Frameworx Specification

Service Catalog Management API REST Specification

TMF633
Release 16.5.1
April 2017

Latest Update: Frameworx Release 16.5	TM Forum Approved
Version 1.4.1	IPR Mode: RAND

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INTRODUCTION

The following document is the template for the REST API documentation.

The Service Catalog Management API allows the management of the entire lifecycle of the service catalog elements.

SAMPLE USE CASES

Lifecycle Management Use Case

The Service Catalog Management API allows the management of the entire lifecycle of the service catalog elements.

UC1: A partner updates its catalog, and notifies the distributor of the catalog change. The distributor requests a catalog export and retrieves the catalog at the provided URL.
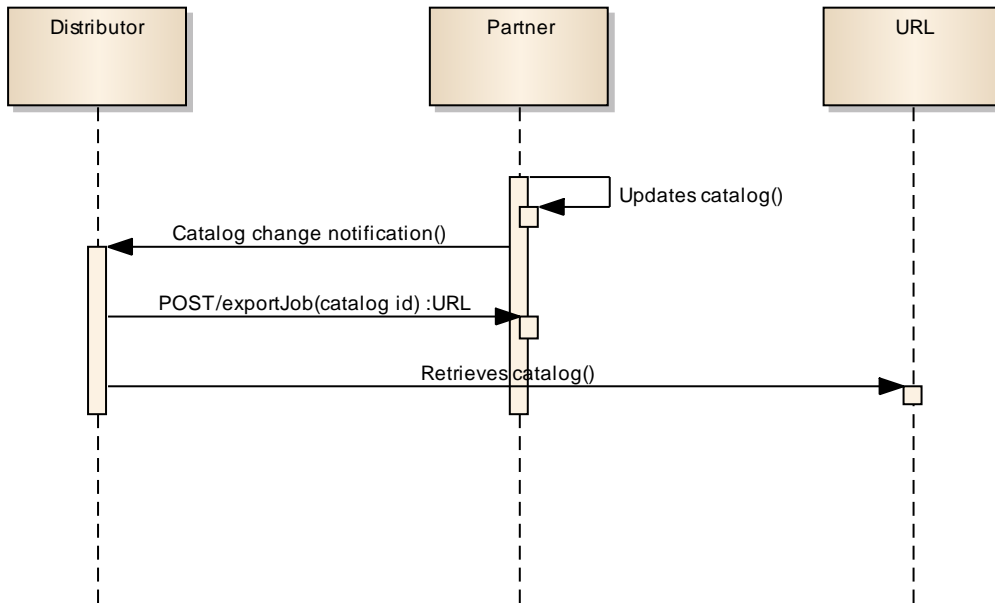
UC2: A partner updates its catalog and notifies all catalog changes in detail to the distributor. The distributor then updates its copy of the catalog by following the changes.
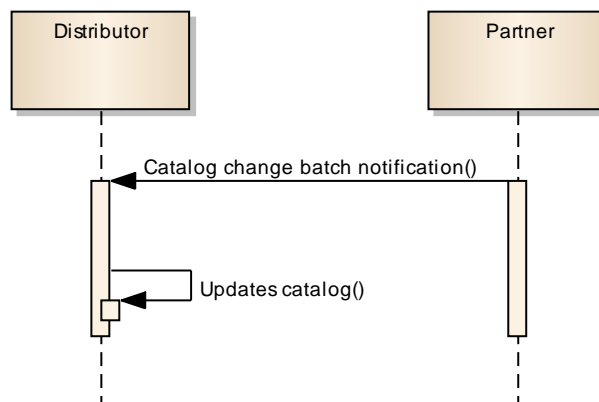
UC3: A catalog administrator wants to retrieve effective duration of a service candidate by ID (GET/serviceCandidate/:id).

UC4: A catalog administrator wants to retrieve all available service candidates (GET/serviceCandidate).

UC5: A catalog administrator wants to update the lifecycle status (from Launched to retired for example) of a service candidate (PUT or PATCH/serviceCandidate).

Order management Use Case

The service catalog management API allows the lookup of the catalog elements during order capture.

UC1: The provider wants to browse resource-facing service candidates during service order capture and to retrieve service candidates belonging to a given category. He gets all details on service candidates, service specifications and their characteristics (GET/serviceCandidate).

UC2: The provider wants to retrieve the characteristics of a given service candidate. (GET/serviceCandidate/:id).

UC3: The customer wants to retrieve the characteristics of a given customer-facing service candidate. (GET/serviceCandidate/:id).

RESOURCE MODEL

Managed Entity and Task Resource Models

Service Lifecycle Management:

Service Lifecycle Management (SLM) is responsible for managing the entire lifecycle of the catalog element and its underlying components. This includes all of the processes required to design, build, deploy, maintain and ultimately retire the catalog element.
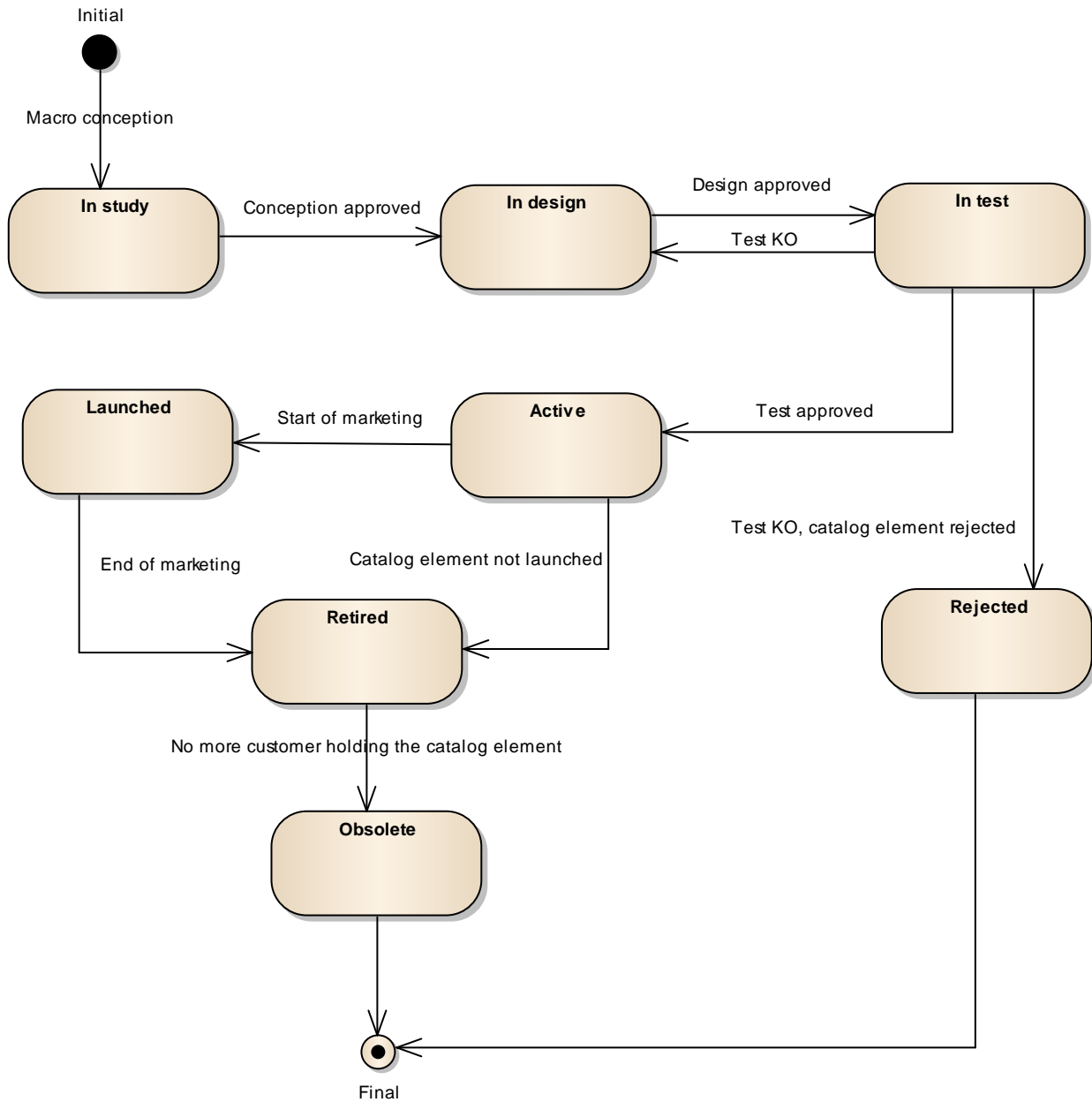
When the macro conception of a catalog element is started the first status of the later is "In Study".

When the conception of the catalog element is accepted its status is changed to "In Design".

If the design is approved its status is changed to "In Test".

Then either the test is OK and then its status is changed to "Active" or the test is KO and its status is changed to "Rejected". The Rejected status is a final status.

When a catalog element is in a "Active" status it means it has been validated and tested, but it is still not available for customers.

When the beginning of marketing is reached, its status is changed to "Launched". At this moment customers can buy it.

If the catalog element is not launched, its status is changed to "Retired".

The same status is achieved when a catalog element reaches the end of marketing.

The "Retired" status means it cannot be sold to any new customers, but previous customers can still have it.

When no more customers hold the catalog element, its status is changed to "Obsolete" meaning it can be removed from the catalog.

SERVICE CATALOG

The root entity for service catalog management.

A service catalog is a group of ServiceSpecifications made available through ServiceCandidates that an organization provides to the consumers (internal consumers like its employees or B2B customers or B2C customers). A service catalog typically includes name, description and time period that is valid for. It will have a list of ServiceCandidates. A ServiceCandidate is an entity that makes a ServiceSpecification available to a catalog.

A ServiceCandidate and its associated ServiceSpecification may be "published" – made visible – in any number of ServiceCatalogs, or in none. One ServiceSpecification can be composed of other ServiceSpecifications. These ServiceSpecifications may also be published.

Below is a representation of the Service Catalog resource in JSON format.

```
{
        "id": "10",
        "href": "http://serverlocation:port/catalogManagement/serviceCatalog/10",
        "version": "2.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "type": "ServiceCatalog",
        "category": [
```

```json
            {
                "id": "42",
                "href": "http://serverlocation:port/catalogManagement/category/42",
                "version": "2.0",
                "name": "Cloud Services"
            }
    ],
    "name": "Catalog Wholesale Business",
    "lifecycleStatus": "Active",
    "validFor": {
            "startDateTime": "2016-07-23T16:42:23-04:00",
            "endDateTime": "2017-07-23T00:00:00-04:00"
    },
    "relatedParty": [
            {
                "role": "Owner",
                "id": "1234",
                "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
            }, {
                "role": "Reviser",
                "name": "Roger Collins"
            }
    ]
}
```

Field Descriptions :

Field	Description
category	Reference to the category
href	Hyperlink reference to the catalog
id	Unique identifier of the catalog
lastUpdate	Date and time of the last update
lifecycleStatus	Used to indicate the current lifecycle status
name	Name of the catalog
type	Indicates the type of catalog. For service catalogs, this will always be 'ServiceCatalog'.
validFor	The period for which the catalog is valid
version	Catalog version

RelatedParty: Defines party or partyRole linked to a specific entity.

