**3GPP TSG-SA5 Meeting #130-e *S5-202049rev2***

**Online, , 20th Apr 2020 - 28th Apr 2020**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **28.532** | **CR** | **0100** | **rev** | **2** | **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:***  | Rel-16 CR 28.532 Add summary CM notification to the ProvMnS |
|  |  |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | SA5 |
|  |  |
| ***Work item code:*** | TEI16, REST\_SS |  | ***Date:*** | 2020-04-09 |
|  |  |  |  |  |
| ***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:*** | Currently the CM notifications can report only one single CM change, which is either the creation of an object, the deletion of an object, or the replacement of an attribute value. It is not possible to report multiple CM changes in a single notification. |
|  |  |
| ***Summary of change:*** | A new notification is added. This notification can report multiple CM changes. |
|  |  |
| ***Consequences if not approved:*** | It is not possible to report multiple CM changes in a single notification. With massive bulk configuration changes being applied to the NRM, this will leda to an undesirable CM notification flood. |
|  |  |
| ***Clauses affected:*** | 11.1.1.x (new), 11.1.2.1.1, 12.1.1.2.1, 12.1.1.2.x, 12.1.1.4.1, 12.1.1.4.2.22 (new), 12.1.1.4.3.3 (new), 12.1.1.4.4.6 (new), 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:*** |  |
|  |  |
| ***This CR's revision history:*** | S5-201385 |

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| **First modification** |

#### 11.1.1.x Notification notifyMOIChanges

##### 11.1.1.x.1 Definition

This notification notifies subscribed MnS consumers that Managed Object Instances have been created or deleted, or that values of Managed Object Instance attributes have been replaced. This notification can report multiple updates that happened at the same time.

The MnS producer decides whether to send notifications of type notifyMOICreation, notifyMOIDeletion or notifyMOIAttributesValueChange, or a single notifyMOIChanges reporting all changes in a single notification. The MnS producer should take subscription information into account when deciding the notification types to be sent, and not try to send notifications that the MnS consumer did not subscribe to.

The notification header includes a notificationId. This identifier shall not be used in the parameter correlatedNotifications potentially carried in other notifications. The notificationId in mOIChanges shall be used instead. This is because the latter notification id is associated to a single MOI only, whereas the former notification id can be associated to changes of multiple MOIs. The correlatedNotifications associates to a single MOI one or more notification ids identifying notifications reporting events for that MOI.

##### 11.1.1.x.2 Input parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Support Qualifier | Information Type / Legal Values | Comment |
| objectClass | M | See clause 11.1.1.7.2 | This parameter specifies the class name of the local root in the MIB |
| objectInstance | M | See clause 11.1.1.7.2 | This parameter specifies the instance of the local root in the MIB |
| notificationId | M | See clause 11.1.1.7.2 | See clause 11.1.1.7.2 |
| notificationType | M | const string “notifyMOIChanges” | See clause 11.1.1.7.2 |
| eventTime | M | See clause 11.1.1.7.2 | See clause 11.1.1.7.2 |
| systemDN | M | See clause 11.1.1.7.2 | See clause 11.1.1.7.2 |
| mOIChanges | M | SEQUENCE OF SET { notificationId (M), correlatedNotifications (O), additionalText (O), sourceIndicator (O), path (M), operation (M), value (CM)} | This parameter describes the NRM updates to be reported.The notificationId is an identifier of one MOI change.The path specifies the MOI created or deleted, or the MOI with replaced attribute values. The path may identify also parts of an attribute in case the attribute is a structured data type.The operation specifies the type of operation that has been applied to the MOI specified by the path. It can have the values "CREATE", "DELETE" and "REPLACE". "CREATE" and "DELETE" refers to a MOI creation or deletion, respectively. "REPLACE" refers to the replacement of a complete attribute value of an existing MOI, or parts thereof in case the attribute is a structured data type.When a MOI creation is reported, the value carries an (optional) complete MOI representation.When a MOI deletion is reported, the value carries an (optional) complete MOI representation.When the replacement of the value of one or more attributes of a MOI is reported, the value carries the MOI representation without the attributes not changed.When the replacement of the value of a part of an attribute is reported, the value carries the new value of that part.When arrays are modified (by e.g. adding an array item, removing an array item or replacing an array item) the complete array shall be included in value.The reported MOI changes is an ordered list, since the creation of parent objects needs to be reported before the creation of child objects, and, vice versa, the deletion of child objects needs to be reported before the deletion of parent objects. |

