregistration for non-3GPP access

- SMF deregistration

- SMSF deregistration for 3GPP access

- SMSF deregistration for non-3GPP access

- IP-SM-GW deregistration

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

##### 5.3.2.4.x IP-SM-GW deregistration

Figure 5.3.2.4.x-1 shows a scenario where the HSS sends a request to the UDM to deregister the IP-SM-GW from the UDM (see also 3GPP TS 23.632 [32] figure 5.5.X.2-2 step 2). The request contains the UE's identity (/{ueId}) which shall be a SUPI.



Figure 5.3.2.4.x-1: IP-SM-GW deregistration

1. The HSS sends a DELETE request to the resource representing the UE's IP-SM-GW registration.

2. The UDM responds with "204 No Content".

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

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

#### 5.3.2.5 Get

##### 5.3.2.5.1 General

The following procedures using the Get service operation are supported:

- Amf3GppAccessRegistration Information Retrieval

- AmfNon3GppAccessRegistration Information Retrieval

- SmfRegistrations Information Retrieval

- SmsfRegistration Information Retrieval for 3GPP Access

- SmsfRegistration Information Retrieval for Non-3GPP Access

- IP-SM-GW Registration Information Retrieval

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

##### 5.3.2.5.x IP-SM-GW Registration Information Retrieval

Figure 5.3.2.5.x-1 shows a scenario where the NF service consumer sends a request to the UDM to retrieve the UE's IP-SM-GW Registration Information. The request contains the UE's identity (/{ueId}) which shall be a SUPI.



Figure 5.3.2.5.x-1: Requesting a UE's IP-SM-GW Registration Information

1. The NF service consumer sends a GET request to the resource representing the UE's IP-SM-GW registration information for 3GPP access.

2. The UDM responds with "200 OK" with the message body containing the UE's IP-SM-GW Registration.

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 \* \* \* \*

#### 6.2.3.1 Overview



Figure 6.2.3.1-1: Resource URI structure of the Nudm\_UECM API

Table 6.2.3.1-1 provides an overview of the resources and applicable HTTP methods.

Table 6.2.3.1-1: Resources and methods overview

|  |  |  |  |
| --- | --- | --- | --- |
| Resource name(Archetype) | Resource URI | HTTP method or custom operation | Description |
| Amf3GppAccessRegistration(Document) | /{ueId}/registrations/amf-3gpp-access | PUT | Update the AMF registration for 3GPP access |
| PATCH | Modify the AMF registration for 3GPP access |
| GET | Retrieve the AMF registration information for 3GPP access |
| AmfNon3GppAccessRegistration(Document) | /{ueId}/registrations/amf-non-3gpp-access | PUT | Update the AMF registration for non 3GPP access |
| PATCH | Modify the AMF registration for non 3GPP access |
| GET | Retrieve the AMF registration information for non 3GPP access |
| SmfRegistrations(Store) | /{ueId}/registrations/smf-registrations | GET | Retrieve the SMF registration information |
| IndividualSmfRegistration(Document) | /{ueId}/registrations/smf-registrations/{pduSessionId} | PUT | Create an SMF registration identified by PDU Session Id |
| DELETE | Delete an individual SMF registration |
| PATCH | Modify an individual SMF Registration |
| Smsf3GppAccessRegistration(Document) | /{ueId}/registrations/smsf-3gpp-access | PUT | Create or Update the SMSF registration |
| DELETE | Delete the SMSF registration for 3GPP access |
| PATCH | Modify the SMSF registration |
| GET | Retrieve the SMSF registration information |
| SmsfNon3GppAccessRegistration(Document) | /{ueId}/registrations/smsf-non-3gpp-access | PUT | Create or Update the SMSF registration for non 3GPP access |
| DELETE | Delete the SMSF registration for non 3GPP access |
| PATCH | Modify the SMSF registration for non 3GPP access |
| GET | Retrieve the SMSF registration information for non 3GPP access |
| IpSmGwRegistration(Document) | /{ueId}/registrations/ip-sm-gw | PUT | Create or Update the IP-SM-GW registration |
| DELETE | Delete the IP-SM-GW registration |
| GET | Retrieve the IP-SM-GW registration information |

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

#### 6.2.3.x Resource: IpSmGwRegistration

##### 6.2.3.x.1 Description

This resource represents the registered IP-SM-GW.