Field	Description
id	Unique identifier of related party
href	Hyperlink reference to the relatedParty, could be a party reference or a partyRole reference
name	Name of the related party
role	Role of the related party

validFor	The period for which the related party is linked to the entity

UML model:
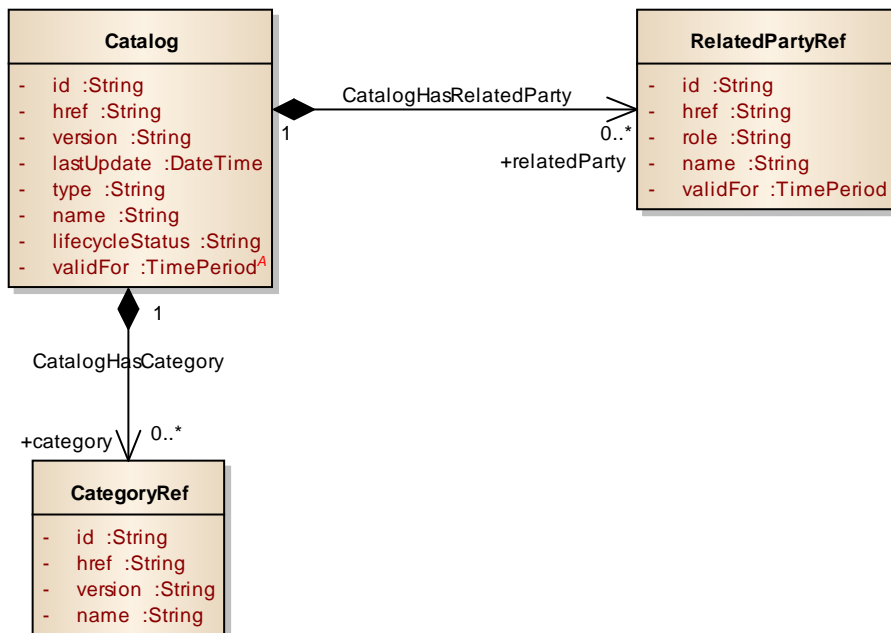
CATEGORY

The category resource is used to group service candidates in logical containers.

Categories can contain other categories and/or service candidates.

Resource IDs for categories are strings and are defined by the catalog application.

Below is a representation of the Category resource in JSON format.

```
{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/category/42",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "version": "2.0",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": ""
        },
        "parentId": "41",
        "isRoot": false,
```

```
        "name": "Cloud Services",
        "description": "A category to hold all available cloud service offers"
}
Or for a root category (e.g. no parent)
{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/category/42",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "version": "2.0",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": ""
        },
        "parentId": "",
        "isRoot": true,
        "name": "Cloud Services",
        "description": "A category to hold all available cloud services"
}
```

Field Descriptions :

Category: is used to group product offerings, service and resource candidates in logical containers. Categories can contain other categories and/or product offerings, resource or service candidates.

Field	Description
description	Description of the category
href	Hyperlink reference to the catalog
id	Unique identifier of the category
isRoot	If true, this Boolean indicates that the category is a root of categories
lastUpdate	Date and time of the last update
lifecycleStatus	Used to indicate the current lifecycle status
name	Name of the category
parentId	Unique identifier of the parent category
validFor	The period for which the category is valid
version	Category version

UML model:

```
Category

-   id :String
-   href :String
-   lastUpdate :DateTime
-   version :String
-   lifecycleStatus :String
-   validFor :TimePeriod
-   parentId :String
-   isRoot :Boolean
-   name :String
-   description :String        A
```

SERVICE CANDIDATE

A ServiceCandidate is an entity that makes a ServiceSpecification available to a catalog. A ServiceCandidate and its associated ServiceSpecification may be published - made visible - in any number of ServiceCatalogs, or in none. One ServiceSpecification can be composed of other ServiceSpecifications. The Service Candidate consists of a subset of ServiceSpecification characteristics to fulfill a product offering. These ServiceSpecifications may also be published.

The Service Candidate resource (JSON format) represents a set of characteristics that define the values given by the ServiceSpecification.

Resource IDs are numeric and generated by the Catalog application.

Below is a representation of the ServiceCandidate resource in JSON format.

```
{
    "id": "42",
    "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
    "name": "Virtual Storage Medium",
    "version": "2.0",
    "description": "Virtual Storage Medium",
    "lastUpdate": "2013-04-19T16:42:23-04:00",
    "lifecycleStatus": "Active",
    "validFor": {
        "startDateTime": "2013-04-19T16:42:23-04:00",
        "endDateTime": "2013-06-19T00:00:00-04:00"
    },
    "category": [
        {
            "id": "12",
            "href": "http://serverlocation:port/catalogManagement/category/42",
            "version": "2.0",
```

```
                    "name": "Cloud Services"
            }
    ],
    "serviceLevelAgreement": {
            "id": "28",
            "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
            "name": "Standard SLA"
    },
    "serviceSpecification": {
            "id": "13",
            "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
            "name": "specification 1",
            "version": "1.1"
    }
}
```

UML model:
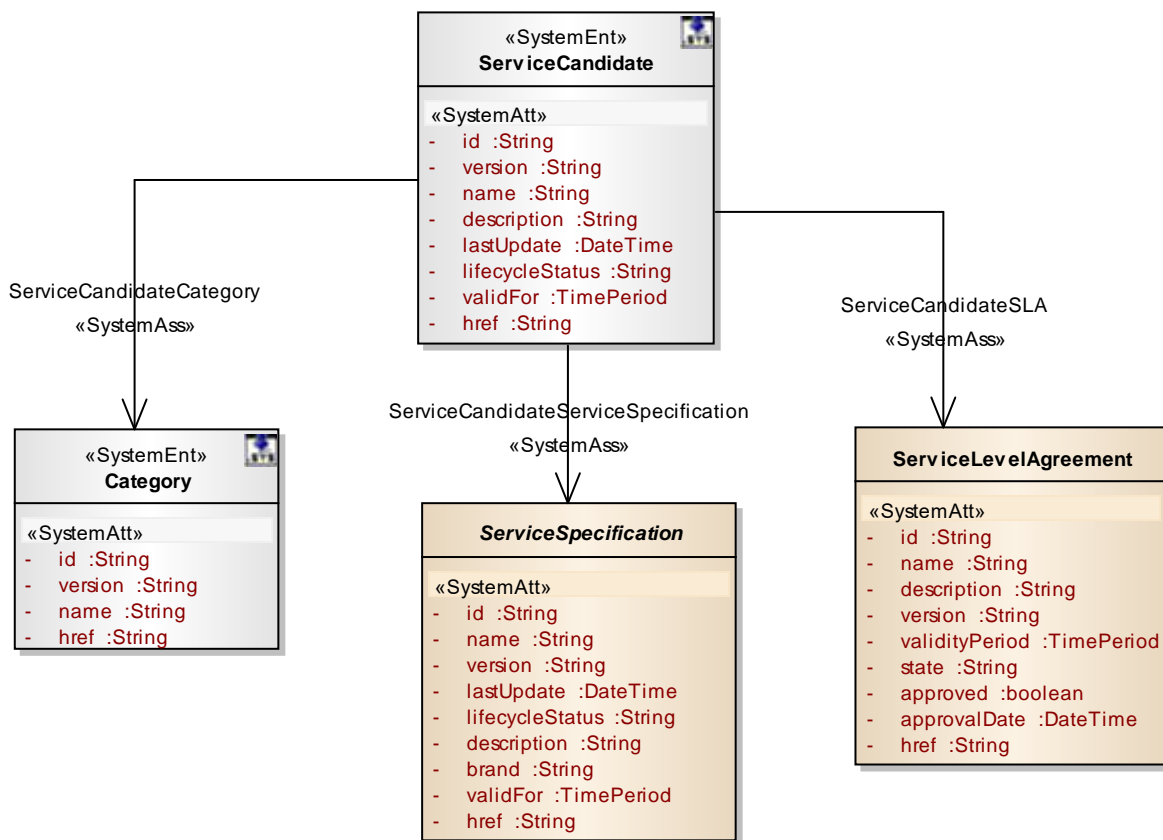
SERVICE SPECIFICATION

ServiceSpecification is a class that offers characteristics to describe a type of service.

Functionally, it acts as a template by which Services may be instantiated. By sharing the same specification, these services would therefore share the same set of characteristics.

Note: The 'configurable' attribute on the serviceSpecCharacteristics determines if a Service instantiated from the serviceSpecification can override the value of the attribute. When set to false, the service instance may not define a value that differs from the value in the specification.

Below is a representation of the ServiceSpecification resource in JSON format.

```json
{
        "id": "22",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
        "version": "2.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "name": "Virtual Storage Medium",
        "type": "CustomerFacingService",
        "description": "Virtual storage via the cloud.",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "attachment": [],
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }
        ],
        "serviceSpecRelationship": [
                {
                        "type": "dependency",
                        "id": "23",
                        "href": "
http://serverlocation:port/catalogManagement/serviceSpecification/23",
        "validFor": {
                        "startDateTime": "2013-04-19T16:42:23-04:00",
                        "endDateTime": ""
                }
        }
        ],
```

```json
        "requiredResourceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
        ],
        "serviceSpecCharacteristic": [
                {
                        "name": " Size",
                        "description": " size",
                        "valueType": "number",
                        "configurable": true,
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        },
                        "serviceSpecCharRelationship": [],
                        "serviceSpecCharacteristicValue": [
                                {
                                        "valueType": "number",
                                        "default": true,
                                        "value": "500",
                                        "unitOfMeasure": "MB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
                                {
                                        "valueType": "number",
                                        "default": false,
                                        "value": "10",
                                        "unitOfMeasure": "GB",
                                        "valueFrom": "",
```

```json
                              "valueTo": "",
                              "validFor": {
                                     "startDateTime": "2013-04-19T16:42:23-04:00",
                                     "endDateTime": ""
                              }
                       },
                       {
                              "valueType": "number",
                              "default": false,
                              "value": "50",
                              "unitOfMeasure": "GB",
                              "valueFrom": "",
                              "valueTo": "",
                              "validFor": {
                                     "startDateTime": "2013-04-19T16:42:23-04:00",
                                     "endDateTime": ""
                              }
                       },
                ]
          }
    ]
}
```

Field Descriptions :

Attachment: describes a service through video, pictures...

