**3GPP TSG-CT WG4 Meeting #96eC4-200581**

**E-Meeting, 17th – 28th February 2020**

**Source: Ericsson**

**Title: Completion of service data**

**Spec: 3GPP TS 29.562 v0.3.0**

**Agenda item: 6.1.14**

**Document for: Agreement**

**1. Introduction**

-

**2. Reason for Change**

Complete service data.

**3. Conclusions**

-

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.562 v0.3.0.

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

#### 6.2.3.1 Overview



Figure 6.2.3.1-1: Resource URI structure of the Nhss\_imsSDM API



Figure 6.2.3.1-2: Resource URI structure of the Nhss\_imsSDM API

Editor's Note: The resource structure shown above is work in progress and can be changed in the future.

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 |
| RepositoryData(Document) | /{imsUeId}/repository-data/{serviceIndication} | GET | Retrieve repository data for a service indication |
| DELETE | Delete repository data for a service indication |
| PUT | Update repository data for a service indication |
| ImsAssociatedIdentities(Document) | /{imsUeId}/identities/ims-associated-identities | GET | Retrieve the UE's IMS associated identities (implicit and alias) |
| Msisdns(Document) | /{imsUeId}/identities/msisdns | GET | Retrieve the UE's MSISDNs (basic and additional) |
| PrivateIdentities(Document) | /{imsUeId}/identities/private-identities | GET | Retrieve the UE's Private Identities (IMPI and IMSI) |
| ImeiSv(Document) | /{imsUeId}/identities/imeisv | GET | Retrieve the UE's IMEISV |
| ImsProfile(Document) | /{imsUeId}/ims-data/profile-data | GET | Retrieve the UE's subscribed Profile |
| Ifcs(Document) | /{imsUeId}/ims-data/profile-data/ifcs | GET | Retrieve the UE's subscribed Initial Filter Criteria |
| ChargingInformation(Document) | /{imsUeId}/ims-data/profile-data/charging-information | GET | Retrieve the UE's subscribed Charging Information |
| ServiceLevelTraceInformation(Document) | /{imsUeId}/ims-data/profile-data/service-level-trace-info | GET | Retrieve the UE's subscribed Service Level Trace Information |
| PriorityLevels(Document) | /{imsUeId}/ims-data/profile-data/priority-levels | GET | Retrieve the UE's subscribed Service Priority Levels |
| ImsServerNameAndCaps(Document) | /{imsUeId}/ims-data/location-data | GET | Retrieve the UE's S-CSCF name and the server capabilities in IMS |
| ScscfCapabilities(Document) | /{imsUeId}/ims-data/location-data/scscf-capabilities | GET | Retrieve the UE's S-CSCF capabilities (mandatory and/or optional) |
| ImsRegistrationStatus(Document) | /{imsUeId}/ims-data/registration-status | GET | Retrieve the UE's IMS registration status. |
| SdmSubscriptions(Collection) | /{imsUeId}/sdm-subscriptions | POST | Create a subscription |
| Individual subscription(Document) | /{imsUeId}/sdm-subscriptions/{subscriptionId} | DELETE | Delete the subscription identified by {subscriptionId}, i.e. unsubscribe |
| PATCH | Modify the sdm-subscription identified by {subscriptionId} |
| PsLocation(Document) | /{imsUeId}/access-data/ps-domain/location-data | GET | Retrieve the UE's location in PS domain |
| CsLocation(Document) | /{imsUeId}/access-data/cs-domain/location-data | GET | Retrieve the UE's location in CS domain |
| PsUserState(Document) | /{imsUeId}/access-data/ps-domain/user-state | GET | Retrieve the UE's state in PS domain |
| CsUserState(Document) | /{imsUeId}/access-data/cs-domain/user-state | GET | Retrieve the UE's state in CS domain |
| TadsInfo(Document) | /{imsUeId}/access-data/ps-domain/tads-info | GET | Retrieve the UE's T-ADS information |
| UeRechabilityIpSubscriptions(Collection) | /{imsUeId}/access-data/ps-domain/ue-reach-subs | POST | Create a subscription to UE Reachability for IP |
| UeRechabilityIpIndividual subscription(Document) | /{imsUeId}/access-data/ps-domain/ue-reach-subs/{subscriptionId} | DELETE | Delete the subscription identified by {subscriptionId}, i.e. unsubscribe |
| IpAddress(Document) | /{imsUeId}/access-data/ps-domain/ip-address | GET | Retrieve the UE's stored IP Address Secure Binding Information |
| Csrn(Document) | /{imsUeId}/access-data/cs-domain/csrn | GET | Retrieve a CSRN for the UE |
| ReferenceAccessLocation(Document) | /{imsUeId}/access-data/wireline-domain/reference-location | GET | Retrieve the UE's subscribed Reference Access Location |
| SrvccData(Document) | /{imsUeId}/srvcc-data | GET | Retrieve the UE's STN-SR and SRVCC capability |
| PsiActivationState(Document) | /{imsUeId}/service-data/psi-state | GET | Retrieve a PSI activation status |
| PATCH | Update a PSI activation status |
| Dsai(Document) | /{imsUeId}/service-data/dsai | GET | Retrieve DSAI data |
| PATCH | Update DSAI data |
| SMSRegistrationInfo(Document) | /{imsUeId}/service-data/sms-registration-info | GET | Retrieve the SMS Registration Information (e.g. IP-SM-GW address) |
| PATCH | Updates the SMS Registration Information (e.g. IP-SM-GW address) |
| SharedData(Collection) | /shared-data | GET | Retrieve shared data |
| SharedDataSubscriptions(Collection) | /shared-data-subscriptions | POST | Create a subscription |
| SharedDataIndividual subscription(Document) | /shared-data-subscriptions/{subscriptionId} | DELETE | Delete the subscription identified by {subscriptionId}, i.e. unsubscribe |

