**3GPP TSG-SA5 Meeting #130e *S5-202227***

**e-meeting 20-28 April 2020**

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| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **28.532** | **CR** | **0112** | **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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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| ***Title:*** | Update the generic provisioning MnS to support different management purposes | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-04-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | Clause 11 defines the generic provisioning MnS which includes CRUD operations and notifications and the title of Clause 12.1 also is generic provsionins MnS. However, in the URI segment {MnS name} for generic provisioning MnS is ProvMnS which is used to used to described lifecycle management and configuration management for NR/5GC/Network slicing in TS 28.531 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Change URI segment {MnS name} from ProvMnS to GenericProvMnS to align with generic provisioning MnS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The specification will be published with incorrect URI for generic provisioning MnS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 12.1.1.1.1, 12.1.1.3.2.1.2,A.1.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| --- | --- |
| ***This CR's revision history:*** |  |

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| **1st Change** |

## 12.1 Generic provisioning management service

### 12.1.1 RESTful HTTP-based solution set

#### 12.1.1.1 Mapping of operations

##### 12.1.1.1.1 Introduction

The IS operations are mapped to SS equivalents according to table 12.1.1.1.1-1.

Table 12.1.1.1.1-1: Mapping of IS operations to SS equivalents

|  |  |  |  |
| --- | --- | --- | --- |
| **IS operation** | **HTTP Method** | **Resource URI** | **SQ** |
| createMOI | PUT | http://{URI-DN-prefix}/{root}/GenericProvMnS/{MnSVersion}/ {LDN-first-part}/{className}={id} | M |
| getMOIAttributes | GET | http://{URI-DN-PREFIX}/{root}/GenericProvMnS/{MnSVersion}/{LDN-first-part}/{className}={id} | M |
| modifyMOIAttributes | PUT  PATCH | http://{URI-DN-prefix}/{root}/GenericProvMnS/{MnSVersion}/{LDN-first-part}/{className}={id} | M |
| deleteMOI | DELETE | http://{URI-DN-prefix}/{root}/GenericProvMnS/{MnSVersion}/{LDN-first-part}/{className}={id} | M |
| subscribe | POST | http://{URI-DN-prefix}/{root}/GenericProvMnS/{MnSVersion}/subscriptions | M |
| unSubscribe | DELETE | http://{URI-DN-prefix}/{root}/GenericProvMnS/{MnSVersion}/subscriptions | M |
| DELETE | http://{URI-DN-prefix}/{root}/GenericProvMnS/{MnSVersion}/subscriptions/{subscriptionId} | M |

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| **2nd Change** |

##### 12.1.1.3.2 Resource definitions

###### 12.1.1.3.2.1 Resource "/{className}={id}"

12.1.1.3.2.1.1 Description

This resource represents a managed object instance.

12.1.1.3.2.1.2 URI

Resource URI: http://{URI-DN-PREFIX}/{root}/GenericProvMnS/v1630/{LDN-first-part}

The resource URI variables a defined in the following table.

Table 12.1.1.3.2.1.2-1: URI variables

|  |  |
| --- | --- |
| **Name** | **Definition** |
| URI-DN-prefix | See clause 4.4 of TS 32.158 [15] |
| root | See clause 4.4 of TS 32.158 [15] |
| LDN-first-part | See subclause 4.4 of TS 32.158 [15] |
| className | The class name of the resource to be targeted |
| id | The id of the resource to be targeted |

|  |
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| **4th Change** |

## A.1.1 Generic provisioning management service

openapi: 3.0.1

info:

title: Generic Provisioning Management Service

version: 16.3.0

description: >-

OAS 3.0.1 specification of the Provisioning Management Service

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externalDocs:

description: 3GPP TS 28.532 V16.3.0; Generic management services

url: http://www.3gpp.org/ftp/Specs/archive/28\_series/28.532/

servers:

- url: 'http://{URI-DN-prefix}/{root}/GenericProvMnS/v1630/{LDN-first-part}'

variables:

URI-DN-prefix:

description: See subclause 4.4 of TS 32.158

default: example.com

root:

description: See subclause 4.4 of TS 32.158

default: 3GPPManagement

LDN-first-part:

description: See subclause 4.4 of TS 32.158

default: ''

paths:

'/{className}={id}':

parameters:

- name: className

in: path

required: true

schema:

$ref: '#/components/schemas/className-PathType'

- name: id

in: path

required: true

schema:

$ref: '#/components/schemas/id-PathType'

put:

summary: Replaces a complete single resource or creates it if it does not exist

description: >-

With HTTP PUT a complete resource is replaced or created if it does not

exist. The target resource is identified by the target URI.

requestBody:

required: true

content:

application/json:

schema:

$ref: '#/components/schemas/resourcePut-RequestType'

responses:

'200':

description: >-

Success case ("200 OK").

This status code shall be returned when the resource is replaced, and

when the replaced resource representation is not identical to the resource

representation in the request.