##### 6.2.3.x.2 Resource Definition

Resource URI: {apiRoot}/nudm-uecm/v1/{ueId}/registrations/ip-sm-gw

This resource shall support the resource URI variables defined in table 6.2.3.x.2-1.

Table 6.2.3.x.2-1: Resource URI variables for this resource

|  |  |
| --- | --- |
| Name | Definition |
| apiRoot | See clause 6.2.1 |
| ueId | Represents the Subscription Identifier (SUPI). pattern: "(imsi-[0-9]{5,15}|nai-.+|.+)" |

##### 6.2.3.x.3 Resource Standard Methods

###### 6.2.3.x.3.1 PUT

This method shall support the URI query parameters specified in table 6.2.3.x.3.1-1.

Table 6.2.3.x.3.1-1: URI query parameters supported by the PUT method on this resource

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

This method shall support the request data structures specified in table 6.2.3.x.3.1-2 and the response data structures and response codes specified in table 6.2.3.x.3.1-3.

Table 6.2.3.x.3.1-2: Data structures supported by the PUT Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| IpSmGwRegistration | M | 1 | The IP-SM-GW registration is created or updated with the received information. |

Table 6.2.3.x.3.1-3: Data structures supported by the PUT Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| IpSmGwRegistration | M | 1 | 201 Created | Upon success, a response body containing a representation of the created IpSmGwRegistration resource shall be returned. |
| IpSmGwRegistration | M | 1 | 200 OK | Upon success, a response body containing a representation of the updated IpSmGwRegistration resource shall be returned. |
| n/a |  |  | 204 No Content | Upon success, an empty response body shall be returned  |
| ProblemDetails | O | 0..1 | 403 Forbidden | The "cause" attribute may be used to indicate any of the following application errors:- UNKNOWN\_5GS\_SUBSCRIPTION |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be used to indicate any of the following application errors:- USER\_NOT\_FOUND |

###### 6.2.3.x.3.2 DELETE

This method shall support the URI query parameters specified in table 6.2.3.x.3.2-1.

Table 6.2.3.x.3.2-1: URI query parameters supported by the DELETE method on this resource

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

This method shall support the request data structures specified in table 6.2.3.x.3.2-2 and the response data structures and response codes specified in table 6.2.3.x.3.2-3.

Table 6.2.3.x.3.2-2: Data structures supported by the DELETE Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| n/a |  |  | The request body shall be empty. |

Table 6.2.3.x.3.2-3: Data structures supported by the DELETE Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| n/a |  |  | 204 No Content | Upon success, an empty response body shall be returned. |

###### 6.2.3.x.3.3 GET

This method shall support the URI query parameters specified in table 6.2.3.x.3.3-1.

Table 6.2.3.x.3.3-1: URI query parameters supported by the GET method on this resource

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

This method shall support the request data structures specified in table 6.2.3.x.3.3-2 and the response data structures and response codes specified in table 6.2.3.x.3.3-3.

Table 6.2.3.x.3.3-2: Data structures supported by the GET Request Body on this resource

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

Table 6.2.3.x.3.3-3: Data structures supported by the GET Response Body on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| IpSmGwRegistration | M | 1 | 200 OK | Upon success, a response body containing the IpSmGwRegistration shall be returned. |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be set to indicate any of the following application errors:- USER\_NOT\_FOUND- CONTEXT\_NOT\_FOUND |

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

#### 6.2.6.1 General

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

Table 6.2.6.1-1 specifies the structured data types defined for the Nudm\_UECM service API. For simple data types defined for the Nudm\_UECM service API see table 6.2.6.3.2-1.