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

##### 5.3.2.2.x PSI activation state retrieval

Figure 5.3.2.2.x-1 shows a scenario where the NF service consumer (e.g. AS) sends a request to the HSS to retrieve the PSI activation state. The request contains the Public Service Identity (/{imsUeId}), the type of the requested information (/service-data/psi-state) and query parameters (e.g. supported-features).



Figure 5.3.2.2.x-1: PSI activation state Retrieval

1. The NF service consumer (e.g. AS) sends a GET request to the resource representing the PSI activation state with query parameters indicating the supported-features.

2a. On success, the HSS responds with "200 OK" with the message body containing the PSI activation state (active or inactive).

2b. If there is no valid activation state for the PSI, HTTP status code "404 Not Found" shall be returned and it should include additional error information 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 \* \* \* \*

##### 5.3.2.x.2 PSI activation state update

Figure 5.3.2.x.2-1 shows a scenario where the IMS-AS sends a request to the HSS to update the PSI activation state. The request contains the Public Service Identity (/{imsUeId}) and an instruction to modify the activation state.

Figure 5.3.2.x.2-1: IMS AS updating a PSI activation state

1. The IMS AS sends a PATCH request to the resource representing the PSI activation state.

2a. On success, the HSS responds with "204 No Content".

2b. If the resource does not exist (i.e. the service does not exist), HTTP status code "404 Not Found" should be returned including additional error information in the response body (in the "ProblemDetails" element).

2c. If the operation is not authorized due to e.g IMS AS does not have the required permissions for the operation requested, 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 PATCH response body.

\* \* \* 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 data types defined for the Nhss\_imsSDM service API.

Table 6.2.6.1-1: Nhss\_imsSDM specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| ScscfCapabilityList | 6.2.6.2.2 | Information about mandatory and optional S-CSCF capabilities  |
| ImsProfileData | 6.2.6.2.4 | User's IMS profile data |
| RepositoryData | 6.2.6.2.7 | Repository Data for the requested Service Indication |
| MsisdnList | 6.2.6.2.8 | List of MSISDNs associated to the IMS public Identity  |
| PublicIdentities | 6.2.6.2.9 | IMS Public Identities which belong to the same Implicit Registration Set (if any) than the requested IMS Public Identity |
| PublicIdentity | 6.2.6.2.10 | IMS Public Identity and the related data (Alias Group Id, IRS default indication, Identity Type) |
| PsiActivationState | 6.2.6.2.x1 | Public Service Identity activation state |

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

Table 6.2.6.1-2: Nhss\_imsSDM re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Uri | 3GPP TS 29.571 [16] | Uniform Resource Identifier |
| SupportedFeatures | 3GPP TS 29.571 [16] | see 3GPP TS 29.500 [4] clause 6.6 |

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

#### 6.2.3.x Resource: PSI activation state

##### 6.2.3.x.1 Description

This resource represents the PSI activation state. It is queried by the service consumer (e.g. AS) to retrieve the activation state for the IMS Public Service Identity.

