TM Forum Specification

Product Catalog Management API Conformance Template

TMF620B

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1. Table of Contents

2. Introduction - API DESCRIPTION

This document is the REST API Conformance for Release 19.0 of the Product Catalog API TMF620.

The Product Catalog API allows defining product catalog entities such as offerings and specifications, creating pricing for offerings, and transferring information between catalogs.

3. RESOURCE MODEL CONFORMANCE

1. API MANDATORY AND OPTIONAL RESOURCES

The following table shows which resources are mandatory (i.e. a conformant API implementation must support these resources) and which are optional (i.e. an API implementation can conform even without supporting these resources).

Resource Name	Mandatory or Optional	Comments
Catalog	O	
Category	O	
ProductOffering	M	
ProductOfferingPrice	M	This is a change from release 17.5. In release 19.0 ProductOfferingPrice can no longer be defined as an embedded sub-resource of ProductOffering.
ProductSpecification	M	
ExportJob	O	
ImportJob	O	

2. General Notes on Resource Attribute Conformance

- The tables in the subsection below indicate which attributes are mandatory and optional for each resource in the API.
- Where a resource is an input into an API (e.g. POST, PATCH), Mandatory means that the attribute value must be supplied by the API consumer in the input (and must not be blank or null).

- Where a resource is an output from an API (e.g. GET, POST), Mandatory means that the attribute value must be supplied by the API provider in the output (and must not be blank or null).
- For a sub-resource that is not an array, Mandatory (cardinality 1..1) means that the sub-resource must be present, while Optional (cardinality 0..1) means that the sub-resource may be absent. Mandatory and Optional on the sub-resource attributes apply to the sub-resource if present. For example, ProductOffering contains an Optional attribute productSpecification, which is a ProductSpecificationRef sub-resource. The attribute ProductSpecificationRef.id is Mandatory if the sub-resource is present.
- For a sub-resource that is an array, Mandatory (cardinality 1..*) means that at least one sub-resource must be present in the array, while Optional (cardinality 0..*) means that the array may be absent. Mandatory and Optional on the sub-resource attributes apply to each of the sub-resources if present. For example, ProductOffering contains an Optional attribute place, which is an array of PlaceRef sub-resources. The attribute PlaceRef.id is Mandatory for each occurrence of PlaceRef in the array.
- For the polymorphic support attributes (names start with @), the following general rules apply, and so are not repeated in the tables:
  - None of the @ attributes are mandatory in input if the actual type of the resource matches the basic type. If the actual type of the resource differs, @type must be populated with the actual type. For example, in a POST of an OrangeProductOffering (that extends ProductOffering), @type should be set to **OrangeProductOffering**.
  - @type is mandatory in output
  - If @type is not the basic type of the resource (e.g. a resource PricingLogicAlgorithm has @type RecurringRatingPLA), then @schemaLocation and @baseType are mandatory in output, otherwise they are optional in output.
  - If the type of a referred entity is not the basic type of the resource (e.g. SLARef refers to a BusinessSLA), then @referredType is mandatory in output, otherwise it is optional

3. ProductOffering resource MANDATORY AND OPTIONAL ATTRIBUTES

The following table indicates which attributes are mandatory and which ones are optional for ProductOffering.

Attribute Name	Mandatory or Optional	Comments
id	M (in response	Generated by the server when the first version of

Attribute Name	Mandatory or Optional	Comments
	messages) O (otherwise)	the Product Offering is created and provided in the response upon resource creation. Accepted in an entity-creation request for a new version of the Product Offering
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation
version	O	
lastUpdate	M (in response messages) O (otherwise)	This is a change from release 17.5. In release 19, lastUpdate is mandatory in response messages.
name	M (in response messages) O (otherwise)	
description	O	
isBundle	O	Default value is **false**
lifecycleStatus	M (in response messages) O (otherwise)	
isSellable	O	Default value is **true**

Attribute Name	Mandatory or Optional	Comments
statusReason	O	
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory in response messages
startDateTime	M	
endDateTime	O	
category	O	Array of category ref structures
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	M (in response messages) O (otherwise)	
channel	O	Array of channel ref structures
id	M	
href	M (in response messages) O (otherwise)	

Attribute Name	Mandatory or Optional	Comments
name	M (in response messages) O (otherwise)	
place	O	Array of place ref structures
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	
agreement	O	Array of agreement ref structures
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	O	
attachment	O	Array of attachment ref or value structures
id	M (in response messages, or in	

Attribute Name	Mandatory or Optional	Comments
	request messages for existing attachment) O (in request messages for new attachment, must be blank)	
href	M (in response messages) O (otherwise)	
attachmentType	M (in response messages, or in request messages for new attachment) O (in request messages for existing attachment)	
name	O	
description	O	
mimeType	M (in response messages, or in request messages for new attachment) O (in request messages for existing attachment)	This is a change from release 17.5. In release 19, mimeType is mandatory.
url	O	Either url or content must be populated if the resource is the value object

Attribute Name	Mandatory or Optional	Comments
content	O	Either url or content must be populated if the resource is the value object
size	O	
validFor	O	
endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
	O	
bundledProductOffering	M (if isBundle is **true**) O (if isBundle is **false** must be empty)	Array of product offerings bundled within this product offering
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	

Attribute Name	Mandatory or Optional	Comments
bundledProductOfferingOption	O	
numberRelOfferDefault	O	
numberRelOfferLowerLimit	O	
numberRelOfferUpperLimit	O	
serviceLevelAgreement	O	Array of SLA ref structures
id	M	
href	M (in response messages) O (otherwise)	
name	O	
productSpecification	M (if isBundle is **false**) O (if isBundle is **true** must be empty)	A single Product Specification ref structure (not an array)
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	

Attribute Name	Mandatory or Optional	Comments
version	O	
targetProductSchema	O	
@schemaLocation	M	
@type	M	
serviceCandidate	O	A single Service Candidate ref (not an array)
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	
version	O	
resourceCandidate	O	A single Resource Candidate ref (not an array)
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response	

Attribute Name	Mandatory or Optional	Comments
	messages)	
	O (otherwise)	
version	O	
productOfferingTerm	O	Array of product offering terms that apply to this product offering
description	O	
name	M (in response messages)	
	O (otherwise)	
duration	O	This is a change from release 17.5. In release 19, duration is no longer mandatory for a term, since in principle a commitment term may be something other than a period.
amount	M	
units	M	
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory for a term, since in principle a commitment term may be something other than an absolute period.