Field	Description
description	Description of the attachment
href	Hyperlink reference to the attachment
id	Unique identifier of the attachment
type	Attachment type such as video, picture
uri	Uniform Resource Identifier, describes the mechanism used to access the resource, the specific computer that the resource is housed in, the specific name of the resource (file name) on the computer
url	Uniform Resource Locator, is a web page address (a subset of URI)

Catalog: A service catalog is a group of ServiceSpecifications made available through ServiceCandidates that an organization provides to the consumers (internal consumers like its employees or B2B customers or B2C customers). A service catalog typically includes name, description and time period that it is valid for. It will have a list of ServiceCandidates. A ServiceCandidate is an entity that makes a ServiceSpecification available to a catalog.

Field	Description
category	Reference to the category
href	Hyperlink reference to the catalog
id	Unique identifier of the catalog
lastUpdate	Date and time of the last update
lifecycleStatus	Used to indicate the current lifecycle status
name	Name of the catalog
type	Indicates if the catalog is a product, service or resource catalog
validFor	The period for which the catalog is valid
version	Catalog version

Category: The category resource is used to group service candidates in logical containers. Categories can contain other categories and/or product offerings, resource or service candidates.

Field	Description
description	Description of the category
href	Hyperlink reference to the catalog
id	Unique identifier of the category
isRoot	If true, this Boolean indicates that the category is a root of categories
lastUpdate	Date and time of the last update
lifecycleStatus	Used to indicate the current lifecycle status
name	Name of the category
parentId	Unique identifier of the parent category
validFor	The period for which the category is valid
version	Category version

ServiceSpecCharacteristic: A characteristic quality or distinctive feature of a ServiceSpecification. The characteristic can be take on a discrete value, such as color, can take on a range of values, (for example, sensitivity of 100-240 mV), or can be derived from a formula (for example, usage time (hrs) = 30 – talk time *3). Certain characteristics, such as color, may be configured during the ordering or some other process.

Field	Description
configurable	If true, the Boolean indicates that the serviceSpecCharacteristic is configurable
description	A narrative that explains in detail what the serviceSpecCharacteristic is
href	Hyperlink reference to the serviceSpecCharacteristic
id	Unique identifier of the serviceSpecCharacteristic
name	Name of the serviceSpecCharacteristic
valueType	A kind of value that the characteristic can take on, such as numeric, text and so forth
validFor	The period for which the serviceSpecCharacteristic is valid

ServiceSpecCharRelationship: An aggregation, migration, substitution, dependency or exclusivity relationship between/among serviceSpecCharacteristics.

Field	Description
href	Hyperlink reference to the serviceSpecCharacteristic
validFor	The period for which the relationship is valid
type	Type of relationship such as aggregation, migration, substitution, dependency, exclusivity

ServiceSpecCharacteristicValue: A number or text that can be assigned to a ServiceSpecCharacteristic.

Field	Description
default	Indicates if the value is the default value for a characteristic
unitOfMeasure	Could be minutes, GB, etc
validFor	The period of time for which a value is applicable
value	A discrete value that the characteristic can take on
valueFrom	The low range value that a characteristic can take on
valueTo	The upper range value that a characteristic can take on
valueType	A kind of value that the characteristic can take on, such as numeric, text, and so forth

ServiceSpecificationRelationship: A migration, substitution, dependency or exclusivity relationship between/among service specifications.

Field	Description
id	Identifier for the serviceSpecification
href	Hyperlink reference to the serviceSpecification
validFor	The period for which the serviceSpecificationRelationship is valid
Type	Type of relationship such as migration, substitution, dependency, exclusivity

RelatedParty: Defines party or partyRole linked to a specific entity.

Field	Description
id	Identifier for the related party or partyRole
href	Hyperlink reference to the relatedParty, could be a party reference or a partyRole reference
name	Name of the related party
role	Role of the related party
validFor	The period for which the related party is linked to the entity

RequiredResourceSpecification: Refers to the ResourceSpecifications required to realize a ServiceSpecification.

Field	Description
id	Identifier for the RequiredResourceSpecification
href	Hyperlink reference to the RequiredResourceSpecification
name	Name of the RequiredResourceSpecification
validFor	The period for which the RequiredResourceSpecification is valid

RequiredServiceSpecification: Refers to the ServiceSpecifications required to realize a ServiceSpecification.

Field	Description
id	Identifier for the RequiredServiceSpecification
href	Hyperlink reference to the RequiredServiceSpecification
name	Name of the RequiredServiceSpecification
validFor	The period for which the RequiredServiceSpecification is valid

ServiceSpecCharacteristic: This class represents the key features of this ServiceSpecification. For example, bandwidth is a characteristic of many different types of services; if bandwidth is a relevant characteristic (e.g., from the point-of-view of a Customer obtaining this Service via a Product) then bandwidth would be a ServiceCharacteristic for that particular Service.

Field	Description
configurable	If true, the Boolean indicates that the serviceSpecCharacteristic is configurable
description	A narrative that explains in detail what the serviceSpecCharacteristic is
href	Hyperlink reference to the serviceSpecCharacteristic
id	Unique identifier of the serviceSpecCharacteristic
name	Name of the serviceSpecCharacteristic
valueType	A kind of value that the characteristic can take on, such as numeric, text and so forth
validFor	The period for which the serviceSpecCharacteristic is valid

UML model:
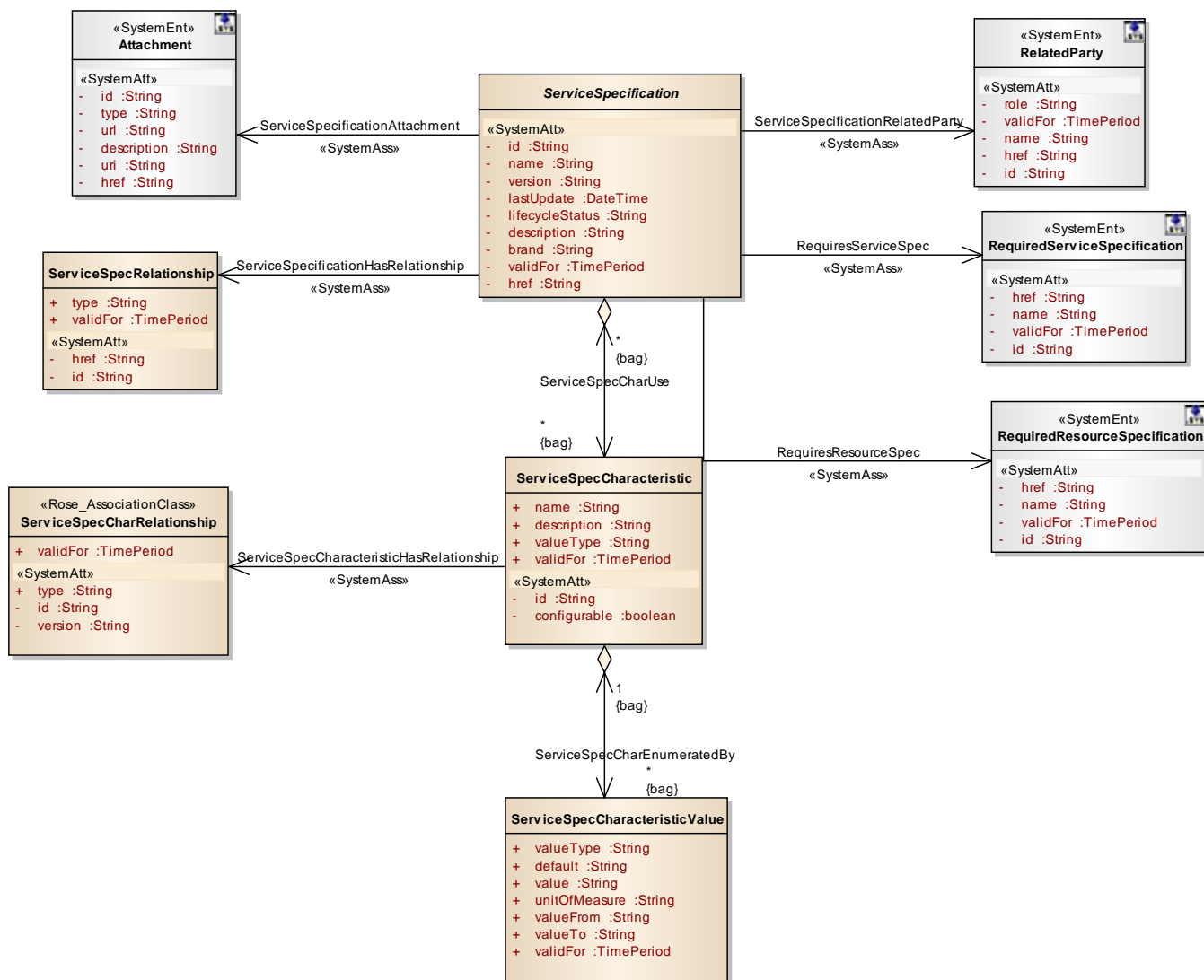
Figure 1- ServiceSpecification resource model

NOTIFICATION RESOURCE MODELS

Two notification event types are defined:

1. CatalogChangeNotification
2. CatalogChangeBatchNotification

Catalog Notification UML Diagram:
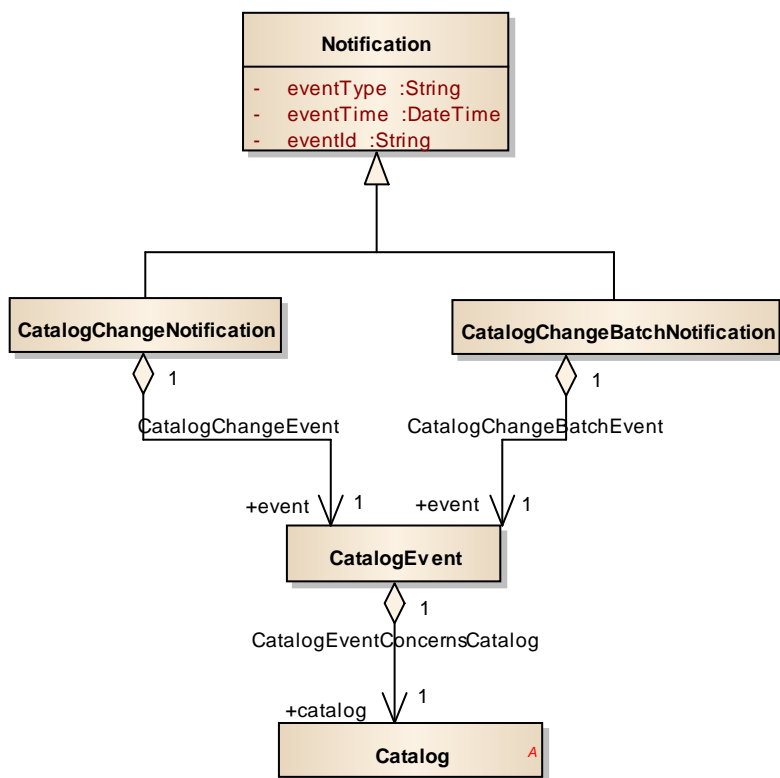
Catalog change notification: notifies that a catalog has been updated.

```
{
    "event": {
        "id": "01",
        "dateTime": "2013-04-19T16:42:25-30:00",
        "eventType": "Catalog change notification",
        "catalog": [
            {
                "id": "10",
                "href": "http://serverlocation:port/catalogManagement/catalog/10",
                "version": "2.0",
                "lastUpdate": "2013-04-19T16:42:23-04:00",
                "type": "ServiceCatalog",
                "name": "Catalog Wholesale Business"
            }
        ]
    }
}
```