Table 6.2.6.1-1: Nudm\_UECM specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| Amf3GppAccessRegistration | 6.2.6.2.2 | The complete set of information relevant to the AMF where the UE has registered via 3GPP access. |
| PurgeFlag | 6.2.6.3.2 | This flag indicates whether or not the NF has deregistered. |
| AmfNon3GppAccessRegistration | 6.2.6.2.3 | The complete set of information relevant to the AMF where the UE has registered via non 3GPP access. |
| DeregistrationData | 6.2.6.2.5 | Data sent with the Deregistration Notification |
| SmfRegistration | 6.2.6.2.4 | The complete set of information relevant to an SMF serving the UE |
| SmsfRegistration | 6.2.6.2.6 | The complete set of information relevant to the SMSF serving the UE. |
| Amf3GppAccessRegistrationModification | 6.2.6.2.7 | Contains attributes of Amf3GppAccessRegistration that can be modified using PATCH |
| AmfNon3GppAccessRegistrationModification | 6.2.6.2.8 | Contains attributes of AmfNon3GppAccessRegistration that can be modified using PATCH |
| PcscfRestorationNotification | 6.2.6.2.9 | Information sent to the AMF or SMF when P-CSCF restoration is triggered. |
| DualRegistrationFlag | 6.2.6.3.2 | Dual Registration Flag |
| TriggerRequest | 6.2.6.2.12 |  |
| IpSmGwRegistration | 6.2.6.2.x |  |

Table 6.2.6.1-2 specifies data types re-used by the Nudm\_uecm service API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nudm\_uecm service API.

Table 6.2.6.1-2: Nudm\_UECM re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Dnn | 3GPP TS 29.571 [7] | Data Network Name |
| NfInstanceId | 3GPP TS 29.571 [7] | Network Function Instance Identifier |
| PduSessionId | 3GPP TS 29.571 [7] | PDU Session ID |
| Pei | 3GPP TS 29.571 [7] | Permanent Equipment Identifier |
| ProblemDetails | 3GPP TS 29.571 [7] | Common data type used in response bodies |
| Uri | 3GPP TS 29.571 [7] | Uniform Resource Identifier |
| SupportedFeatures | 3GPP TS 29.571 [7] | see 3GPP TS 29.500 [4] clause 6.6 |
| Supi | 3GPP TS 29.571 [7] | see 3GPP TS 23.501 [2] clause 5.9.2 |
| Guami | 3GPP TS 29.571 [7] | Globally Unique AMF Identifier |
| PlmnId | 3GPP TS 29.571 [7] | PLMN Identity |
| DiameterIdentity | 3GPP TS 29.571 [7] |  |
| AccessType | 3GPP TS 29.571 [7] | Access Type |
| BackupAmfInfo | 3GPP TS 29.571 [7] | Backup AMFs |
| ServiceName | 3GPP TS 29.510 [19] |  |
| PatchResult | 3GPP TS 29.571 [7] |  |

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

##### 6.2.6.2.x Type: IpSmGwRegistration

Table 6.2.6.2.x-1: Definition of type IpSmGwRegistration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| ipSmGwMapAddress | E164Number | C | 0..1 | International E.164 number of the IP-SM-GW; it shall be present if the IP-SM-GW supports MAP (see 3GPP TS 29.002 [21]) |
| ipSmGwDiameterAddress | NetworkNodeDiameterAddress | C | 0..1 | Diameter Identity of the IP-SM-GW; it shall be present if the IP-SM-GW supports Diameter (see 3GPP TS 29.328 [zz1]) |
| unriIndicator | boolean | O | 0..1 | UE-Not-Reachable-for-IP (UNRI) flag as defined in 3GPP TS 23.040 [zz2]. This IE indicates whether the address list of MWD contains one or more entries because an attempt to deliver a short message to a UE via an IP-SM-GW has failed with a cause of Absent Subscriber:- true: the MWD contains one or more list elements due to an SMS delivery failure- false, or absence of this attribute: the MWD does not contain any list element |
| NOTE 1: At least one of the properties, ipSmGwMapAddress or ipSmGwDiameterAddress, shall be present.NOTE 2: The unriIndicator attribute shall only be exposed over the Nudr SBI. |