Attribute Name	Mandatory or Optional	Comments
endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
productOfferingPrice	O	Array of product offering price refs
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	
marketSegment	O	Array of market segment refs
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages)	

Attribute Name	Mandatory or Optional	Comments
	O (otherwise)	
prodSpecCharValueUse	O	Array of product specification characteristic uses within this product offering
description	O	
minCardinality	O	
maxCardinality	O	
name	M	
valueType	O	
productSpecCharacteristicValue	M	Array of Product Specification Characteristic Values, there should be at least one item in the array
isDefault	O	
rangeInterval	O	
regex	O	
unitOfMeasure	O	
valueFrom	O	
valueTo	O	
valueType	O	

Attribute Name			Mandatory or Optional	Comments
	validFor		O	
		endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
		startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
	value		M	
validFor			O	
	endDateTime		O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
	startDateTime		O (if endDateTime is not empty) M (if endDateTime is empty)	
	productSpecification		M	
		id	M	
		href	M (in response messages) O (otherwise)	

Attribute Name			Mandatory or Optional	Comments
		name	M (in response messages) O (otherwise)	
		version	O	
		targetProductSchema	O	
			@schemaLocation	M	
			@type	M	

4. ProductOfferingPrice resource MANDATORY AND OPTIONAL ATTRIBUTES

The following table indicates which attributes are mandatory and which ones are optional for ProductOfferingPrice.

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server when the first version of the Product Offering is created and provided in the response upon resource creation. Accepted in an entity-creation request for a new version of the Product Offering
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation

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Attribute Name	Mandatory or Optional	Comments
version	O	
lastUpdate	M (in response messages) O (otherwise)	This is a change from release 17.5. In release 19, lastUpdate is mandatory in response messages.
name	M (in response messages) O (otherwise)	
description	O	
isBundle	O	Default value is **false**
lifecycleStatus	M (in response messages) O (otherwise)	
percentage	O	
priceType	M (if isBundle is **false**) O (otherwise)	A bundled price might contain other prices of different types (e.g. an allowance has a usage price and a one-time price), and thus cannot itself be assigned a type
recurringChargePeriodLength	O	
recurringChargePeriodType	O	
popRelationship	O	Array of product offering price relationships

Attribute Name	Mandatory or Optional	Comments
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	
relationshipType	M	This is a change from release 17.5. In release 19, the relationship type is mandatory.
bundledPopRelationship	M (if isBundle is **true**) O (if isBundle is **false** must be empty)	Array of bundled product offering price relationships
id	M	
href	M (in response messages) O (otherwise)	
lifecycleStatus	O	
name	M (in response messages) O (otherwise)	
constraint	O	Array of constraint ref

Attribute Name	Mandatory or Optional	Comments
		structures
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	M (in response messages) O (otherwise)	
place	O	Array of place ref structures
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	
productOfferingTerm	O	Array of product offering terms that apply to this product offering price
description	O	
name	M (in response messages)	

Attribute Name	Mandatory or Optional	Comments
	O (otherwise)	
duration	O	This is a change from release 17.5. In release 19, duration is no longer mandatory for a term, since in principle a commitment term may be something other than a period.
amount	M	
units	M	
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory for a term, since in principle a commitment term may be something other than an absolute period.
endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	

Attribute Name	Mandatory or Optional	Comments
price	O	
unit	M	
value	M	
pricingLogicAlgorithm	O	
id	M	
href	M (in response messages) O (otherwise)	
description	O	
name	M (in response messages) O (otherwise)	
plaSpecId	O	
validFor	O	
endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
startDateTime	O (if endDateTime is not empty) M (if	

Attribute Name	Mandatory or Optional	Comments
	endDateTime is empty)	
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory in response messages
startDateTime	M	
endDateTime	O	
prodSpecCharValueUse	O	Array of product specification characteristic uses within this product offering price
description	O	
minCardinality	O	
maxCardinality	O	
name	M	
valueType	O	
productSpecCharacteristicValue	M	Array of Product Specification Characteristic Values, there should be at least one item in the array
isDefault	O	
rangeInterval	O	

Attribute Name			Mandatory or Optional	Comments
	regex		O	
	unitOfMeasure		O	
	valueFrom		O	
	valueTo		O	
	valueType		O	
	validFor		O	
		endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
		startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
	value		M	
	validFor		O	
		endDateTime	O (if startDateTime is not empty) M (if startDateTime is	If validFor is supplied, one or other or both of the start or end dates must be supplied.

Attribute Name			Mandatory or Optional	Comments
			empty)	
	startDateTime		O (if endDateTime is not empty) M (if endDateTime is empty)	
	productSpecification		M	
		id	M	
		href	M (in response messages) O (otherwise)	
		name	M (in response messages) O (otherwise)	
		version	O	
		targetProductSchema	O	
		@schemaLocation	M	
		@type	M	
tax			O	array of tax item structures
	taxCategory		M	
	taxRate		M	

Attribute Name	Mandatory or Optional	Comments
taxAmount	M	
unit	M	
value	M	
unitOfMeasure	O	
amount	M	
units	M	

5. ProductSpecification resource MANDATORY AND OPTIONAL ATTRIBUTES

The following table indicates which attributes are mandatory and which ones are optional for ProductSpecification.