Catalog change batch notification: notifies in detail all catalog updates.

```
{
  "event":{
    "id":"01",
    "dateTime":"2013-04-19T16:42:25-30:00",
    "eventType":"Catalog change batch notification",
    "catalog":[
      {
        "id":"10",
        "href":"http://serverlocation:port/catalogManagement/catalog/10",
        "version":"2.0",
        "lastUpdate":"2013-04-19T16:42:23-04:00",
        "type":"ServiceCatalog",
        "name":"Catalog Wholesale Business",
        "update":[
          {
            "op":"add",
            "path":"/category",
            "value":{
              "id":"45",
              "href":"http://serverlocation:port/catalogManagement/category/45",
              "lastUpdate":"2016-08-12T16:42:23-04:00",
              "version":"1.0",
              "lifecycleStatus":"Active",
              "validFor":{
                "startDateTime":"2016-08-12:42:23-04:00",
                "endDateTime":""
              },
              "parentId":"41",
              "isRoot":true,
              "name":"Residential Fibre Services",
              "description":"A category to hold all available residential fibre offers"
            }
          },
          {
            "op":"add",
            "path":"/category",
            "value":{
              "id":"42",
              "href":"http://serverlocation:port/catalogManagement/category/42",
              "lastUpdate":"2013-04-19T16:42:23-04:00",
              "version":"2.0",
              "lifecycleStatus":"Active",
              "validFor":{
                "startDateTime":"2013-04-19T16:42:23-04:00",
                "endDateTime":""
              },
              "parentId":"41",
              "isRoot":false,
              "name":"Cloud Services",
```

```json
          "description":" A category to hold all available cloud service offers "
      }
    },
    {
      "op":"add",
      "path":"/serviceSpecification",
      "value":{
        "id":"36",
        "href":"http://serverlocation:port/catalogManagement/serviceSpecification/36",
        "version":"1.0",
        "lastUpdate":"2016-08-12T16:42:23-04:00",
        "name":"Residential Fibre",
        "description":"A residential fibre service",
        "lifecycleStatus":"Active",
        "validFor":{
          "startDateTime":"2013-04-19T16:42:23-04:00",
          "endDateTime":"2013-06-19T00:00:00-04:00"
        },
        "relatedParty":[
          {
            "role":"Owner",
            "id":"1234",
            "href":"http ://serverLocation:port/partyManagement/partyRole/1234"
          }
        ],
        "serviceSpecCharacteristic":[
          {
            "name":"Connection Number",
            "description":"Connection Number",
            "valueType":"number",
            "configurable":true,
            "validFor":{
              "startDateTime":"2016-08-12T16:42:23-04:00",
              "endDateTime":""
            },
            "serviceSpecCharacteristicValue":[
              {
                "valueType":"string",
                "default":false,
                "value":"",
                "unitOfMeasure":"",
                "valueFrom":"",
                "valueTo":"",
                "validFor":{
                  "startDateTime":"2016-08-12T16:42:23-04:00",
                  "endDateTime":""
                }
              }
            ]
```

```
                    }
                ]
            }
          }
        ]
      }
    ]
  }
]
}
}
```

Export and Import Job Notifications

1. Export Job Completion Notification
2. Import Job Completion Notification

UML Model:
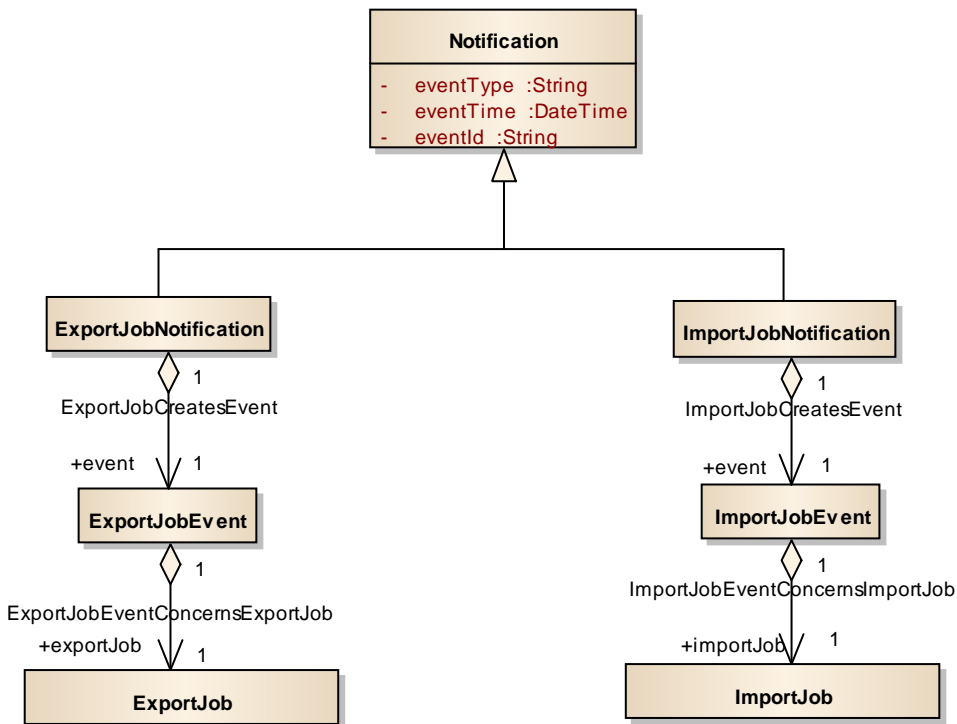
Event: ExportJobCompletionNotification

```
{
```

```
"eventType": "ExportJobCompletionNotification",
"eventTime": "2014-09-27T05:46:25.0Z",
"eventId": "1154278",
"event": {"exportJob": {
    "id": "54",
    "href": "http:/api/catalogManagement/exportJob/54",
    "status": "succeeded",
    "path": "catalogManagement/",
    "content-type": "application/json",
    "errorLog": "",
    "creationDate": "2013-04-19T16:42:23-04:00",
    "completionDate": "2013-04-21T16:42:23-04:00",
    "url": "ftp://ftp.mycatalog.com/catalogManagement/54.json"
}}
}
```

Event: ImportJobCompletionNotification

```
{
"eventType": "ImportJobCompletionNotification",
"eventTime": "2014-09-27T05:46:25.0Z",
"eventId": "1154278",
"event": {"importJob": {
    "id": "54",
    "href": "http:/api/catalogManagement/importJob/54",
    "status": "succeeded",
    "path": "catalogManagement/",
    "content-type": "application/json",
    "errorLog": "",
    "creationDate": "2013-04-19T16:42:23-04:00",
    "completionDate": "2013-04-21T16:42:23-04:00",
    "url": "ftp://ftp.mycatalog.com/catalogManagement/54.json"
}}
}
```

API OPERATION TEMPLATES

For every single of operation on the entities use the following templates and provide sample REST requests and responses.

Remember that the following Uniform Contract rules must be used :

Operation on Entities	Uniform API Operation	Description
Query Entities	GET Resource	GET must be used to retrieve a representation of a resource.
Create Entity	POST Resource	POST must be used to create a new resource
Partial Update of an Entity	PATCH Resource	PATCH must be used to partially update a resource
Complete Update of an Entity	PUT Resource	PUT must be used to completely update a resource identified by its resource URI
Remove an Entity	DELETE Resource	DELETE must be used to remove a resource
Execute an Action on an Entity	POST on TASK Resource	POST must be used to execute Task Resources
Other Request Methods	POST on TASK Resource	GET and POST must not be used to tunnel other request methods.

Filtering and attribute selection rules are described in the TMF REST Design Guidelines.

Notifications are also described in a subsequent section.

GET /catalogManagement/serviceCatalog/{ID}

This Uniform Contract operation is used to retrieve the representation of the service catalog managed entity or collection.

Note that the SERVICECATALOG collection can be retrieved via GET /API/SERVICECATALOG with no {ID}

Description :

- This operation returns service catalogs.
- The resource instance being returned is a ServiceCatalog or an array of ServiceCatalogs if the query returns multiple specifications.
- The resource represents a managed entity or a collection.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned?
  - 200 if no serviceCandidate found
  - 404 Not found when the supplied ID doesn't match a known ServiceCandidate.
- Filtering is enabled on all ServiceCandidate attributes.
- Attribute selection is enabled.

REQUEST

```
GET /catalogManagement/serviceCatalog/{10}
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json

{
      "id": "10",
      "href": "http://serverlocation:port/catalogManagement/serviceCatalog/10",
      "version": "2.0",
      "lastUpdate": "2013-04-19T16:42:23-04:00",
      "type": "ServiceCatalog",
      "category": [
            {
                  "id": "42",
                  "href": "http://serverlocation:port/catalogManagement/category/42",
                  "version": "2.0",
                  "name": "Cloud Services"
            }
      ],
      "name": "Catalog Wholesale Business",
      "lifecycleStatus": "Active",
      "validFor": {
```

```
                "startDateTime": "2016-07-23T16:42:23-04:00",
                "endDateTime": "2017-07-23T00:00:00-04:00"
        },
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }, {
                        "role": "Reviser",
                        "name": "Roger Collins"
                }
        ]
}
```

GET /catalogManagement/category

This Uniform Contract operation is used to retrieve the representation of a managed entity or a task.

Note that collections can be retrieved via GET /API/<RESOURCE> with no {ID}

Description :

- This operation retrieves serviceCategory from a catalog. The category resource is used to group product offerings, service and resource candidates in logical containers. Categories can contain other categories and/or product offerings, resource or service candidates.
- The resource represents a managed entity or a collection depending on the query pattern.
- The identifier is a string that can consist of numbers, not necessarily alphanumeric.