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

Resource URI: **{**apiRoot}/nhss-ims-sdm/{apiVersion}/{imsUeId}/psi-state

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 |
| apiVersion | See clause 6.2.1 |
| imsUeId | Represents the IMS Public Service Identity pattern: "^(impu-sip\:([a-zA-Z0-9\_\-.!~\*()&=+$,;?\/]+)\@([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}|impu-tel\:\+[0-9]{5,15}|impi-.+|.+)$" |

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

###### 6.2.3.x.3.1 GET

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 GET method on this resource

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description | Applicability |
| 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 6.2.3.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 GET Request Body on this resource

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Responsecodes | Description |
| PsiActivationState | M | 1 | 200 OK | A response body containing the PSI activation state shall be returned. |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be used to indicate one of the following application errors:- SERVICE\_NOT\_FOUND |
| ProblemDetails | O | 0..1 | 403 Forbidden | The "cause" attribute may be used to indicate the following application error:- OPERATION\_NOT\_ALLOWED |
| NOTE: In addition, common data structures as listed in table xx are supported. |

###### 6.2.3.x.3.2 PATCH

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 PATCH method on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| 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 6.2.3.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 PATCH Request Body on this resource

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| array(PatchItem) | M |  1..N | Items describe the modifications to the PSI activation state. |

Table 6.2.3.x.3.2-3: Data structures supported by the PATCH 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. (NOTE 1) |
| PatchResult | M | 1 | 200 OK | Upon success, the execution report is returned. (NOTE 1) |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute shall be set to one of the following application errors:- SERVICE\_NOT\_FOUND |
| O | 0..1 | 403 Forbidden | One or more attributes are not allowed to be modified.The "cause" attribute may be used to convey the following application errors:- MODIFICATION\_NOT\_ALLOWED, see GPP TS 29.500 [4] table 5.2.7.2-1.- OPERATION\_NOT\_ALLOWED |
| NOTE 1: If all the modification instructions in the PATCH request have been implemented, the HSS shall respond with 204 No Content response; if some of the modification instructions in the PATCH request have been discarded, and the NF service consumer has included in the supported-feature query parameter the "PatchReport" feature number, the HSS shall respond with PatchResult. |

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

##### 6.2.6.2.x1 Type: PsiActivationState

Table 6.2.6.2.x1-1: Definition of type PsiActivationState

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| activationState | PsiState | M | 1 | Indicates whether the PSI is active or inactive |

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

##### 6.2.6.3.x Enumeration: PsiState

The enumeration PsiState represents the activation state of a PSI. It shall comply with the provisions defined in table 6.2.6.3.x-1.

Table 6.2.6.3.x-1: Enumeration PsiState

|  |  |
| --- | --- |
| Enumeration value | Description |
| "ACTIVE" | The PSI is active and handles requests |
| "INACTIVE" | The PSI is inactive and does not handle requests |

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

## A.3 Nhss\_imsSDM API

openapi: 3.0.0

info:

 version: '1.0.0.alpha-1'

 title: 'Nhss\_imsSDM'

 description: |

 Nhss Subscriber Data Management Service for IMS.

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externalDocs:

 description: 3GPP TS 29.562 Unified Data Management Services, version 0.3.0

 url: 'http://www.3gpp.org/ftp/Specs/archive/29\_series/29.562/'

servers:

 - url: '{apiRoot}/nhss-ims-sdm/v1'

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - oAuth2ClientCredentials:

 - nhss-ims-sdm

 - {}

paths:

 /{imsUeId}/ims-data/location-data/scscf-capabilities:

 get:

 summary: Retrieve the S-CSCF capabilities for the associated IMS subscription

 operationId: GetScscfCapabilities

 tags:

 - Retrieval of the S-CSCF capabilities for the IMS subscription

 parameters:

 - name: imsUeId

 in: path

 description: IMS Identity

 required: true

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '404':

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

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

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

 '503':

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

 '504':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/504'

 default:

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

 /{imsUeId}/repository-data/{serviceIndication}:

 get:

 summary: Retrieve the repository data associated to an IMPU and service indication

 operationId: GetRepositoryDataServInd

 tags:

 - Repository data

 parameters:

 - name: imsUeId

 in: path

 description: IMS Identity

 required: true

 schema:

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

 - name: serviceIndication

 in: path

 description: Identifier of a service related data

 required: true

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '400':

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

 '404':

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

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

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

 '503':

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

 default:

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

 /{imsUeId}/identities/msisdns:

 get:

 summary: retrieve the Msisdns associated to requested identity

 operationId: GetMsisdns

 tags:

 - Retrieval of the associated Msisdns

 parameters:

 - name: imsUeId

 in: path

 description: IMS Identity

 required: true

 schema:

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

 - name: privateId

 in: query

 description: Private identity

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '400':

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

 '404':

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

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

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

 '503':

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

 default:

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

 /{imsUeId}/identities/ims-associated-identities:

 get:

 summary: Retrieve the associated identities to the IMS public identity included in the service request

 operationId: GetImsAssocIds

 tags:

 - Retrieval of associated IMS public identities

 parameters:

 - name: imsUeId

 in: path

 description: IMS Public Identity

 required: true

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '400':

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

 '404':

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

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

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

 '503':

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

 default:

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

 /{imsUeId}/service-data/psi-status:

 get:

 summary: Retrieve the PSI activation state data

 operationId: GetPsiState

 tags:

 - Retrieval of PSI activation state

 parameters:

 - name: imsUeId

 in: path

 description: IMS Private Identity

 required: true

 schema:

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

 - name: supported-features

 in: query

 description: Supported Features

 schema:

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

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '400':

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

 '404':

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

 '405':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/405'

 '500':

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

 '503':

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

 default:

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

 patch:

 summary: Patch

 operationId: UpdatePsiState

 tags:

 - Update PSI state data

 parameters:

 - name: imsUeId

 in: path

 description: IMS Public Service Identity

 required: true

 schema:

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

 - name: supported-features

 in: query

 description: Supported Features

 schema:

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

 requestBody:

 content:

 application/json-patch+json:

 schema:

 type: array

 items:

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

 minItems: 1

 required: true

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

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

 '204':

 description: Successful response

 '403':

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

 '404':

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

 default:

 description: Unexpected error

components:

 schemas:

# COMPLEX TYPES:

 ScscfCapabilityList:

 type: object

 properties:

 mandatoryCapabilityList:

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

 optionalCapabilityList:

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

 anyOf:

 - required: [mandatoryCapabilityList]

 - required: [optionalCapabilityList]

 Capabilities:

 type: array

 items:

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

 minItems: 1

 uniqueItems: true

 RepositoryData:

 type: object

 required:

 - serviceData

 - sequenceNumber

 properties:

 sequenceNumber:

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

 serviceData:

 type: string

 format: byte

 MsisdnList:

 type: object

 required:

 - basicMsisdn

 properties:

 basicMsisdn:

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

 additionalMsisdns:

 type: array

 minItems: 1

 items:

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

 PublicIdentities:

 type: object

 required:

 - publicIdentities

 properties:

 publicIdentities:

 type: array

 items:

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

 minItems: 1

 uniqueItems: true

 PublicIdentity:

 type: object

 required:

 - imsPublicId

 - identityType

 properties:

 imsPublicId:

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

 identityType:

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

 irsIsDefault:

 type: boolean

 aliasGroupId:

 type: integer

 PsiActivationState:

 type: object

 required:

 - activationState

 properties:

 activationState:

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

# SIMPLE TYPES:

 Capability:

 type: integer

 ImsUeId:

 type: string

 pattern: '^sip\:([a-zA-Z0-9\_\-.!~\*()&=+$,;?\/]+)\@([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}$|^tel\:\+[0-9]{5,15}$'

 SequenceNumber:

 type: integer

 minimum: 0

 ServiceIndication:

 type: string

 Msisdn:

 type: string

 pattern: '[0-9]{5,15}$'

 PrivateId:

 type: string

 ImsPublicId:

 type: string

 pattern: '^(sip\:([a-zA-Z0-9\_\-.!~\*()&=+$,;?\/]+)\@([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}|tel\:\+[0-9]{5,15})$'

# ENUMS:

 IdentityType:

 anyOf:

 - type: string

 enum:

 - DISTINCT\_IMPU

 - DISTINCT\_PSI

 - WILDCARDED\_IMPU

 - WILDCARDED\_PSI

 - type: string

 PsiState:

 anyOf:

 - type: string

 enum:

 - ACTIVE

 - INACTIVE

 - type: string

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