This status code may be retourned when the resource is updated and when the

updated resource representation is identical to the resource representation

in the request.

The representation of the updated resource is returned in the response

message body.

content:

application/json:

schema:

$ref: '#/components/schemas/resourceUpdate-ResponseType'

'201':

description: >-

Success case ("201 Created").

This status code shall be returned when the resource is created.

The representation of the created resource is returned in the response

message body.

content:

application/json:

schema:

$ref: '#/components/schemas/resourceCreation-ResponseType'

'204':

description: >-

Success case ("204 No Content").

This status code may be returned only when the replaced resource

representation is identical to the representation in the request.

The response has no message body.

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

get:

summary: Reads one or multiple resources

description: >-

With HTTP GET resources are read. The resources to be retrieved are

identified with the target URI. The attributes and fields parameter

of the query components allow to select the resource properties to be returned.

parameters:

- name: scope

in: query

description: >-

This parameter extends the set of targeted resources beyond the base

resource identified with the path component of the URI. No scoping

mechanism is specified in the present document.

required: false

schema:

$ref: '#/components/schemas/scope-QueryType'

style: form

explode: true

- name: filter

in: query

description: >-

This parameter reduces the targeted set of resources by applying a

filter to the scoped set of resource representations. Only resource

representations for which the filter construct evaluates to "true"

are targeted. No filter language is specified in the present

document.

required: false

schema:

$ref: '#/components/schemas/filter-QueryType'

- name: attributes

in: query

description: >-

This parameter specifies the attributes of the scoped resources that

are returned.

required: true

schema:

$ref: '#/components/schemas/attributes-QueryType'

style: form

explode: false

- name: fields

in: query

description: >-

This parameter specifies the attribute field of the scoped resources

that are returned.

required: false

schema:

$ref: '#/components/schemas/fields-QueryType'

style: form

explode: false

responses:

'200':

description: >-

Success case ("200 OK").

The resources identified in the request for retrieval are returned

in the response message body. In case the attributes or fields query

parameters are used, only the selected attributes or sub-attributes are

returned. The response message body is constructed according to the

hierarchical response construction method (TS 32.158 [15]).

content:

application/json:

schema:

$ref: '#/components/schemas/resourceRetrieval-ResponseType'

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

patch:

summary: Patches one or multiple resources

description: >-

With HTTP PATCH resources are created, updated or deleted. The resources

to be modified are identified with the target URI (base resource) and

the patch document included in the request message body.

requestBody:

description: >-

The request body describes changes to be made to the target resources.

The following patch media types are available

- "application/merge-patch+json" (RFC 7396)

- "application/3gpp-merge-patch+json" (TS 32.158)

- "application/json-patch+json" (RFC 6902)

- "application/3gpp-json-patch+json" (TS 32.158)

required: true

content:

application/merge-patch+json:

schema:

$ref: '#/components/schemas/jsonMergePatch-RequestType'

application/3gpp-merge-patch+json:

schema:

$ref: '#/components/schemas/3gppJsonMergePatch-RequestType'

application/json-patch+json:

schema:

$ref: '#/components/schemas/jsonPatch-RequestType'

application/3gpp-json-patch+json:

schema:

$ref: '#/components/schemas/3gppJsonPatch-RequestType'

responses:

'200':

description: >-

Success case ("200 OK").

This status code is returned when the updated the resource representations

shall be returned for some reason.

The resource representations are returned in the response message body. The

response message body is constructed according to the hierarchical response

construction method (TS 32.158 [15])

content:

application/json:

schema:

$ref: '#/components/schemas/resourceUpdate-ResponseType'

'204':

description: >-

Success case ("204 No Content").

This status code is returned when there is no need to return the updated

resource representations.

The response message body is empty.

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

delete:

summary: Deletes one or multiple resources

description: >-

With HTTP DELETE resources are deleted. The resources to be deleted are

identified with the target URI.

parameters:

- name: scope

in: query

description: >-

This parameter extends the set of targeted resources beyond the base

resource identified with the path component of the URI. No scoping

mechanism is specified in the present document.

required: false

schema:

$ref: '#/components/schemas/scope-QueryType'

- name: filter

in: query

description: >-

This parameter reduces the targeted set of resources by applying a

filter to the scoped set of resource representations. Only resources

representations for which the filter construct evaluates to "true"

are returned. No filter language is specified in the present

document.

required: false

schema:

$ref: '#/components/schemas/filter-QueryType'

responses:

'200':

description: >-

Success case ("200 OK").

This status code shall be returned, when query parameters are present in

the request and one or multiple resources are deleted.

The URIs of the deleted resources are returned in the response message body.

'204':

description: >-

Success case ("204 No Content").

This status code shall be returned, when no query parameters are present in

the request and only one resource is deleted.