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

## A.3 Nudm\_UECM API

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

 /{ueId}/registrations/smsf-non-3gpp-access:

 put:

 summary: register as SMSF for non-3GPP access

 operationId: Non3GppSmsfRegistration

 tags:

 - SMSF registration for non-3GPP access

 parameters:

 - name: ueId

 in: path

 description: Identifier of the UE

 required: true

 schema:

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

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '201':

 description: Created

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudm-uecm/v1/{ueId}/registrations/smsf-non-3gpp-access'

 required: true

 schema:

 type: string

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '204':

 description: No content

 '400':

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

 '403':

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

 '404':

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

 '500':

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

 '503':

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

 default:

 description: Unexpected error

 delete:

 summary: delete SMSF registration for non 3GPP access

 operationId: Non3GppSmsfDeregistration

 tags:

 - SMSF Deregistration for non-3GPP access

 parameters:

 - name: ueId

 in: path

 description: Identifier of the UE

 required: true

 schema:

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

 responses:

 '204':

 description: Expected response to a valid request

 '400':

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

 '404':

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

 '422':

 description: Unprocessable Request

 content:

 application/problem+json:

 schema:

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

 '500':

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

 '503':

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

 default:

 description: Unexpected error

 get:

 summary: retrieve the SMSF registration for non-3GPP access information

 operationId: GetNon3GppSmsfRegistration

 tags:

 - SMSF non-3GPP access Registration Info Retrieval

 parameters:

 - name: ueId

 in: path

 description: Identifier of the UE

 required: true

 schema:

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

 - name: supported-features

 in: query

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '400':

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

 '403':

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

 '404':

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

 '500':

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

 '503':

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

 default:

 description: Unexpected error

 /{ueId}/registrations/ip-sm-gw:

 put:

 summary: Register an IP-SM-GW

 operationId: IpSmGwRegistration

 tags:

 - IP-SM-GW registration

 parameters:

 - name: ueId

 in: path

 description: Identifier of the UE

 required: true

 schema:

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

 requestBody:

 content:

 application/json:

 schema:

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

 required: true

 responses:

 '201':

 description: Created

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: 'Contains the URI of the newly created resource, according to the structure: {apiRoot}/nudm-uecm/v1/{ueId}/registrations/ip-sm-gw'

 required: true

 schema:

 type: string

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '204':

 description: No content

 '400':

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

 '403':

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

 '404':

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

 '500':

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

 '503':

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

 default:

 description: Unexpected error

 delete:

 summary: Delete the IP-SM-GW registration

 operationId: IpSmGwDeregistration

 tags:

 - IP-SM-GW Deregistration

 parameters:

 - name: ueId

 in: path

 description: Identifier of the UE

 required: true

 schema:

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

 responses:

 '204':

 description: Expected response to a valid request

 '400':

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

 '404':

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

 '500':

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

 '503':

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

 default:

 description: Unexpected error

 get:

 summary: Retrieve the IP-SM-GW registration information

 operationId: GetIpSmGwRegistration

 tags:

 - IP-SM-GW Registration Info Retrieval

 parameters:

 - name: ueId

 in: path

 description: Identifier of the UE

 required: true

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '400':

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

 '403':

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

 '404':

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

 '500':

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

 '503':

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

 default:

 description: Unexpected error

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

 SmfRegistrationInfo:

 type: object

 required:

 - smfRegistrationList

 properties:

 smfRegistrationList:

 type: array

 items:

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

 minItems: 1

 IpSmGwRegistration:

 type: object

 anyOf:

 - required: [ ipSmGwMapAddress ]

 - required: [ ipSmGwDiameterAddress ]

 properties:

 ipSmGwMapAddress:

 $ref: '#/components/schemas/E164Number'

 ipSmGwDiameterAddress:

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

 unriIndicator:

 type: boolean

 default: false

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

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