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server when the first version of the Product Specification is created and provided in the response upon resource creation. Accepted in an entity-creation request for a new version of the Product Specification
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation

Attribute Name	Mandatory or Optional	Comments
brand	O	
productNumber	O	
version	O	
lastUpdate	M (in response messages) O (otherwise)	This is a change from release 17.5. In release 19, lastUpdate is mandatory in response messages.
name	M	
description	O	
isBundle	O	Default value is **false**
lifecycleStatus	M (in response messages) O (otherwise)	
isSellable	O	
statusReason	O	
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory in response messages
startDateTime	M	
endDateTime	O	

Attribute Name	Mandatory or Optional	Comments
productSpecificationRelationship	O	Array of product specification relationship structures
id	M	
href	M (in response messages) O (otherwise)	
relationshipType	M	This is a change from release 17.5. In release 19, the relationship type is mandatory.
name	M (in response messages) O (otherwise)	
validFor	O	
startDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
endDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
attachment	O	Array of attachment ref or value structures
id	M (in response messages, or in	

Attribute Name	Mandatory or Optional	Comments
	request messages for existing attachment) O (in request messages for new attachment, must be blank)	
href	M (in response messages) O (otherwise)	
attachmentType	M (in response messages, or in request messages for new attachment) O (in request messages for existing attachment)	
name	O	
description	O	
mimeType	M (in response messages, or in request messages for new attachment) O (in request messages for existing attachment)	This is a change from release 17.5. In release 19, mimeType is mandatory.
url	O	Either url or content must be populated if the resource is the value object

Attribute Name	Mandatory or Optional	Comments
content	O	Either url or content must be populated if the resource is the value object
size	O	
validFor	O	
endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
bundledProductSpecification	M (if isBundle is **true**) O (if isBundle is **false** must be empty)	Array of product specifications referred to within this product specification
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	
lifecycleStatus	O	

Attribute Name	Mandatory or Optional	Comments
productSpecCharacteristic	O	Array of product specification characteristics
description	O	
configurable	O	
extensible	O	
isUnique	O	
minCardinality	O	
maxCardinality	O	
name	M	
valueType	O	
regEx	O	
productSpecCharacteristicValue	O	Array of Product Specification Characteristic Values
isDefault	O	
rangeInterval	O	
regex	O	
unitOfMeasure	O	
valueFrom	O	

Attribute Name			Mandatory or Optional	Comments
	valueTo		O	
	valueType		O	
	validFor		O	
		endDateTime	O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
		startDateTime	O (if endDateTime is not empty) M (if endDateTime is empty)	
	value		M	
validFor			O	
	endDateTime		O (if startDateTime is not empty) M (if startDateTime is empty)	If validFor is supplied, one or other or both of the start or end dates must be supplied.
	startDateTime		O (if endDateTime is not empty) M (if endDateTime is empty)	
	productSpecCharRelationship		O	
		id	M	

Attribute Name			Mandatory or Optional	Comments
		href	M (in response messages) O (otherwise)	
		charSpecSeq	O	
		name	M	
		relationshipType	M	
		targetProductSchema	O	
			O	
	relatedParty		O	Array of related party structures
		id	M	
		href	M (in response messages) O (otherwise)	
		role	O	
		name	M (in response messages) O (otherwise)	
	targetProductSchema		O	
		@referredType	M	
		@schemaLocation	M	

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Attribute Name	Mandatory or Optional	Comments
resourceSpecification	O	Array of resource specification ref structures
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	M (in response messages) O (otherwise)	
serviceSpecification	O	Array of service specification ref structures
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	M (in response messages) O (otherwise)	

6. Catalog resource MANDATORY AND OPTIONAL ATTRIBUTES

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The following table indicates which attributes are mandatory and which ones are optional for Catalog.

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server when the first version of the Catalog is created and provided in the response upon resource creation. Accepted in an entity-creation request for a new version of the Catalog
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation
catalogType	O	
version	O	
lastUpdate	M (in response messages) O (otherwise)	This is a change from release 17.5. In release 19, lastUpdate is mandatory in response messages.
name	M	
description	O	
lifecycleStatus	M (in response messages) O (otherwise)	

Attribute Name	Mandatory or Optional	Comments
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory in response messages
startDateTime	M	
endDateTime	O	
category	O	Array of category ref structures
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	M (in response messages) O (otherwise)	
relatedParty	O	Array of related party structures
id	M	
href	M (in response messages) O (otherwise)	
role	O	

Attribute Name	Mandatory or Optional	Comments
name	M (in response messages) O (otherwise)	

7. Category resource MANDATORY AND OPTIONAL ATTRIBUTES

The following table indicates which attributes are mandatory and which ones are optional for Category.

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server when the first version of the Category is created and provided in the response upon resource creation. Accepted in an entity-creation request for a new version of the Category
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation
catalogType	O	
version	O	
lastUpdate	M (in response messages)	This is a change from release 17.5. In release 19, lastUpdate is

Attribute Name	Mandatory or Optional	Comments
	O (otherwise)	mandatory in response messages.
isRoot	O	Default is **false**
parentId	M (if isRoot is **false**) O (if isRoot is **true** must be empty)	
name	M	
description	O	
lifecycleStatus	M (in response messages) O (otherwise)	
validFor	O	This is a change from release 17.5. In release 19, validFor is no longer mandatory in response messages
	startDateTime	M	
	endDateTime	O	
subCategory	O	Array of category ref structures This is a change from release 17.5. In release 19, a category can be created with no product offering and with no subcategory.

Attribute Name	Mandatory or Optional	Comments
id	M	
href	M (in response messages) O (otherwise)	
version	O	
name	M (in response messages) O (otherwise)	
productOffering	O	Array of product offering ref structures. This is a change from release 17.5. In release 19, a category can be created with no product offering and with no subcategory.
id	M	
href	M (in response messages) O (otherwise)	
name	M (in response messages) O (otherwise)	

8. ImportJob resource MANDATORY AND OPTIONAL ATTRIBUTES

The following table indicates which attributes are mandatory and which ones are optional for ImportJob.

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server when the ImportJob is created and provided in the response upon resource creation.
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation
completionDate	O	
contentType	M	
creationDate	M (in response messages) O (otherwise)	
errorLog	O	
path	O	
url	M	
status	M (in response messages) O (otherwise)	

9. ExportJob resource MANDATORY AND OPTIONAL ATTRIBUTES

The following table indicates which attributes are mandatory and which ones are optional for ExportJob.

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Generated by the server when the ExportJob is created and provided in the response upon resource creation.
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in Location header provided upon entity creation
completionDate	O	
contentType	M (in response messages) O (otherwise)	
query	M	
creationDate	M (in response messages) O (otherwise)	
errorLog	O	
path	O	
url	M	
status	M (in response messages) O (otherwise)	

4. NOTIFICATION MODEL CONFORMANCE

The Pub/Sub models are common and described in the TMF REST Design Guidelines. Use the following templates to describe the Hub Mandatory and Optional attributes and filtering support.