The message body is empty.

content:

application/json:

schema:

$ref: '#/components/schemas/resourceDeletion-ResponseType'

default:

description: Error case.

content:

application/json:

schema:

$ref: '#/components/schemas/error-ResponseType'

components:

schemas:

dateTime-Type:

type: string

format: date-time

long-Type:

type: integer

format: int64

uri-Type:

type: string

correlatedNotification-Type:

type: object

properties:

source:

$ref: '#/components/schemas/uri-Type'

notificationIds:

type: array

items:

$ref: '#/components/schemas/notificationId-Type'

notificationId-Type:

$ref: '#/components/schemas/long-Type'

notificationType-Type:

type: string

enum:

- notifyMOICreation

- notifyMOIDeletion

- notifyMOIAttributeValueChange

systemDN-Type:

type: string

additionalText-Type:

type: string

sourceIndicator-Type:

type: string

enum:

- resourceOperation

- mangementOperation

- sONOperation

- unknown

header-Type:

type: object

properties:

href:

$ref: '#/components/schemas/uri-Type'

notificationId:

$ref: '#/components/schemas/notificationId-Type'

notificationType:

$ref: '#/components/schemas/notificationType-Type'

eventTime:

$ref: '#/components/schemas/dateTime-Type'

systemDN:

$ref: '#/components/schemas/systemDN-Type'

required:

- href

- notificationId

- notificationType

- eventTime

- systemDN

scopeType-Type:

type: string

enum:

- BASE\_ONLY

- BASE\_NTH\_LEVEL

- BASE\_SUBTREE

- BASE\_ALL

scopeLevel-Type:

type: integer

className-PathType:

type: string

id-PathType:

type: string

attributes-QueryType:

type: array

items:

type: string

fields-QueryType:

type: array

items:

type: string

filter-QueryType:

type: string

scope-QueryType:

type: object

properties:

scopeType:

$ref: '#/components/schemas/scopeType-Type'

scopeLevel:

$ref: '#/components/schemas/scopeLevel-Type'

resourcePut-RequestType:

$ref: '#/components/schemas/resourceRepresentation-Type'

jsonMergePatch-RequestType:

$ref: '#/components/schemas/resourceRepresentation-Type'

3gppJsonMergePatch-RequestType:

$ref: '#/components/schemas/resourceRepresentation-Type'

jsonPatch-RequestType:

type: array

items:

type: object

3gppJsonPatch-RequestType:

type: array

items:

type: object

error-ResponseType:

type: object

properties:

error:

type: object

properties:

errorInfo:

type: string

resourceRetrieval-ResponseType:

type: object

properties:

data:

type: array

items:

$ref: '#/components/schemas/resourceRepresentation-Type'

resourceCreation-ResponseType:

type: object

properties:

data:

$ref: '#/components/schemas/resourceRepresentation-Type'

resourceUpdate-ResponseType:

type: object

properties:

data:

$ref: '#/components/schemas/resourceRepresentation-Type'

resourceDeletion-ResponseType:

type: array

items:

$ref: '#/components/schemas/uri-Type'

resourceRepresentation-Type:

oneOf:

- type: object

properties:

id:

type: string

attributes:

type: object

nameContainedObjects:

additionalProperties:

type: array

items:

type: object

- anyOf:

- $ref: 'genericNrm.yaml#/components/schemas/resources-genericNrm'

- $ref: 'nrNrm.yaml#/components/schemas/resources-nrNrm'

- $ref: '5gcNrm.yaml#/components/schemas/resources-5gcNrm'

- $ref: 'sliceNrm.yaml#/components/schemas/resources-sliceNrm'

notifyMOICreation-NotifType:

allOf:

- $ref: '#/components/schemas/header-Type'

- type: object

properties:

correlatedNotifications:

type: array

items:

$ref: '#/components/schemas/correlatedNotification-Type'

additionalText:

$ref: '#/components/schemas/additionalText-Type'

sourceIndicator:

$ref: '#/components/schemas/sourceIndicator-Type'

attributeList:

type: object

additionalProperties:

nullable: true

notifyMOIDeletion-NotifType:

allOf:

- $ref: '#/components/schemas/header-Type'

- type: object

properties:

correlatedNotifications:

type: array

items:

$ref: '#/components/schemas/correlatedNotification-Type'

additionalText:

$ref: '#/components/schemas/additionalText-Type'

sourceIndicator:

$ref: '#/components/schemas/sourceIndicator-Type'

attributeList:

type: object

additionalProperties: true

notifyMOIAttributeValueChange-NotifType:

allOf:

- $ref: '#/components/schemas/header-Type'

- type: object

properties:

correlatedNotifications:

type: array

items:

$ref: '#/components/schemas/correlatedNotification-Type'

additionalText:

$ref: '#/components/schemas/additionalText-Type'

sourceIndicator:

$ref: '#/components/schemas/sourceIndicator-Type'

attributeValueChange:

type: object

additionalProperties:

type: array

minItems: 1

maxItems: 2

items:

nullable: true

required:

- attributeValueChange

|  |
| --- |
| **End of Change** |