**3GPP TSG-CT WG4 Meeting #96eC4-200574**

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

**Source: Ericsson**

**Title: Completion of Service Priority Level**

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

**Agenda item: 6.1.14**

**Document for: Agreement**

**1. Introduction**

-

**2. Reason for Change**

Complete service priority level retrieval

**3. Conclusions**

-

**4. Proposal**

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

\* \* \* 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 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[7] 3GPP TS 29.335: "User Data Repository Access Protocol over the Ud interface; Stage 3".

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

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

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

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

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

[13] 3GPP TS 23.003: "Numbering, addressing and identification".

[14] 3GPP TS 33.203: "Access security for IP-based services".

[15] 3GPP TS 29.503: "Unified Data Management Services; Stage 3".

[16] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[xx] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[yy] IETF RFC 4412: "Communications Resource Priority for the Session Initiation Protocol".

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

##### 5.3.2.2.x Service Priority Level Information 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 receive the Service Priority levels allowed for the UE. The request contains the UE's identity (/{imsUeId}), the type of the requested information (ims-data/profile-data/priority-levels) and query parameters (e.g. supported-features).



Figure 5.3.2.2.x-1: IMS Service Priority Level Information Retrieval

1. The NF service consumer (e.g. AS) sends a GET request to the resource representing the UE's Service Priority Level with query parameters indicating the supported-features.

2a. On success, the HSS responds with "200 OK" with the message body containing the Namespaces and priority levels allowed for the user.

2b. If there is no valid subscription data for the UE, 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 \* \* \* \*

#### 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) |
| PriorityLevels | 6.2.6.2.x1 | Namespaces and priority levels allowed for the IMS public Identity. |

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: Service Priority Information

##### 6.2.3.x.1 Description

This resource represents the Service Priority Levels. It is queried by the service consumer (e.g. AS) to retrieve the Namespaces and priority levels allowed for the user.

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

Resource URI: **{**apiRoot}/nhss-ims-sdm/{apiVersion}/{imsUeId}/ims-data/profile-data/priority-levels

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 Identity (i.e. IMS Public User identity or Public Service Identity) pattern: "^(sip\:([a-zA-Z0-9\_\-.!~\*()&=+$,;?\/]+)\@([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}|tel\:\+[0-9]{5,15})$" |

##### 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 |
| PriorityLevels | M | 1 | 200 OK | A response body containing the service priority information (priority namespaces and associated levels) allowed for the user shall be returned. |
| ProblemDetails | O | 0..1 | 404 Not Found | The "cause" attribute may be used to indicate one of the following application errors:- USER\_NOT\_FOUND- DATA\_NOT\_FOUNDDATA\_NOT\_FOUND indicates that the user does not have priority service. |
| 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. |

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

##### 6.2.6.2.x1 Type: PriorityLevels

Table 6.2.6.2.x1-1: Definition of type PriorityLevels

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| servicePriorityLevelList | array(NameSpacePriority) | M | 1..N | List of namespaces and their associated priorities allowed for the user. |

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

##### 6.2.6.3.2 Simple data types

The simple data types defined in table 6.2.6.3.2-1 shall be supported.

Table 6.2.6.3.2-1: Simple data types

|  |  |  |
| --- | --- | --- |
| Type Name | Type Definition | Description |
| Capability | integer | S-CSCF capability  |
| SequenceNumber | integer | Unsigned integer containing the sequence number associated to the current version of Repository Data |
| ServiceIndication | string | String containing the Service Indication or Service Identifier |
| Msisdn | string | String containing an additional or basic MSISDN pattern: '[0-9]{5,15}$' |
| PrivateId | string | String containing a Private User Identity or a Private Service Identity.  |
| ImsPublicId | string | String containing an IMS Public Identity in SIP URI format or TEL URI format, as specified 3GPP TS 23.003 [2] pattern: "^(sip\:([a-zA-Z0-9\_\-.!~\*()&=+$,;?\/]+)\@([A-Za-z0-9]+([-A-Za-z0-9]+)\.)+[a-z]{2,}|tel\:\+[0-9]{5,15})$" |
| NameSpacePriority | string | String containing the namespace and priority. It shall be formatted as "r-value" parameter described in IETF RFC 4412 [yy]. See also 3GPP TS 24.229 [xx]. pattern: "^[0-9a-zA-Z-\!%\\*\_\+`\'~]+.[0-9a-zA-Z-\!%\\*\_\+`\'~]+$" |

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

## A.3 Nhss\_imsSDM API

openapi: 3.0.0

info:

 version: '1.0.0'

 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 16.0.0

 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/profile-data/priority-levels:

 get:

 summary: Retrieve the service priority levels associated to the user

 operationId: GetPriorityInfo

 tags:

 - Priority Info Retrieval

 parameters:

 - name: imsUeId

 in: path

 description: IMS 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/PriorityLevels'

 '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}/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'

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

 PriorityLevels:

 type: object

 required:

 - servicePriorityLevelList

 properties:

 servicePriorityLevelList:

 type: array

 items:

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

 minItems: 1

 uniqueItems: true

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

 NameSpacePriority:

 type: string

 pattern: '^[0-9a-zA-Z-\!%\\*\_\+`\'~]+.[0-9a-zA-Z-\!%\\*\_\+`\'~]+$'

# ENUMS:

 IdentityType:

 anyOf:

 - type: string

 enum:

 - DISTINCT\_IMPU

 - DISTINCT\_PSI

 - WILDCARDED\_IMPU

 - WILDCARDED\_PSI

 - type: string

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