10. API MANDATORY AND OPTIONAL NOTIFICATIONS

For the Notifications defined by the API the following table indicates which ones are mandatory (i.e. must be supported) and which ones are optional.

Notification Name	Mandatory or Optional	Comments
CatalogCreateEvent	O	
CatalogDeleteEvent	O	
CatalogBatchEvent	O	
CategoryCreateEvent	M	
CategoryDeleteEvent	M	
ProductOfferingCreateEvent	M	
ProductOfferingAttributeValueChangeEvent	M	
ProductOfferingStateChangeEvent	M	
ProductOfferingDeleteEvent	M	
ProductOfferingPriceCreateEvent	M	
ProductOfferingPriceAttributeValueChangeEvent	M	
ProductOfferingPriceStateChangeEvent	M	

ProductOfferingPriceDeleteEvent	M	
ProductSpecificationCreateEvent	M	
ProductSpecificationDeleteEvent	M	

11. Notification MANDATORY AND OPTIONAL ATTRIBUTES

The notification payload includes fixed attributes from the event model (e.g. eventide, eventTime, eventType, etc.), and fields from the resource embedded within the event.

- Fixed attributes are mandatory or optional according to the Event conformance profile.
- Resource-specific attributes are mandatory or optional according to the tables in the RESOURCE MODEL CONFORMANCE section above, for response messages (thus href is a mandatory field in the event since it is mandatory in response messages).

5. API OPERATIONS CONFORMANCE

12. API MANDATORY AND OPTIONAL OPERATIONS

The following table indicates which operations are mandatory for a conforming implementation, and which are optional, for each of the resources in the API.

Uniform API Operation	Mandatory/Optional	Comments
GET	M for all resources	GET must be used to retrieve a representation of a resource or list of resources
POST	M for all resources except for Catalog	POST must be used to create a new resource
PATCH	M for all resources except Catalog (ImportJob and	PATCH must be used to partially update a resource

	ExportJob do not support PATCH)	
DELETE	M for all resources except Catalog	DELETE must be used to remove a resource

6. API GET OPERATION CONFORMANCE

This section describes how a conforming API implements the GET operation.

13. Definitions for Filter

The following definitions apply to all the GET operations:

- **Filtered Search:** A filtered search can be applied using query parameters to obtain only the resources that meet the criteria defined by the filtering parameters included in the query request. Several elements can be applied to the filtered search. In that case logic, a logical AND is applied to combine the criteria (e.g.:?severity=<value>&status=<value>). The tables below show which filter criteria are mandatory for a conforming implementation.
- **Attribute selection (Limiting Response Data):** In order to limit which attributes are included in the response, the GET request can include the **?fields=** query parameter. Only those attributes whose names are supplied in this parameter will be returned. Attribute selection capabilities are the same for collections retrieval and individual resource queries. The tables below show which selection criteria are mandatory for a conforming implementation.
- **Level:** The filtering and attribute selection can apply to the top level resource or to contained resources. The tables below show which attributes need to be supported in top-level or contained resources.

14. ProductOffering

6.1.1. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
version	O	NA	M	NA
lastUpdate	O	NA	M	NA
name	O	NA	M	NA
description	O	NA	M	NA
isBundle	M	NA	M	NA
isSellable	M	NA	M	NA
lifecycleStatus	M	NA	M	NA
@type	O	NA	M	NA
@baseType	O	NA	M	NA
@schemaLocation	O	NA	M	NA
validFor	NA	O	M	O
category	O	NA	M	O
channel	O	NA	M	O
place	NA	O	M	O
bundledProductOffering	NA	O	M	O
serviceLevelAgreement	NA	O	M	O
productSpecification	NA	O	M	O

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
serviceCandidate	NA	O	M	O
resourceCandidate	NA	O	M	O
productOfferingTerm	NA	O	M	O
productOfferingPrice	NA	O	M	O
prodSpecCharValueUse	NA	O	M	O
agreement	NA	O	M	O
marketSegment	NA	O	M	O
attachment	NA	O	M	O

Filtered Search: A filtered search can be applied using the following filtering criteria

- isBundle: to obtain the list of offerings that are single product (**false**) or bundle (**true**)
- isSellable: to obtain the list of offerings that can be sold stand-alone (**true**) or only through a bundle offering (**false**)
- lifecycleStatus: To obtain the list of offerings that are in a given status
- name: To obtain the details of the offering with a given name
- category (optional): To obtain the list of offerings belonging to a given category identifier
- channel (optional): To obtain the list of offerings belonging to a given channel identifier
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

6.1.2. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

15. ProductOfferingPrice

6.1.3. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
version	O	NA	M	NA
lastUpdate	O	NA	M	NA
name	M	NA	M	NA
Filtering (GET with no id)	Filtering (GET with no id)	Filtering (GET with no id)	Filtering (GET with no id)	Filtering (GET with no id)
isBundle	M	NA	M	NA
lifecycleStatus	M	NA	M	NA
@type	O	NA	M	NA
@baseType	O	NA	M	NA
@schemaLocation	O	NA	M	NA
priceType	O	NA	M	NA
unitOfMeasure	NA	O	M	O

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
recurringChargePeriodType	O	NA	M	NA
recurringChargePeriodLength	O	NA	M	NA
percentage	O	NA	M	NA
validFor	NA	O	M	O
price	NA	O	M	O
bundledPopRelationship	NA	O	M	O
popRelationship	NA	O	M	O
prodSpecCharValueUse	NA	O	M	O
productOfferingTerm	NA	O	M	O
place	NA	O	M	O
constraint	NA	O	M	O
pricingLogicAlgorithm	NA	O	M	O
tax	NA	O	M	O

Filtered Search: A filtered search can be applied using the following filtering criteria

- isBundle: to obtain the list of product offering prices that are single (**false**) or composite (**true**)
- lifecycleStatus: To obtain the list of product offering prices that are in a given status
- name: To obtain the details of the product offering price with a given name
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

6.1.4. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

16. ProductSpecification

6.1.5. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
productNumber	O	NA	M	NA
version	O	NA	M	NA
lastUpdate	O	NA	M	NA
name	O	NA	M	NA
description	O	NA	M	NA
isBundle	M	NA	M	NA
brand	O	NA	M	NA
lifecycleStatus	M	NA	M	NA
@type	O	NA	M	NA
@baseType	O	NA	M	NA