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| **Next modification** |

### 11.1.2 Managed Information

#### 11.1.2.1 ManagedEntity

##### 11.1.2.1.1 Definition

The ProxyClass ManagedEntity represents the role that can be played by an instance of an IOC defined in NRMs, e.g. Generic NRM, NR and NG-RAN NRM, or 5GC NRM. ManagedEntity is used in the specification of provisioning operations and notifications to represent an instance of an IOC defined in these NRMs.

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| **Next modification** |

#### 12.1.1.2 Mapping of notifications

##### 12.1.1.2.1 Introduction

The IS notifications are mapped to SS equivalents according to table 12.1.1.2.1-1.

**Table 12.1.1.2.1-1: Mapping of IS notifications to SS equivalents**

|  |  |  |  |
| --- | --- | --- | --- |
| **IS notifications** | **HTTP Method** | **Resource URI** | **SQ** |
| notifyMOICreation | POST | /notificationSink | M |
| notifyMOIDeletion | POST | /notificationSink | M |
| notifyMOIAttributeValueChange | POST | /notificationSink | M |
| notifyMOIChanges | POST | /notificationSink | M |

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| **Next modification** |

##### 12.1.1.2.x Notification "notifyMOIChanges"

The IS notification parameters are mapped to SS equivalents according to table 12.1.1.2.x-1.

Table 12.1.1.2.x-1: Mapping of IS notification input parameters to SS equivalents (HTTP POST)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IS operation parameter name** | **SS parameter location** | **SS parameter name** | **SS parameter type** | **SQ** |
| objectClassobjectInstance | request body | href | uri-Type | M |
| notificationId | request body | notificationId | notificationId-Type | M |
| notificationType | request body | notificationType | notificationTyp-Type | M |
| eventTime | request body | eventTime | dateTime-Type | M |
| systemDN | request body | systemDN | systemDN-Type | M |
| mOIChanges | request body | mOIChanges | array(mOIChange-Type) | M |