Behavior :

- Standard behavior and response codes for GET operations
- Filtering is enabled on all attributes, particularly due to the hierarchical nature of serviceCategory, children of a productCategory are obtained by filtering on the parentId attribute of the resource.
- Attribute selection is not enabled for this simple resource

REQUEST

GET /catalogManagement/category/{12}

Accept: application/json

RESPONSE

```
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/category/42",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "version": "2.0",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": ""
        },
        "parentId": " 41",
        "isRoot": false,
        "name": "Cloud Services",
        "description": "A category to hold all available cloud service offers"
}
```

GET /catalogManagement/serviceCandidate/{ID}

This Uniform Contract operation is used to retrieve the representation of the serviceCandidate managed entity or collection.

Note that the SERVICECANDIDATE COLLECTION can be retrieved via GET /API/SERVICECANDIDATE with no {ID}

Description :

- This operation returns ServiceCandidates. A ServiceCandidate is an entity that makes a ServiceSpecification available to a catalog.
- The resource instance being returned is a ServiceCandidate or an array of ServiceCandidates if the query returns multiple specifications.
- The resource represents a managed entity or a collection.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
  - 200 if no serviceCandidate found
  - 404 Not found when the supplied ID doesn't match a known ServiceCandidate.
- Filtering is enabled on all ServiceCandidate attributes.

- Attribute selection is enabled.

REQUEST

```
GET /catalogManagement/serviceCandidate/{42}
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "name": "Virtual Storage Medium",
        "version": "2.0",
        "description": "Virtual Storage Medium",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "category": [
                {
                        "id": " 42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud service"
                }
        ],
        "serviceLevelAgreement": {
                "id": " 28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
        },
        "serviceSpecification": {
                "id": " 13",
                "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
                "name": "specification 1",
                "version": "1.1"
        }
}
```

GET /catalogManagement/serviceSpecification/{ID}

This Uniform Contract operation is used to retrieve the representation of a managed entity or collection.

Note that collections can be retrieved via GET /API/SERVICESPECIFICATION with no {ID}

Description :

- This operation returns ServiceSpecifications.
- The resource instance being returned is a ServiceSpecification or an array of ServiceSpecifications if the query returns multiple specifications.
- The resource represents a managed entity or a collection.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
    - 200 if no ServiceSpecification found when retrieving a collection.
    - 404 Not found when the supplied ID doesn't match a known ServiceSpecification.
- Filtering is enabled on all ServiceSpecification attributes.
- Attribute selection is enabled.

REQUEST

```
GET /catalogManagement/serviceSpecification/{22}
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json

{
  "id": "22",
  "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
  "version": "3.0",
  "lastUpdate": "2013-04-19T16:42:23-04:00",
  "lifecycleStatus": "Active",
  "name": "Virtual Storage Medium",
  "type": "CustomerFacingService",
  "description":" Virtual storage via the cloud.",
  "validFor": {
    "startDateTime": "2013-04-19T16:42:23-04:00",
    "endDateTime": "2013-06-19T00:00:00-04:00"
  },
  "attachment": [],
```

```json
"relatedParty": [
    {
        "role": "Owner",
        "id": "1234",
        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
    }
],
"serviceSpecRelationship": [
    {
        "type":"dependency ",
        "id": "23",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/23",
        "validFor": {
            "startDateTime": "2013-04-19T16:42:23-04:00",
            "endDateTime": ""
        }
    }
],
"requiredServiceSpecification": [
    {
        "id": "13",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
        "name": "specification 1",
        "validFor": {
            "startDateTime": "2013-04-19T16:42:23-04:00",
            "endDateTime": ""
        }
    }
],
"requiredResourceSpecification": [
    {
        "id": "13",
        "href": "http://serverlocation:port/catalogManagement/resourceSpecification/13",
        "name": "specification 1",
        "validFor": {
            "startDateTime": "2013-04-19T16:42:23-04:00",
            "endDateTime": ""
        }
    }
],
"serviceSpecCharacteristic": [
    {
        "name": "Size",
```

```
"description": "size",
"valueType": "number",
"configurable": true,
"validFor": {
   "startDateTime": "2013-04-19T16:42:23-04:00",
   "endDateTime": ""
},
"serviceSpecCharRelationship": [],
"serviceSpecCharacteristicValue": [
   {
      "valueType": "number",
      "default": true,
      "value": "500",
      "unitOfMeasure": "MB",
      "valueFrom": "",
      "valueTo": "",
      "validFor": {
         "startDateTime": "2013-04-19T16:42:23-04:00",
         "endDateTime": ""
      }
   },
   {
      "valueType": "number",
      "default": false,
      "value":"10",
      "unitOfMeasure": "GB",
      "valueFrom": "",
      "valueTo": "",
      "validFor": {
         "startDateTime": "2013-04-19T16:42:23-04:00",
         "endDateTime": ""
      }
   },
   {
      "valueType": "number",
      "default": false,
      "value": "50",
      "unitOfMeasure": "GB",
      "valueFrom": "",
      "valueTo": "",
      "validFor": {
         "startDateTime": "2013-04-19T16:42:23-04:00",
         "endDateTime": ""
```

```
            }
        }
      ]
    }
  ]
}
```

GET /catalogManagement/exportJob/{ID}

This Uniform Contract operation is used to retrieve the representation of a managed entity or collection.

Note that collections can be retrieved via GET /API/<RESOURCE> with no {ID}

Description :

- This operation returns the status of an exportJob.
- The resource represents a managed entity or a collection.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
    - 200 if no ExportJob found
    - 404 Not found when the supplied ID doesn't match a known ExportJob.
- Filtering is enabled on all ExportJob attributes.
- Attribute selection is enabled.

GET /catalogManagement/exportJob/{10}
Accept: application/json

RESPONSE

200
Content-Type: application/json

```
{
      "id": "10",
      "status": "Succeeded"
}
```

GET /catalogManagement/importJob/{ID}

This Uniform Contract operation is used to retrieve the representation of a managed entity or collection.

Note that collections can be retrieved via GET /API/<RESOURCE> with no {ID}

Description :

- This operation returns the status of an importJob.
- The resource represents a managed entity or a collection.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
    - 200 if no ImportJob found
    - 404 Not found when the supplied ID doesn't match a known ImportJob.
- Filtering is enabled on all ImportJob attributes.
- Attribute selection is enabled.

```
GET /catalogManagement/importJob/{25}
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json


{

        "id": "25",
        "status": "Succeeded"

}
```

GET/…depth

This Uniform Contract operation is used to retrieve the representation of a managed entity or collection.

Note that collections can be retrieved via GET /API/<RESOURCE> with no {ID}

Description :

- The depth parameter allows retrieval of the resource at different levels of depth. The resource properties are provided and the related resources are returned according to the depth value.
- The resource represents a managed entity or a collection.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.

- o 200 if no resources are found
- o 404 Not found when the supplied ID doesn't match a known resource.
- Filtering is enabled on all ServiceCandidate attributes.
- Attribute selection is enabled.
- This operation can return a very large amount of data. The Content-Range header must be used to control the amount of data returned. The header is present in the request and controls the minimum and maximum values returned. In the response, the content-Range header is used to indicate the presence of more elements in the collection and the current position of the elements in the overall collection.

```
GET /catalogManagement/serviceCandidate?depth=3&place.name=France&category.name=Wireless sensors
Range:items=23-24
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json
Content-Range:items 23-24/50


[
{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "name": "Virtual Storage Medium",
        "version": "2.0",
        "description": "Virtual Storage Medium",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "serviceLevelAgreement": {
                "id": "28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
```

```json
        },
        "serviceSpecification": {
                "id": "22",
                "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
                "version": "3.0",
                "lastUpdate": "2013-04-19T16:42:23-04:00",
                "lifecycleStatus": "Active",
                "name": "Virtual Storage Medium",
                "type": "CustomerFacingService",
                "description":" Virtual storage via the cloud.",
                "validFor": {
                        "startDateTime": "2013-04-19T16:42:23-04:00",
                        "endDateTime": "2013-06-19T00:00:00-04:00"
                },
                "attachment": [],
                "relatedParty": [
                        {
                                "role": "Owner",
                                "id": "1234",
                                "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                        }
                ],
                "serviceSpecRelationship": [
                        {
                                "type":"dependency ",
                                "id": "23",
                                "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/23",
                                "validFor": {
                                        "startDateTime": "2013-04-19T16:42:23-04:00",
                                        "endDateTime": ""
                                }
                        }
                ],
                "requiredServiceSpecification": [
                        {
                                "id": "13",
                                "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/13",
                                "name": "specification 1",
                                "validFor": {
                                        "startDateTime": "2013-04-19T16:42:23-04:00",
                                        "endDateTime": ""
```

```
                            }
                    }
            ],
            "requiredResourceSpecification": [
                    {
                            "id": "13",
                            "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                            "name": "specification 1",
                            "validFor": {
                                    "startDateTime": "2013-04-19T16:42:23-04:00",
                                    "endDateTime": ""
                            }
                    }
            ],
            "serviceSpecCharacteristic": [
                    {
                            "name": "Size",
                            "description": "size",
                            "valueType": "number",
                            "configurable": true,
                            "validFor": {
                                    "startDateTime": "2013-04-19T16:42:23-04:00",
                                    "endDateTime": ""
                            },
                            "serviceSpecCharRelationship": [],
                            "serviceSpecCharacteristicValue": [
                                    {
                                            "valueType": "number",
                                            "default": true,
                                            "value": "500",
                                            "unitOfMeasure": "MB",
                                            "valueFrom": "",
                                            "valueTo": "",
                                            "validFor": {
                                                    "startDateTime": "2013-04-19T16:42:23-04:00",
                                                    "endDateTime": ""
                                            }
                                    },
                                    {
                                            "valueType": "number",
                                            "default": false,
                                            "value":"10",
```

```
                              "unitOfMeasure": "GB",
                              "valueFrom": "",
                              "valueTo": "",
                              "validFor": {
                                      "startDateTime": "2013-04-19T16:42:23-04:00",
                                      "endDateTime": ""
                              }
                      },
                      {
                              "valueType": "number",
                              "default": false,
                              "value": "50",
                              "unitOfMeasure": "GB",
                              "valueFrom": "",
                              "valueTo": "",
                              "validFor": {
                                      "startDateTime": "2013-04-19T16:42:23-04:00",
                                      "endDateTime": ""
                              }
                      }
              ]
          }
      ]
   }
}
]
```

PUT /catalogManagement/serviceCatalog/{ID}

This Uniform Contract operation is used to completely update the representation of a managed entity or a task.