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
@schemaLocation	O	NA	M	NA
validFor	NA	O	M	O
relatedParty	NA	O	M	O
attachment	NA	O	M	O
bundledProductSpecification	NA	O	M	O
productSpecificationrelationship	NA	O	M	O
serviceSpecification	NA	O	M	O
resourceSpecification	NA	O	M	O
productSpecCharacteristic	NA	O	M	O

Filtered Search: A filtered search can be applied using the following filtering criteria

- isBundle: to obtain the list of product specifications that are simple (**false**) or complex (**true**)
- lifecycleStatus: To obtain the list of product specifications that are in a given status
- name: To obtain the details of the product specification with a given name
- productNumber (optional): To obtain the list of the product specifications with a given product number
- brand (optional): To obtain the list of the product specifications with a given brand name
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

6.1.6. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

17. GET /Catalog

6.1.7. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
version	O	NA	M	NA
lastUpdate	O	NA	M	NA
name	M	NA	M	NA
description	O	NA	M	NA
lifecycleStatus	M	NA	M	NA
@type	O	NA	M	NA
@baseType	O	NA	M	NA
@schemaLocation	O	NA	M	NA
validFor	NA	O	M	O
category	NA	O	M	O
relatedParty	NA	O	M	O

Filtered Search: A filtered search can be applied using the following filtering criteria

- lifecycleStatus: To obtain the list of catalogs that are in a given status
- name: To obtain the details of the catalog with a given name
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

6.1.8. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

18.   GET /Category

6.1.9. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
version	O	NA	M	NA
lastUpdate	O	NA	M	NA
name	M	NA	M	NA
description	O	NA	M	NA
lifecycleStatus	M	NA	M	NA
@type	O	NA	M	NA

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
@baseType	O	NA	M	NA
@schemaLocation	O	NA	M	NA
parentId	O	NA	M	NA
isRoot	M	NA	M	NA
validFor	NA	O	M	O
subCategory	NA	O	M	O
productOffering	NA	O	M	O

Filtered Search: A filtered search can be applied using the following filtering criteria
- lifecycleStatus: To obtain the list of categories that are in a given status
- name: To obtain the details of the category with a given name
- isRoot: To obtain a list of root categories
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

6.1.10. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

19. GET /ImportJob

6.1.11. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
completionDate	M	NA	M	NA
contentType	NA	NA	M	NA
creationDate	M	NA	M	NA
errorLog	O	NA	M	NA
path	O	NA	M	NA
query	NA	NA	M	NA
status	M	NA	M	NA
@type	O	NA	M	NA
@baseType	O	NA	M	NA
@schemaLocation	O	NA	M	NA

Filtered Search: A filtered search can be applied using the following filtering criteria

- status: To obtain the list of jobs that are in a given status
- completionDate: To obtain the details of jobs completed on a certain date
- creationDate: To obtain the details of jobs started on a certain date
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

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6.1.12. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

20. GET /ExportJob

6.1.13. Filtering (GET with no id)

See section Definitions for explanation of the table.

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	NA	NA	M	NA
href	NA	NA	M	NA
completionDate	M	NA	M	NA
contentType	NA	NA	M	NA
creationDate	M	NA	M	NA
errorLog	O	NA	M	NA
path	O	NA	M	NA
query	NA	NA	M	NA
url	NA	NA	M	NA
status	M	NA	M	NA
@type	O	NA	M	NA
@baseType	O	NA	M	NA
@schemaLocation	O	NA	M	NA

Filtered Search: A filtered search can be applied using the following filtering criteria

- status: To obtain the list of jobs that are in a given status
- completionDate: To obtain the details of jobs completed on a certain date
- creationDate: To obtain the details of jobs started on a certain date
- other optional attributes as defined in the table above

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

6.1.14. Retrieve (GET with id)

Attribute Selection: An attribute-limited response can be requested using the **fields=** query parameter for any of the attributes in the first level of the resource definition.

7. API POST OPERATION CONFORMANCE

The following POST Operation requirements apply to all resources which have POST operation as Mandatory.

- The response to POST operation must include a Location header set to href of created resource.
- The server should return response code as 201 upon successful creation of a resource.
- If the POST request doesn't include mandatory parameters as per the model resource definition, the server must reject the request (replying with a 4xx error response) indicating the parameter not specified.
- If the POST request includes optional parameters as per the model resource definition that are not supported by the server, the server must reject the request (replying with a 4xx error response) indicating the parameter not supported.
- The response to POST request from the server must include a BODY with the contents of the new resource created
- The BODY of the POST response from the server must include attributes id and href under each of the entities within the resource model that can be addressed individually and were included in the request.

8. API PATCH OPERATION CONFORMANCE

The following PATCH Operation requirements apply to all resources which have POST operation as Mandatory.

- The server should return response code as 200 upon successful update of a resource.
- If the PATCH request attempts to set to empty mandatory parameters as per the model resource definition, the server must reject the request (replying with a 4xx error response) indicating the parameter not specified.
- If the PATCH request includes optional parameters as per the model resource definition that are not supported by the server, the server must reject the request (replying with a 4xx error response) indicating the parameter not supported.
- The response to PATCH request from the server must include a BODY with the contents of the updated resource created

9. API DELETE OPERATION CONFORMANCE

The following DELETE Operation requirements apply to all resources which have DELETE operation as Mandatory.

- The server should return response code as 204 upon successful deletion of a resource.

10. API CONFORMANCE TEST SCENARIOS

This section describes the test scenarios required for the basic CONNECT certification of the API.

Test Cases must be executed in the order defined for each resource because the result from one of the scenarios will be input for the next one.