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| **Next modification** |

#### 12.1.1.4 Data type definitions

##### 12.1.1.4.1 General

Table 12.1.1.4.1-1: Data types defined in this specification

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Description |
| General types |  |  |
| dateTime-Type | 12.1.1.4.4.2 | Date and time |
| long-Type | 12.1.1.4.4.2 | Long type |
| uri-Type | 12.1.1.4.4.2 | Type of an URI |
| **Types used in paths** |  |  |
| className-PathType | 12.1.1.4.4.2 | Used in the path to identify a resource object |
| id-PathType | 12.1.1.4.4.2 | Used in the path to identify a resource object |
| **Types in query parts** |  |  |
| attributes-QueryType | 12.1.1.4.2.18 | Used in the query part of HTTP GET to select the attributes of the scoped resource objects to be returned. |
| fields-QueryType | 12.1.1.4.2.1 | Used in the query part of HTTP GET to select the resource object properties (attributes) to be returned |
| filter-QueryType | 12.1.1.4.2.2 | Used in the query part of HTTP GET, HTTP PATCH and HTTP DELETE to filter scoped resource objects |
| scope-QueryType | 12.1.1.4.2.3 | Used in the query part of HTTP GET, HTTP PATCH and HTTP DELETE to extend the set of targeted resources beyond the base resource identified with the path component of the URI |
| **Types used in request bodies** |  |  |
| resourcePut-RequestType | 12.1.1.4.3.4 | Used in the request body of HTTP PUT describing the resource to be created or updated |
| jsonMergePatch-RequestType | 12.1.1.4.2.19 | Used in the request body of HTTP PATCH describing the set of modifications to be applied to the targeted resources for the media type "application/merge-patch+json" (RFC 7396 [37]) |
| jsonEnhancedMergePatch-RequestType | 12.1.1.4.2.20 | Used in the request body of HTTP PATCH describing the set of modifications to be applied to the targeted resources for the media type "application/3gpp-merge-patch+json" (TS 32.158 [15]) |
| jsonPatch-RequestType | 12.1.1.4.2.5 | Used in the request body of HTTP PATCH describing the set of modifications to be applied to the targeted resources for the media type "application/json-patch+json" (RFC 6902 [36]). |
| 3gppJsonPatch-RequestType | 12.1.1.4.2.21 | Used in the request body of HTTP PATCH describing the set of modifications to be applied to the targeted resources for the media type "application/3gpp-json-patch+json" (TS 32.158 [15]) |
| **Types used in response bodies** |  |  |
| error-ResponseType | 12.1.1.4.2.6 |  |
| resourcePut-ResponseType | 12.1.1.4.2.7 | Used in the response body of HTTP PUT describing the resource created |
| resourceDeletion-ResponseType | 12.1.1.4.2.8 | Used in the response body of HTTP DELETE identifying the URIs of the deleted resources |
| resourceModification-ResponseType | 12.1.1.4.2.9 | Used in the response body of HTTP PATCH describing the set of modified resources  |
| resourceRetrieval-ResponseType | 12.1.1.4.2.10 | Used in the response body of HTTP GET to return the resources identified in the request for retrieval, or the selected attributes in case the fields query parameter is used  |
| **Types used for resources** |  |  |
| resourceRepresentationType | 12.1.1.4.2.11 | Used for resource representations |
| **Types used in notifications** |  |  |
| notifyMOICreation-NotifType | 12.1.1.4.2.15 | Used in the request body of HTTP POST for the notification type notifyMOICreation |
| notifyMOIDeletion-NotifType | 12.1.1.4.2.16 | Used in the request body of HTTP POST for the notification type notifyMOIDeletion |
| notifyMOIAttributeValueChange-NotifType | 12.1.1.4.2.17 | Used in the request body of HTTP POST for the notification type notifyMOIAttributeValueChange |
| notifyMOIChanges-NotifType | 12.1.1.4.2.22 | Used in the request body of HTTP POST for the notification type notifyMOIChanges |
| **Types referenced by the definitions above** |  |  |
| additionalText-Type | 12.1.1.4.4.2 | Allows a free form text description to be reported as defined in ITU-T Rec. X. 733 [4] |
| mOIChange-Type | 12.1.1.4.3.4 | Single MOI change reported by notifyMOIChanges |
| correlatedNotification-Type | 12.1.1.4.3.2 | Describes the correlated notifications of a single source |
| notificationId-Type | 12.1.1.4.4.2 | Notification identifier as defined in ITU-T Rec. X. 733 [4] |
| notificationType-Type | 12.1.1.4.4.3 | Notification type (notifyMOICreation, etc.) |
| sourceIndicator-Type | 12.1.1.4.4.4 | Indicates the source of the operation that led to the generation of the notification. |
| scopeType-Type | 12.1.1.4.4.5 | Scope type of a scope |
| scopeLevel-Type | 12.1.1.4.4.2 | Scope level of a scope |
| systemDN-Type | 12.1.1.4.4.2 | Type of the System DN |
| operation-Type | 12.1.1.4.4.6 | Enum wth "create", "delete" and "replace" |