Description :

- This operation completely updates a catalog.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

REQUEST

```
PUT /catalogManagement/serviceCatalog/10
Content-type: application/json

{
        "version": "2.0",
        "type": "ServiceCatalog",
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "name": "Catalog Wholesale Business",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2016-07-23T16:42:23-04:00",
                "endDateTime": "2017-07-23T00:00:00-04:00"
        },
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "2800",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/2800"
                }, {
                        "role": "Reviser",
                        "name": "Roger Collins"
                }
        ]
}
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "10",
        "href": "http://serverlocation:port/catalogManagement/serviceCatalog/10",
        "version": "2.0",
        "lastUpdate": "2016-07-23T16:42:23-04:00",
        "type": "ServiceCatalog",
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
```

```
                    "name": "Cloud Services"
            }
    ],
    "name": "Catalog Wholesale Business",
    "lifecycleStatus": "Active",
    "validFor": {
            "startDateTime": "2016-07-23T16:42:23-04:00",
            "endDateTime": "2017-07-23T00:00:00-04:00"
    },
    "relatedParty": [
            {
                    "role": "Owner",
                    "id": "2800",
                    "href": "http ://serverLocation:port/partyManagement/partyRole/2800"
            }, {
                    "role": "Reviser",
                    "name": "Roger Collins"
            }
    ]
}
```

PUT /catalogManagement/category/{ID}

This Uniform Contract operation is used to completely update the representation of a managed entity or a task.

Description:

- This operation completely updates a category.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

REQUEST

```
PUT /catalogManagement/category/42
Content-type: application/json

{
    "id": "42",
    "href": "http://serverlocation:port/catalogManagement/category/42",
```

```
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "version": "2.0",
        "lifecycleStatus": "Launched",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2018-04-19T16:42:23-04:00"
        },
        "parentId": " 41",
        "isRoot": false,
        "name": "Cloud Services",
        "description": "A category to hold all available cloud service offers"
}
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/category/42",
        "lastUpdate": "2013-04-25T09:28:10-04:00",
        "version": "2.0",
        "lifecycleStatus": "Launched",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2018-04-19T16:42:23-04:00"
        },
        "parentId": "41",
        "isRoot": false,
        "name": "Cloud Services",
        "description": "A category to hold all available cloud service offers"
}
```

PUT /catalogManagement/serviceCandidate/{ID}

This Uniform Contract operation is used to completely update the representation of a managed entity or a task.

Description :

- This operation completely updates a service candidate.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

REQUEST

```json
PUT /catalogManagement/serviceCandidate{42}
Content-type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "name": "Virtual Storage Medium",
        "version": "2.0",
        "description": "Virtual Storage Medium",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Launched",
        "validFor": {
                "startDateTime": "2013-06-19T00:00:00-04:00",
                "endDateTime": ""
        },
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "serviceLevelAgreement": {
                "id": "28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
        },
        "serviceSpecification": {
                "id": "13",
                "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
                "name": "specification 1",
                "version": "1.1"
        }
}
```

RESPONSE

```json
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
```

```
        "name": "Virtual Storage Medium",
        "version": "2.0",
        "description": "Virtual Storage Medium",
        "lastUpdate": "2013-06-19T00:00:00-04:00",
        "lifecycleStatus": "Launched",
        "validFor": {
                "startDateTime": "2013-06-19T00:00:00-04:00",
                "endDateTime": ""
        },
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "serviceLevelAgreement": {
                "id": "28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
        },
        "serviceSpecification": {
                "id": "13",
                "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
                "name": "specification 1",
                "version": "1.1"
        }
}
```

PUT /catalogManagement/serviceSpecification/{ID}

This Uniform Contract operation is used to completely update the representation of a managed entity or a task.

Description :

- This operation completely updates a service specification.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

REQUEST

```
PUT /catalogManagement/serviceSpecification/22
Content-type: application/json

{
        "id": "22",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
        "version": "3.0",
        "lastUpdate": "2016-08-14T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "name": "Virtual Storage Medium",
        "type": "CustomerFacingService",
        "description":" Virtual storage via the cloud.",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "attachment": [],
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }
        ],
        "serviceSpecRelationship": [
                {
                        "type":"dependency ",
                        "id": "23",
                        "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/23",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
        ],
        "requiredServiceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
```

```
            ],
        "requiredResourceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
        ],
        "serviceSpecCharacteristic": [
                {
                        "name": "Size",
                        "description": "size",
                        "valueType": "number",
                        "configurable": true,
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        },
                        "serviceSpecCharRelationship": [],
                        "serviceSpecCharacteristicValue": [
                                {
                                        "valueType": "number",
                                        "default": true,
                                        "value": "10",
                                        "unitOfMeasure": "GB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
                                {
                                        "valueType": "number",
                                        "default": false,
                                        "value":"20",
                                        "unitOfMeasure": "GB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
```

```
                                 {
                                     "valueType": "number",
                                     "default": false,
                                     "value": "50",
                                     "unitOfMeasure": "GB",
                                     "valueFrom": "",
                                     "valueTo": "",
                                     "validFor": {
                                             "startDateTime": "2013-04-19T16:42:23-04:00",
                                             "endDateTime": ""
                                     }
                                 }
                         ]
                 }
         ]
```

1.1.1.1.1   }

RESPONSE

```
200
Content-Type: application/json

{
        "id": "22",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
        "version": "3.0",
        "lastUpdate": "2016-08-14T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "name": "Virtual Storage Medium",
        "type": "CustomerFacingService",
        "description":" Virtual storage via the cloud.",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "attachment": [],
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }
        ],
        "serviceSpecRelationship": [
                {
                        "type":"dependency ",
                        "id": "23",
                        "href":
```

```
"http://serverlocation:port/catalogManagement/serviceSpecification/23",
                    "validFor": {
                            "startDateTime": "2013-04-19T16:42:23-04:00",
                            "endDateTime": ""
                    }
            }
    ],
    "requiredServiceSpecification": [
            {
                    "id": "13",
                    "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/13",
                    "name": "specification 1",
                    "validFor": {
                            "startDateTime": "2013-04-19T16:42:23-04:00",
                            "endDateTime": ""
                    }
            }
    ],
    "requiredResourceSpecification": [
            {
                    "id": "13",
                    "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                    "name": "specification 1",
                    "validFor": {
                            "startDateTime": "2013-04-19T16:42:23-04:00",
                            "endDateTime": ""
                    }
            }
    ],
    "serviceSpecCharacteristic": [
            {
                    "name": "Size",
                    "description": "size",
                    "valueType": "number",
                    "configurable": true,
                    "validFor": {
                            "startDateTime": "2013-04-19T16:42:23-04:00",
                            "endDateTime": ""
                    },
                    "serviceSpecCharRelationship": [],
                    "serviceSpecCharacteristicValue": [
                            {
                                    "valueType": "number",
                                    "default": true,
                                    "value": "10",
                                    "unitOfMeasure": "GB",
                                    "valueFrom": "",
```

```
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
                                {
                                        "valueType": "number",
                                        "default": false,
                                        "value":"20",
                                        "unitOfMeasure": "GB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
                                {
                                        "valueType": "number",
                                        "default": false,
                                        "value": "50",
                                        "unitOfMeasure": "GB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                }
                        ]
                }
        ]
}
```

PATCH /catalogManagement/serviceCatalog/{ID}

This Uniform Contract operation is used to partially update the representation of a managed entity or a task.

Description :

- This operation partially updates a service catalog.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.

- Returns HTTP/1.1 status code 200 if the request was successful.
- Any other special return and/or exception codes.

Specify which attributes are patchable using the following table (to capture RO attributes)

Attribute name	Patchable	Rule
Id	No	
lastUpdate	No	
version	Y	Should be greater than the current one
lifecycleStatus	Y	Status should be valid
startDateTime	Y	
endDateTime	Y	Should be greater than startDateTime
type	Y	
name	Y	
description	Y	
category	Y	
relatedParty	Y	

REQUEST

```
PATCH /catalogManagement/serviceCatalog/10
Content-type: application/json

{
    "validFor": {
        "startDateTime": "2017-07-23T00:00:00-00:00",
```

```
            "endDateTime": "2018-07-23T00:00:00-00:00"
        }
}
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "10",
        "href": "http://serverlocation:port/catalogManagement/serviceCatalog/10",
        "version": "2.0",
        "lastUpdate": "2016-07-25T22:55:23-04:00",
        "type": "ServiceCatalog",
        "category": [
                {
                        "id": "12",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "name": "Catalog Wholesale Business",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2017-07-23T00:00:00-00:00",
                "endDateTime": "2018-07-23T00:00:00-00:00"
        },
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "2800",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/2800"
                }, {
                        "role": "Reviser",
                        "name": "Roger Collins"
                }
        ]
}
```

PATCH /catalogManagement/category/{ID}

This Uniform Contract operation is used to partially update the representation of a managed entity or a task.

Description :

- This operation partially updates a category.

- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

Specify which attributes are patchable using the following table (to capture RO attributes)

Attribute name	Patchable	Rule
Id	No	
lastUpdate	No	
version	Y	Should be greater than the current one
lifecycleStatus	Y	Status should be valid
startDateTime	Y	
endDateTime	Y	Should be greater than startDateTime
parentId	Y	The parent category should exist
isRoot	Y	To be updated in compliance with the parentId
name	Y	
description	Y	

Further document any rules that must be implemented when patching attributes.

Rule name	Rule/Pre Condition/Side Effects/Post Conditons
Root	When isRoot is patched to false, parentId should indicate the parent category. When isRoot is patched to true, parentId should be empty.

REQUEST

```
PATCH /catalogManagement/category/42
Content-type: application/json

{
        "parentId": "",
        "isRoot": true
}
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/category/42",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "version": "2.0",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": ""
        },
        "parentId": "",
        "isRoot": true,
        "name": "Cloud Services",
        "description": "A category to hold all available cloud service offers"
}
```

PATCH /catalogManagement/serviceCandidate/{ID}

This Uniform Contract operation is used to partially update the representation of a managed entity or a task.

Description :

- This operation partially updates a serviceCandidate.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

Specify which attributes are patchable using the following table (to capture RO attributes)

Attribute name	Patchable	Rule
Id	No	
startDateTime	Y	
endDateTime	Y	Should be greater than startDateTime
name	Y	
version	Y	
description	Y	
lastUpdate	N	
lifecycleStatus	Y	Status should be valid
category	Y	It should exist
serviceSpecification	Y	It should exist

Further document any rules that must be implemented when patching attributes.