Requests must be addressed to the endpoint provided for certification, specifically they must be addressed to the URI defined by the concatenation of the {apiRoot} and the specific resource, where the {apiRoot} is defined as **{serverRoot}/troubleTicket/v1**, where {serverRoot} defines the certification endpoint

21. ProductOffering resource TEST CASES

Nominal Scenarios

TC_ProdOff_N1 – Create new single Product Offering

- Send a POST message to {apiRoot}/productOffering/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "isBundle": false,
    "lifecycleStatus": "Active",
    "validFor":
    {
        "startDateTime":" <any value with correct
datetime format>",
        "endDateTime": "<any value with correct
datetime format>"
    },
    "productSpecification":
     {
        "id": "11",
        "name": "Product11" ""
    }
}
```

- Wait for a response from the server with the following features:

    - Response Code 201-Created

    - Include a location header in the body set to /catalogManagement/productOffering/{IDpo1} where {IDpo1} indicates the identifier assigned by the server to the new ProductOffering resource

    - The response message includes all mandatory parameters

    - The body of the response matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/

- Wait for a response from the server with the following features:

    - Response Code 200-OK

- The body of the response includes one ProductOffering resource with ID set to {IDpo1}, the same identifier as assigned by the server to the new resource created

- The response message includes all mandatory parameters

- The body of the response for the resource with identifier {IDpo1} matches the values in the original request

• Send a GET message to /{apiRoot}/productOffering/{IDpo1}

• Wait for a response from the server with the following features:

- Response Code 200-OK

- The response message includes all mandatory parameters

- The body of the response includes a ProductOffering resource structure that matches the values in the original request

TC_ProdOff_N2 – Create new bundling Product Offering

• Send POST to /{apiRoot}/productOffering/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "isBundle": true,
    "lifecycleStatus": "Active",
    "validFor":
    {
        "startDateTime": "<any value with correct
datetime format>",
        "endDateTime": "<any value with correct
datetime format>"
    },
    "bundledProductOffering":
    [
        {
```

```
                    "id": "121",

                    "name": "ProductOffering121"

                },

                {

                    "id": "122",

                    "name": "ProductOffering122"

                }

            ]

        }
```

- Wait for a response from the server with the following features:

    - Response Code 201-Created

    - Include a location header in the body set to
      /catalogManagement/productOffering/{IDpo2} where {IDpo2} indicates
      the identifier assigned by the server to the new ProductOffering
      resource

    - The response message includes all mandatory parameters

    - The body of the response matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes two ProductOffering resources, one
      of them with ID set to {IDpo2}, the same identifier as assigned by the
      server to the new resource created

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDpo2}
      matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/{IDpo2}

- Wait for a response from the server with the following features:

- Response Code 200-OK

- The response message includes all mandatory parameters

- The body of the response includes a ProductOffering resource structure that matches the values in the original request

TC_ProdOff_N3 – Create new single Product Offering with prices included

- Send a POST message to /{apiRoot}/productOffering/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "isBundle": false,
    "lifecycleStatus": "Retired",
    "validFor":
    {
        "startDateTime": "<any value with correct
datetime format>",
        "endDateTime": "<any value with correct
datetime format>"
    },
    "productSpecification":
     {
        "id": "13",
        "name": "Product13"
    },
    "productOfferingPrice":
    [
        {
            "name": "Price13_1",
            "description": "This is the first price
plan for ProductOffering13",
            "validFor":
```

```
                    {
                        "startDateTime": "<any value with
correct datetime format>",
                        "endDateTime": "<any value with
correct datetime format>"
                    },
                    "priceType": "recurring",
                    "unitOfMeasure": "1 subscription",
                    "price":
                        {
                            "taxIncludedAmount": 131,
                            "currencyCode": "GBP",
                        },
                    "recurringChargePeriod": "monthly"
                },
                {
                    "name": "Price13_2",
                    "description": "This is the second price
plan for ProductOffering13"
                    "validFor":
                    {
                        "startDateTime": "<any value with
correct datetime format>",
                        "endDateTime": "<any value with
correct datetime format>"
                    },
                    "priceType": "one time",
                    "unitOfMeasure": "1 subscription",
                    "price":
                        {
                            "taxIncludedAmount": 132,
                            "currencyCode": "EUR"
                        }
```

```
                            }

                    ]

            }
```

- Wait for a response from the server with the following features:

    - Response Code 201-Created

    - Include a location header in the body set to /catalogManagement/productOffering/{IDpo3} where {IDpo3} indicates the identifier assigned by the server to the new ProductOffering resource

    - The response message includes all mandatory parameters

    - The body of the response matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes three ProductOffering resources, one of them with ID set to {IDpo3}, the same identifier as assigned by the server to the new resource created

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier IDn3 matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/{IDpo3}

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The response message includes all mandatory parameters

    - The body of the response includes a ProductOffering resource structure that matches the values in the original request

TC_ProdOff_N4 – Search for Product Offerings with specific attributes

- Send a GET message to /{apiRoot}/ productOffering

- Wait for a response from the server with the following features:
    - Response Code 200-OK

    - The body of the response includes three productSpecification resources, referring to {IDps1}, {IDps2} and {IDps3}

    - The body of the response for the resource with each identifier matches the values in the corresponding original request

- Send a GET message to /{apiRoot}/productOffering/?isBundle=true

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes one ProductOffering resource, referring to {IDpo2}

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDpo2} matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/?isBundle=false

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes two ProductOffering resources, referring to {IDpo1} and {IDpo3}

    - The response message includes all mandatory parameters

    - The body of the response for the resource with each identifier matches the values in the corresponding original request

- Send a GET message to /{apiRoot}/productOffering/?status=Active

- Wait for a response from the server with the following features:

    - Response Code 200-OK

- The body of the response includes two ProductOffering resources, referring to {IDpo1} and {IDpo2}

- The response message includes all mandatory parameters

- The body of the response for the resource with each identifier matches the values in the corresponding original request

- Send a GET message to /{apiRoot}/productOffering/?status=Retired

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes one ProductOffering resource, referring to {IDpo3}

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDpo3} matches the values in the original request

TC_ProdOff_N5 – Attribute restricted retrieval of Product Offering data

- Send a GET message to /{apiRoot}/productOffering/{IDpo1}?fields=name,description

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes one ProductOffering resource, referring to {IDpo1} and including only attributes name and description, matching the values in the original request

- Send a GET message to /{apiRoot}/productOffering/{IDpo2}?fields=name, validFor,bundledProductOffering

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes one ProductOffering resource, referring to {IDpo2} and including only attributes name, validFor and bundledProductOffering, matching the values in the original request

Notice that this test case is using parameters **name** and **description** to filter the data included in the response but any other parameter could be used

TC_ProdOff_N6 – Filtered Search and Attribute restricted response

- Send a GET message to
  /{apiRoot}/productOffering/?isBundle=false&fields=name,description,validFor

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes two ProductOffering resources, referring to {IDpo1} and {IDpo3}

  - The body of the response for the resource with each identifier includes only attributes name, description and validFor, matching the values in the corresponding original request

Notice that this test case is using parameters **name**, **description** and **validFor** to filter the data included in the response but any other parameter could be used

TC_ProdOff_N7 – Parameter not included in create request but provided in response

- Send a POST message to {apiRoot}/productOffering/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "isBundle": false,
    "validFor":
    {
        "startDateTime": "<any value with correct
datetime format>",
        "endDateTime": "<any value with correct
datetime format>"
    },
    "productSpecification":
     {
        "id": "11",
```

```
                                "name": "Product71"

                        }

                }
```