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| **Next modification** |

###### 12.1.1.4.2.22 Type notifyMOIChanges-NotifType

**Table 12.1.1.4.2.22-1: Definition of type notifyMOIChanges-NotifType**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute name** | **Data type** | **Description** | **SQ** |
| href | uri-Type | URI of the local root in the MIB | M |
| notificationId | notificationId-Type | Notification identifier as defined in ITU-T Rec. X. 733 [4]. | M |
| notificationType | notificationType-Type | Notification type (notifyMOIChanges) | M |
| eventTime | dateTime-Type | Event (NRM updates) occurrence time | M |
| systemDN | systemDN-Type | System DN | M |
| mOIChanges | array(mOIChange-Type) | MOI changes to be reported | M |

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| **Next modification** |

###### 12.1.1.4.3.3 Type MOIChange-Type

Table 12.1.1.4.3.3-1: Definition of type MOIChange-Type

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute name | Data type | Description | SQ |
| notificationId | notificationId-Type | Notification identifier as defined in ITU-T Rec. X. 733 [4] | M |
| correlatedNotifications | array(correlatedNotification-Type) | Set of all notifications to which this notification is considered to be correlated as defined in ITU-T Rec. X. 733 [4] | O |
| additionalText | additionalText-Type | Allows a free form text description to be reported as defined in ITU-T Rec. X. 733 [4] | O |
| sourceIndicator | sourceIndicator-Type | Indicates the source of the operation that led to the generation of this notification. | O |
| path | URI-Type | URI specifying the updated resource | M |
| operation | operation-Type | Operation associated to the reported change ("CREATE", "DELETE", "REPLACE") | M |
| value | object or array | For reporting resource creation or deletion, the optional complete resource representation. In this case the data type of value is an object.For reporting attribute value changes, the (optional) old values and (mandatory) new values. In this case the data type of value is an array with min. one and max. two items of type object. | CM |

For a create and delete operation only the host and path components are present in the URI carried by "path" and identify the created or deleted resources. The "value" may optionally carry the complete resource representation of the created or deleted resource.

For a replace operation two cases need to be distnguished.

In the first case, values changes of complete attributes of a MOI are reported. Only the host and path components are present in the URI carried by "path". The "value" is an array of min. one and max. two items. If only one item is present it carries the new resource representation with the attributes not changed being absent. If two items are present in the array, the first item carries the old resource representation with the attributes not changed being absent, and the second item carries the new resource representation with the attributes not changed being absent. The order of items in the array carries semantics and shall therefore not be reversed.

In the second case, a value change of an attribute part is reported. Here the URI needs to carry besides the host and path components also the fragment component. The URI fragment is specified using JSON pointer in the URI fragment identifier representation as defined in clause 6 of of RFC 6901 [w]. The context for JSON pointer is the updated resource. The "value" is an array of min. one and max. two items. If only one item is present it carries the new value of the attribute part. If two items are present in the array, the first item carries the old value of the attribute part, and the second item carries the new value of the attribute part. Hence also in this case the order of items in the array carries semantics and shall not be reversed.

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| **Next modification** |

12.1.1.4.4.6 Enumeration operation-Type

Table 12.1.1.4.4.4.6-1: Enumeration operation-Type

|  |  |
| --- | --- |
| Enumeration value | Description |
| CREATE | Create operation |
| DELETE | Delete operation |
| REPLACE | Replace operation |

|  |
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| **Next modification** |

## A.1.1 Generic provisioning management service

openapi: 3.0.1

info:

 title: 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}/ProvMnS/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'

 mOIChange-Type:

 type: object

 properties:

 notificationId:

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

 correlatedNotifications:

 type: array

 items:

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

 additionalText:

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

 sourceIndicator:

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

 path:

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

 operation:

 type: string

 enum:

 - CREATE

 - DELETE

 - REPLACE

 value:

 oneOf:

 - type: object

 additionalProperties:

 nullable: true

 - type: array

 items:

 type: object

 minItems: 1

 maxItems: 2

 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

 notifyMOIChanges-NotifType:

 allOf:

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

 - type: object

 properties:

 mOIChanges:

 type: array

 items:

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

 required:

 - mOIChanges

|  |
| --- |
| **End of modifications** |