Rule name	Rule/Pre Condition/Side Effects/Post Conditons

REQUEST

```
PATCH /catalogManagement/serviceCandidate/{42}
Content-type: application/json

{
        "lifecycleStatus": "Launched",
        "validFor": {
                "startDateTime": "2013-06-20T00:00:01-04:00",
                "endDateTime": ""
        }
}
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "name": "Virtual Storage Medium",
        "version": "2.0",
        "description": "Virtual Storage Medium",
        "lastUpdate": "2013-06-20T00:00:01-04:00",
        "lifecycleStatus": "Launched",
        "validFor": {
                "startDateTime": "2013-06-20T00:00:01-04:00",
                "endDateTime": ""
        },
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "serviceLevelAgreement": {
                "id": "28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
        },
        "serviceSpecification": {
```

```
            "id": "13",
            "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
            "name": "specification 1",
            "version": "1.1"
        }
}
```

PATCH /catalogManagement/serviceSpecification/{ID}

This Uniform Contract operation is used to partially update the representation of a managed entity or a task.

Description :

- This operation partially updates a serviceSpecification.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

Specify which attributes are patchable using the following table (to capture RO attributes)

Attribute name	Patchable	Rule
Id	No	
lastUpdate	No	
version	Y	Should be greater than the current one
lifecycleStatus	Y	Status should be valid
startDateTime	Y	

endDateTime	Y		Should be greater than startDateTime
name	Y		
description	Y		
brand	Y		
relatedParty	Y		It should exist
attachment	Y		It should exist
serviceSpecRelationship	Y		It should exist
requiredServiceSpecification	Y		It should exist
requiredResourceSpecification	Y		It should exist
serviceSpecCharacteristic	Y		It should exist
serviceSpecCharRelationship	Y		It should exist
serviceSpecCharacteristicValue	Y		

Further document any rules that must be implemented when patching attributes.

Rule name	Rule/Pre Condition/Side Effects/Post Conditions

REQUEST

```
PATCH /catalogManagement/serviceSpecification/22
Content-type: application/json-patch+json

{
     "op": "add",
     "path": "/attachment",
```

```
            "value": {
                    "id": "44",
                    "href": "http://serverlocation:port/documentManagement/attachment/44",
                    "type": "Video",
                    "url": "http://yyyyy"
            }
}
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "22",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
        "version": "2.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "name": "Virtual Cloud",
        "description": "Virtual Cloud service",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "attachment": [
                {
                        "id": "44",
                        "href": "http://serverlocation:port/documentManagment/attachment/44",
                        "type": "Video",
                        "url": "http://yyyyy"
                }
        ],
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }
        ],
        "serviceSpecRelationship": [
                {
                        "type": "dependency",
                        "id": "23",
                        "href": "
http://serverlocation:port/catalogManagement/serviceSpecification/23",
        "validFor": {
                        "startDateTime": "2013-04-19T16:42:23-04:00",
                        "endDateTime": ""
                }
```

```
                }
        ],
        "requiredServiceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
        ],
        "requiredResourceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
        ],
        "serviceSpecCharacteristic": [
                {
                        "name": "Size",
                        "description": "size",
                        "valueType": "number",
                        "configurable": true,
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        },
                        "serviceSpecCharRelationship": [],
                        "serviceSpecCharacteristicValue": [
                                {
                                        "valueType": "number",
                                        "default": true,
                                        "value": "500",
                                        "unitOfMeasure": "MB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
```

```
                },
                {
                        "valueType": "number",
                        "default": false,
                        "value":"10",
                        "unitOfMeasure": "GB",
                        "valueFrom": "",
                        "valueTo": "",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                },
                {
                        "valueType": "number",
                        "default": false,
                        "value": "50",
                        "unitOfMeasure": "GB",
                        "valueFrom": "",
                        "valueTo": "",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
            ]
        }
    ]
}
```

POST /catalogManagement/category/{ID}

This Uniform Contract operation is used to create a managed entity or a task.

Description :

- This operation creates a category
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- Standard POST behavior.

- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

ID Management :

The response provide the category id.

Specify the attributes required when an entity is created (and their default values if not):

Attribute name	Mandatory	Default	Rule
isRoot	N	true	
name	Y		
parentId	Y		If isRoot is set to false, parentId is mandatory

- Further specify any rules on the creation of the entity

Rule name	Rule

REQUEST

```
POST catalogManagement/category
Content-type: application/json

{
     "version": "1.0",
     "lifecycleStatus": "Active",
     "validFor": {
          "startDateTime": "2013-04-19T16:42:23-04:00",
          "endDateTime": ""
     },
     "parentId": " 41",
     "isRoot": false,
     "name": "Cloud Services",
     "description": "A category to hold all available cloud service offers"
}
```

RESPONSE

```
201
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/category/42",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "version": "1.0",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": ""
        },
        "parentId": " 41",
        "isRoot": false,
        "name": "Cloud Services",
        "description": "A category to hold all available cloud service offers"
}
```

POST /catalogManagement/serviceCandidate/{ID}

This Uniform Contract operation is used to create a managed entity or a task.

Description :

- This operation creates a serviceCandidate.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- Standard POST behavior.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

ID Management :

The response provides the serviceCandidate id.

Specify the attributes required when an entity is created (and their default values if not):

Attribute name	Mandatory	Default	Rule
name	Y		
serviceSpecification	Y		

- Further specify any rules on the creation of the entity

Rule name	Rule

REQUEST

```
POST catalogManagement/serviceCandidate
Content-type: application/json

{
        "name": "Virtual Storage Medium",
        "version": "1.0",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "category": [
                {
                        "id": "12",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "serviceLevelAgreement": {
                "id": "28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
        },
        "serviceSpecification": {
                "id": "13",
                "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
                "name": "specification 1",
                "version": "1.1"
        }
}
```

```
}
```

RESPONSE

```
201
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "name": "Virtual Storage Medium",
        "version": "1.0",
        "description": "Virtual Storage Medium",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "category": [
                {
                        "id": "42",
                        "href": "http://serverlocation:port/catalogManagement/category/42",
                        "version": "2.0",
                        "name": "Cloud Services"
                }
        ],
        "serviceLevelAgreement": {
                "id": "28",
                "href": "http://serverlocation:port/slaManagement/serviceLevelAgreement/28",
                "name": "Standard SLA"
        },
        "serviceSpecification": {
                "id": "13",
                "href": "http://serverlocation:port/catalogManagement/serviceSpecification/13",
                "name": "specification 1",
                "version": "1.1"
        }
}
```

POST /catalogManagement/serviceSpecification/{ID}

This Uniform Contract operation is used to create a managed entity or a task.

Description :

- This operation creates a serviceSpecification.
- The resource represents a managed entity.

- The ID may be a string (or a string containing numbers).

Behavior :

- Standard POST behavior.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

ID Management :

The response provides the serviceSpecification id.

Specify the attributes required when an entity is created (and their default values if not):

Attribute name	Mandatory	Default	Rule
name	Y		
serviceSpecCharacteristic	Y		
serviceSpecCharacteristicValue	Y		

- Further specify any rules on the creation of the entity

Rule name	Rule

REQUEST

```
POST catalogManagement/serviceSpecification
Content-type: application/json

{
    "version": "3.0",
    "name": "Virtual Storage Medium",
    "type": "CustomerFacingService",
    "description": "Virtual storage via the cloud.",
    "validFor": {
        "startDateTime": "2013-04-19T16:42:23-04:00",
        "endDateTime": "2013-06-19T00:00:00-04:00"
    },
```

```json
        "attachment": [],
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }
        ],
        "serviceSpecRelationship": [
                {
                        "type": "dependency",
                        "id": "23",
                        "href": "
http://serverlocation:port/catalogManagement/serviceSpecification/23",
        "validFor": {
                        "startDateTime": "2013-04-19T16:42:23-04:00",
                        "endDateTime": ""
                        }
                }
        ],
        "requiredServiceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
                }
        ],
        "requiredResourceSpecification": [
                {
                        "id": "13",
                        "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                        "name": "specification 1",
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        }
```

```json
                }
        ],
        "serviceSpecCharacteristic": [
                {
                        "name": " Size",
                        "description": " size",
                        "valueType": "number",
                        "configurable": true,
                        "validFor": {
                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                "endDateTime": ""
                        },
                        "serviceSpecCharRelationship": [],
                        "serviceSpecCharacteristicValue": [
                                {
                                        "valueType": "number",
                                        "default": true,
                                        "value": "500",
                                        "unitOfMeasure": "MB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
                                {
                                        "valueType": "number",
                                        "default": false,
                                        "value": "10",
                                        "unitOfMeasure": "GB",
                                        "valueFrom": "",
                                        "valueTo": "",
                                        "validFor": {
                                                "startDateTime": "2013-04-19T16:42:23-04:00",
                                                "endDateTime": ""
                                        }
                                },
                                {
                                        "valueType": "number",
                                        "default": false,
                                        "value": "50",
                                        "unitOfMeasure": "GB",
```

```
                                    "valueFrom": "",
                                    "valueTo": "",
                                    "validFor": {
                                            "startDateTime": "2013-04-19T16:42:23-04:00",
                                            "endDateTime": ""
                                    }
                            },
                    ]
            }
    ]
}
```

RESPONSE

```
201
Content-Type: application/json

{
        "id": "22",
        "href": "http://serverlocation:port/catalogManagement/serviceSpecification/22",
        "version": "3.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "lifecycleStatus": "Active",
        "name": "Virtual Storage Medium",
        "type": "CustomerFacingService",
        "description": "Virtual storage via the cloud.",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
        "attachment": [],
        "relatedParty": [
                {
                        "role": "Owner",
                        "id": "1234",
                        "href": "http ://serverLocation:port/partyManagement/partyRole/1234"
                }
        ],
        "serviceSpecRelationship": [
                {
                        "type": "dependency",
                        "id": "23",
                        "href": "
http://serverlocation:port/catalogManagement/serviceSpecification/23",
        "validFor": {
```

```
                            "startDateTime": "2013-04-19T16:42:23-04:00",
                            "endDateTime": ""
                        }
                    }
            ],
            "requiredServiceSpecification": [
                    {
                            "id": "13",
                            "href":
"http://serverlocation:port/catalogManagement/serviceSpecification/13",
                            "name": "specification 1",
                            "validFor": {
                                    "startDateTime": "2013-04-19T16:42:23-04:00",
                                    "endDateTime": ""
                            }
                    }
            ],
            "requiredResourceSpecification": [
                    {
                            "id": "13",
                            "href":
"http://serverlocation:port/catalogManagement/resourceSpecification/13",
                            "name": "specification 1",
                            "validFor": {
                                    "startDateTime": "2013-04-19T16:42:23-04:00",
                                    "endDateTime": ""
                            }
                    }
            ],
            "serviceSpecCharacteristic": [
                    {
                            "name": "Size",
                            "description": "size",
                            "valueType": "number",
                            "configurable": true,
                            "validFor": {
                                    "startDateTime": "2013-04-19T16:42:23-04:00",
                                    "endDateTime": ""
                            },
                            "serviceSpecCharRelationship": [],
                            "serviceSpecCharacteristicValue": [
                                    {
```

```
                                "valueType": "number",
                                "default": true,
                                "value": "500",
                                "unitOfMeasure": "MB",
                                "valueFrom": "",
                                "valueTo": "",
                                "validFor": {
                                        "startDateTime": "2013-04-19T16:42:23-04:00",
                                        "endDateTime": ""
                                }
                        },
                        {
                                "valueType": "number",
                                "default": false,
                                "value":"10",
                                "unitOfMeasure": "GB",
                                "valueFrom": "",
                                "valueTo": "",
                                "validFor": {
                                        "startDateTime": "2013-04-19T16:42:23-04:00",
                                        "endDateTime": ""
                                }
                        },
                        {
                                "valueType": "number",
                                "default": false,
                                "value": "50",
                                "unitOfMeasure": "GB",
                                "valueFrom": "",
                                "valueTo": "",
                                "validFor": {
                                        "startDateTime": "2013-04-19T16:42:23-04:00",
                                        "endDateTime": ""
                                }
                        }
                ]
        }
    ]
}
```

POST /catalogManagement/catalog/{10}/importJob

This Uniform Contract operation is used to create a managed entity or a task.