- Wait for a response from the server with the following features:

  - Response Code 201-Created

  - Include a location header in the body including the identifier assigned by the server to the new ProductOffering resource

  - The body of the response includes parameter **lifecycleStatus**

Notice that this test case is using **lifecycleStatus** parameter but any other parameter that is mandatory as part of the entity definition stored in the server (as defined by SID) but not required to be sent in the creation request, can be used.

Error Scenarios

TC_ProdOff_E1 – Unknown Product Offering

- Send a GET message to /{apiRoot}/productOffering/{IDpo4}, where {IDpo4} does not match any of the identifiers previously created in the server

- Wait for a response from the server with the following features:

  o Response Code 404-Not Found

TC_ProdOff_E2 – Invalid Request – Missing mandatory parameter

- Send a POST message to {apiRoot}/productOffering/ with the following contents in the BODY.

```
        {

                "description": "<anytext>",

                "isBundle": false,

                "lifecycleStatus": "Active",

                "validFor":

                {

                        "startDateTime": "<any value with correct
        datetime format>",

                        "endDateTime": "<any value with correct
        datetime format>"
```

```
            },
            "productSpecification":
             {
                 "id": "11",
                 "name": "Product11"
             }
        }
```

Notice that this request is missing mandatory parameter **name** but any other mandatory parameter could be used

- Wait for an error response from the server indicating the mandatory parameter is missing in the request

TC_ProdOff_E3 – Invalid Request – Missing parameter mandatory in context

- Send a POST message to {apiRoot}/productOffering/ with the following contents in the BODY.

```
        {
            "name": "",
            "description": "",
            "isBundle": true,
            "lifecycleStatus": "Active",
            "validFor":
            {
                 "startDateTime": "<any value with correct
        datetime format>",
                 "endDateTime": "<any value with correct
        datetime format>"
            }
        }
```

Notice that this request is missing mandatory parameter **bundledProductOffering** when parameter **isBundle** is set to **true** but

any other parameter that becomes mandatory based on the context could be used

- Wait for an error response from the server indicating the mandatory parameter is missing in the request

22.   ProductSpecification resource TEST CASES

Nominal Scenarios

TC_ProdSpec_N1 – Create new single Product Specification

- Send a POST message to {apiRoot}/productSpecification/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "productNumber": "<anytext>",
    "brand": "<anytext>",
    "isBundle": false,
    "lifecycleStatus": "Retired",
    "validFor":
    {
        "startDateTime": "<any value with correct datetime format>",
        "endDateTime": "<any value with correct datetime format>"
    },
    "productSpecCharacteristic":
    [
      {
        "name": "Characteristic1",
        "valueType": "string",
        "productSpecCharacteristicValue":
            [
                {
```

```
                                    "valueType": "string",

                                    "isDefault": true,

                                    "value": "value11"

                                },

                                {

                                    "valueType": "string",

                                    "isDefault": false,

                                    "value": "value12"

                                }

                            ]

                    }

                ]

            }
```

- Wait for a response from the server with the following features:

    - Response Code 201-Created

    - Include a location header in the body set to
      /catalogManagement/productSpecification/{IDps1} where {IDps1}
      indicates the identifier assigned by the server to the new
      ProductSpecification resource

    - The response message includes all mandatory parameters

    - The body of the response matches the values in the original request

- Send a GET message to /{apiRoot}/productSpecification/

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes one ProductSpecification resource
      with ID set to {IDps1}, the same identifier as assigned by the server to
      the new resource created

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDps1}
      matches the values in the original request

- Send a GET message to /{apiRoot}/productOffering/{IDps1}

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The response message includes all mandatory parameters

    - The body of the response includes a ProductSpecification resource structure that matches the values in the original request

TC_ProdSpec_N2 – Create new bundled Product Specification

- Send a POST message to {apiRoot}/productSpecification/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "productNumber": "<anytext>",
    "brand": "<anytext>",
    "isBundle": true,
    "lifecycleStatus": "Active",
    "validFor":
    {
        "startDateTime": "<any value with correct
datetime format>",
        "endDateTime": "<any value with correct
datetime format>"
    },
    "bundledProductSpecification":
    [
        {
            "id": "121",
            "name": "ProductSpec121"
        },
```

```
                          {
                              "id": "122",
                              "name": "ProductSpec122"
                          }
                      ]
              }
```

- Wait for a response from the server with the following features:

    - Response Code 201-Created

    - Include a location header in the body set to
      /catalogManagement/productSpecification/{IDps2} where {IDps2}
      indicates the identifier assigned by the server to the new
      ProductSpecification resource

    - The response message includes all mandatory parameters

    - The body of the response matches the values in the original request

- Send a GET message to /{apiRoot}/productSpecification/

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The body of the response includes one ProductSpecification resource
      with ID set to {IDps2}, the same identifier as assigned by the server to
      the new resource created

    - The response message includes all mandatory parameters

    - The body of the response for the resource with identifier {IDps2}
      matches the values in the original request

- Send a GET message to /{apiRoot}/productSpecification/{IDps2}

- Wait for a response from the server with the following features:

    - Response Code 200-OK

    - The response message includes all mandatory parameters

The body of the response includes a ProductSpecification resource structure that matches the values in the original request

TC_ProdSpec_N3 – Search for Product Spec with specific attributes

- Send a GET message to /{apiRoot}/productSpecification

- Wait for a response from the server with the following features:
  - Response Code 200-OK

  - The body of the response includes two productSpecification resources, referring to {IDps1} and {IDps2}

  - The body of the response for the resource with each identifier matches the values in the corresponding original request