Description :

- This operation manages a task to import a catalog.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- Standard POST behavior.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

ID Management :

The response provides the job id.

Specify the attributes required for the task (and their default values if not):

Attribute name	Mandatory	Default	Rule
url	Y		

- Further specify any rules for the task

Rule name	Rule

REQUEST

```
POST catalogManagement/catalog/{10}/importJob
Content-type: application/json

{
      "url": "ftp://ftp.myCatalog.com/serviceCatalog"
}
```

RESPONSE

```
201
Content-Type: application/json

{
        "id": "54",
        "status": "Succeeded",
        "errorLog": ""
}
```

POST /catalogManagement/catalog/{10}/exportJob

This Uniform Contract operation is used to create a managed entity or a task.

Description :

- This operation manages a task to export a catalog.
- The resource represents a managed entity.
- The ID may be a string (or a string containing numbers).

Behavior :

- Standard POST behavior.
- Returns HTTP/1.1 status code 201 if the request was successful.
- Any other special return and/or exception codes.

ID Management :

The response provides the job id.

Specify the attributes required for the task (and their default values if not):

Attribute name	Mandatory	Default	Rule
Catalog id	Y		

- Further specify any rules for the task

Rule name	Rule

REQUEST

```
POST catalogManagement/catalog/{10}/exportJob
Content-type: application/json

{
}
```

RESPONSE

```
201
Content-Type: application/json

{
        "id": "54",
        "status": "Succeeded",
        "errorLog": "",
        "url": "ftp://ftp.myCatalog.com/productCatalog"
}
```

DELETE API/{RESOURCE}/{ID}

No delete operations

This Uniform Contract operation is used to delete a managed entity or a task.

Description :

- Provide an overall description of the Operation
- Describe if the resource represents a managed entity or a task.
- Describe the structure of the identifier.

Behavior :

- What status and exception codes are returned.
- Returns HTTP/1.1 status code 200 if the request was successful.
- Any other special return and/or exception codes.

REQUEST

DELETE API/{RESOURCE}/{ID}

RESPONSE

204

Example see TMF REST Design Guidelines.

API NOTIFICATION TEMPLATES

For every single of operation on the entities use the following templates and provide sample REST notification POST calls.

It is assumed that the Pub/Sub uses the Register and UnRegister mechanisms described in the REST Guidelines reproduced below.

REGISTER LISTENER POST /HUB

Description :

Sets the communication endpoint address the service instance must use to deliver information about its health state, execution state, failures and metrics. Subsequent POST calls will be rejected by the service if it does not support multiple listeners. In this case DELETE /api/hub/{id} must be called before an endpoint can be created again.

Behavior :

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 409 if request is not successful.

REQUEST

```
POST /api/hub
Accept: application/json

{"callback": "http://in.listener.com"}
```

RESPONSE

```
201
Content-Type: application/json
Location: /api/hub/42

{"id":"42","callback":"http://in.listener.com","query":null}
```

UNREGISTER LISTENER DELETE HUB/{ID}

Description :

Clears the communication endpoint address that was set by creating the Hub.

Behavior :

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 404 if the resource is not found.

REQUEST

```
DELETE /api/hub/{id}
Accept: application/json
```

RESPONSE

```
204
```

PUBLISH {EVENTTYPE} POST /LISTENER

Description :

Provide the Event description

Behavior :

Returns HTTP/1.1 status code 201 if the service is able to set the configuration.

REQUEST

```
POST /client/listener
Accept: application/json

{

   "event": {

   EVENT BODY
         },
   "eventType": "eventType"
}
```

RESPONSE

```
204
Content-Type: application/json
```

Example see TMF REST Design Guidelines.

LIFECYCLE MANAGEMENT EXTENSIONS TO CATALOG

In Lifecycle Management there is a requirement to distinguish between entities existing with different life cycle version numbers and accessible via different ACL mechanisms.

For example the same Service Candidates or Service Specifications may exist in a Catalog but with different version numbers.

It may be possible for an administrator to see all the existing versions or for a partner to see only a subset of all the existing versions.

The entity version number is not dependent on the version number of the API. For example in PLM the same API (running at a specific version number) may be used to retrieve entities with different PLM version numbers.

In order to distinguish resources representing entities running with different version numbers and accessible though the same API version the following directive can be used /id:(version=x) and the version attribute is added to each entity.

```
{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "version": "1.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "Active",

…..

}
```

Note that the catalog resources in this case may have the same ID but may be distinguished by the inclusion of the version number in their ID i.e /42:(version=1.0), /42:(version=2.0).

In the following examples we will assume that two versions of the VirtualStorage Service Candidate exist in the Service Catalog. The Inactive and Active versions respectively version 1.0 and version 2.0.

QUERY ALL VERSIONED CATALOG RESOURCES

Users with different roles may have access to different versions of the entities in the catalog. For example user A may have access to only the version 1.0 of the entities while user B may have access to version 1.0 and version 2.0.

Admin user of Catalog have access to all the versions of the resources while non admin users have by default access to only the latest version of the entities in the Catalog.

For example the following request on the admin endpoint will return all the versioned resources matching a specific ID.

REQUEST

```
GET api/admin/catalogManagement/serviceCandidate/?id=42
Accept: application/json
```

RESPONSE

```
200
Content-Type: application42/json

[{
        "id": " 42 ",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "version": "1.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "InActive",
…..
},
{
        "id": " 42 ",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42 ",
        "version": "2.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "Active",
```

```
…..
}
]
```

QUERY A SPECIFIC VERSIONED CATALOG RESOURCE

In general a non-admin API user only has visibility to the latest version number or visibility to a subset of versioned catalog resources.

It may be possible for an admin API user to retrieve a resource with a specific version number by using an ID and versioning filtering criteria.

REQUEST

```
GET api/admin/catalogManagement/serviceCandidate/?id=42&version=1.0
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json

[{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "version": "1.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "Active",
…..
]
```

QUERY CURRENT VERSION OF A CATALOG RESOURCE

By default only the most current version is returned (for admin and non admin).

REQUEST

```
GET api/admin/catalogManagement/serviceCandidate/42
Accept: application/json
```

RESPONSE

```
200
Content-Type: application/json

{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "version": "2.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "Active",
…..
}
```

CREATE NEW VERSION OF A CATALOG RESOURCE

POST is used to create a new version of a catalog resource.

The constraint is that the version numbers for the resource having the same ID must differ.

REQUEST
POST catalogManagement/serviceCandidate
Content-type: application/json

```
{
        "id": "42",
        "version": "3.0",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "lifecycleStatus": "Active",
        "validFor": {
                "startDateTime": "2013-04-19T16:42:23-04:00",
                "endDateTime": "2013-06-19T00:00:00-04:00"
        },
…
}
```

RESPONSE
201
Content-Type: application/json

```
{
        "id": "42",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/42",
        "version": "3.0",
        "lastUpdate": "2013-04-19T16:42:23-04:00",
        "name": "Virtual Storage Medium",
        "description": "Virtual Storage Medium",
        "isBundle": true,
        "lifecycleStatus": "Active",
```

```
"validFor": {
        "startDateTime": "2013-04-19T16:42:23-04:00",
        "endDateTime": "2013-06-19T00:00:00-04:00"
},
…
}
```

MODIFY AN EXISTING VERSION OF A CATALOG RESOURCE

By default PATCH or PUT will be acting only on the latest version of a Catalog Resource. For example PATCH /…/serviceCandidate/VirtualStorage will only update the VirtualStoage ServiceCandidate at Version 2.0 (which is the most current).

To update a specific version of an entity the (Version=X) directive is added to the ID (i.e /id:(version=x) .

Note that this capability is only available to API users having the proper authorizations to change the catalog entities with specific version numbers.

For example to change the VirtualStorage versioned at 1.0 we could use /serviceCandidate /VirtualStorage(Version=1.0)

REQUEST

```
PATCH /catalogManagement/serviceCandidate/42?Version=1.0
Content-type: application/json-patch+json

{

"lifecycleStatus": "Active"

        }
```

RESPONSE

```
201
Content-Type: application/json

{
        "id": "VirtualStorage",
        "href": "http://serverlocation:port/catalogManagement/serviceCandidate/VirtualStorage",
        "version": "1.0",
        "lifecycleStatus": "Active",
        …..
}
```

ROLE BASED ACCESS CONTROL

The user presents their credentials for authentication

If the credentials are valid

1.   The user is given access to the catalog

2.   As defined by their role(s)

3.   As defined by their access rights

4.   As defined by the access type: CRUD, discover

5.   As defined by the pre-defined filter

For example if they issue a get on a catalog that a party has no access they get an error response

Or if they try to modify an area of the catalog but do not have Write Access they get an error response

Normally we anticipate that the OAUTH2 or Open ID Connect are used as the authorization APIs and that ACL are established between authorized parties with regards to the content of the Catalog (i.e GET but also enable of update operations on specific entities).

RELEASE HISTORY

Release Number	Date	Release led by:	Description
Release 1.0	04/15/2013	Pierre Gauthier TM Forum pgauthier@tmforum.org	First Release of Draft Version of the Document.
Release 1.1			Updated for use in the Paris Spec Jam – and rebranded.
Release 1.2	15/08/2016	Frank Wong DGIT fwong@dgitsystems.com	Updated to resolve errors and reflect discussion following Team Action Week Vancouver 2106.
	19/08/2016	Frank Wong DGIT fwong@dgitsystems.com	Updated following Catalog API discussion.
	16/10/2016	Frank Wong DGIT fwong@dgitsystems.com	Added 'type' attribute to ServiceSpecification model to support CFS and RFS.