- Send a GET message to /{apiRoot}/productSpecification/?isBundle=true

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes one single productSpecification resource, referring to {IDps2}

  - The response message includes all mandatory parameters

  - The body of the response for the resource matches the values in the original request for {IDps2}

- Send a GET message to /{apiRoot}/ productSpecification /?isBundle=false

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes one single productSpecification resource, referring to {IDps1}

  - The response message includes all mandatory parameters

  - The body of the response for the resource matches the values in the original request for {IDps1}

- Send a GET message to /{apiRoot}/ productSpecification /?status=Active

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes one single productSpecification resources, referring to {IDps2}

  - The response message includes all mandatory parameters

  - The body of the response for the resource matches the values in the original request for {IDps2}

- Send a GET message to /{apiRoot}/ productSpecification /?status=Retired

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes one single productSpecification resource, referring to {IDps1}

  - The response message includes all mandatory parameters

  - The body of the response for the resource matches the values in the original request for {IDps1}

TC_ProdSpec_N4 – Attribute restricted retrieval of Product Offering data

- Send a GET message to /{apiRoot}/ productSpecification/{IDps1}?fields=name,description

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes one productSpecification resource, referring to {IDps1} and including only attributes name and description, matching the values in the original request for {IDps1}

- Send a GET message to /{apiRoot}/ productSpecification /{IDps2}?fields=name, validFor,bundledProductSpecification

- Wait for a response from the server with the following features:

- Response Code 200-OK

- The body of the response includes one productSpecification resource, referring to {IDps2} and including only attributes name, validFor and bundledProductOffering, matching the values in the original request for {IDps2}

Notice that this test case is using parameters **name** and **description** to filter the data included in the response but any other parameter could be used

TC_ProdSpec_N5 – Filtered Search and Filtered data response

- Send a GET message to /{apiRoot}/productSpecification/?isBundle=false&fields=name,description,validFor

- Wait for a response from the server with the following features:

  - Response Code 200-OK

  - The body of the response includes on single productSpecification resource, referring to {IDps1}

  - The body of the response for the resource includes only attributes name, description and validFor, matching the values in the corresponding original request for {IDps1}

Notice that this test case is using parameters **name** and **description** to filter the data included in the response but any other parameter could be used

TC_ProdSpec_N6 – Parameter not included in create request but provided in response

- Send a POST message to {apiRoot}/productSpecification/ with the following contents in the BODY

```
{
    "name": "<anytext>",
    "description": "<anytext>",
    "brand": "<anytext>",
    "isBundle": false,
    "validFor":
    {
```

```
            "startDateTime": "<any value with correct
    datetime format>",

            "endDateTime": "<any value with correct
    datetime format>"

        },

        "productSpecCharacteristic":

        [

          {

            "name": "Characteristic1",

            "valueType": "string",

            "productSpecCharacteristicValue":

            [

              {

                "valueType": "string",

                "isDefault": true,

                "value": "value61"

              }

            ]

          }

        ]

    }
```

- Wait for a response from the server with the following features:

    - Response Code 201-Created

    - The body of the response includes parameter **lifecycleStatus**

  Notice that this test case is using **lifecycleStatus** parameter but any other parameter that is mandatory as part of the entity definition stored in the server (as defined by SID) but not required to be sent in the creation request, can be used.

Error Scenarios

TC_ProdSpec_E1 – Unknown Product Specification

- Send a GET message to /{apiRoot}/productSpecification/{IDps4}, where {IDps4} does not match any of the identifiers previously creted in the server

- Wait for a response from the server with the following features:

  - Response Code 404-Not Found

TC_ ProdSpec _E2 – Invalid Request – Missing mandatory parameter

- Send a POST message to {apiRoot}/ productSpecification/ with the following contents in the BODY.

```
{
      "description": " < anytext > ",
      "productNumber": " < anytext > ",
      "brand": " < anytext > ",
      "isBundle": false,
      "lifecycleStatus": "Retired",
      "validFor": {
            "startDateTime": " < any value with
correct datetime format > ",
            "endDateTime": " < any value with correct
datetime format > "
      },
      "productSpecCharacteristic": [{
            "name": "Characteristic1",
            "valueType": "string",
            "productSpecCharacteristicValue": [{
                        "valueType": "string",
                        "isDefault": true,
                        "value": "value11"
                  },
                  {
                  "valueType": "string",
                  "isDefault": false,
                  "value": "value12"
                  }
```

```
                        ]

                   }]

            }
```

Notice that this request is missing mandatory parameter **name** but any other mandatory parameter could be used

- Wait for an error response from the server indicating the mandatory parameter is missing in the request

TC_ ProdSpec _E3 – Invalid Request – Missing parameter mandatory in context

- Send a POST message to {apiRoot}/productOffering/ with the following contents in the BODY.

```
{

    "name": "<anytext>",

    "description": "<anytext>",

    "productNumber": "<anytext>",

    "brand": "<anytext>",

    "isBundle": true,

    "lifecycleStatus": "Active",

    "validFor":

    {

        "startDateTime": "<any value with correct
datetime format>",

        "endDateTime": "<any value with correct
datetime format>"

    },

}
```

Notice that this request is missing mandatory parameter **bundledProductSpecification** when parameter **isBundle** is set to **true** but any other parameter that becomes mandatory based on the context could be used

- Wait for an error response from the server indicating the mandatory parameter is missing in the request

tmforum

11. ACKNOWLEDGEMENTS

23. Release History

Release Number	Date	Release led by:	Description
Rev1	2015		First Release of Draft Version of the Document.
Rev 1.1	Jun. 2, 2017	Kamal Maghsoudlou Ericsson kamal.maghsoudlou @ericsson.com	Updated in correlation of the Product Catalog API Release 17.0
Rev 2.2.0	December 2017	Kamal Maghsoudlou Ericsson kamal.maghsoudlou @ericsson.com	Updated in correlation of the Product Catalog API Release 17.5.
Rev 2.2.1	16-Jan-2018	Adrienne Walcott	Formatting/style edits prior to publishing
Rev 3	25-Jun-2018	Jonathan Goldberg	Updated for 19,0

24. Version History

Release Number	Date	Release led by:	Description
17.5.0	January 2018	Kamal Maghsoudlou Ericsson kamal.maghsoudlou @ericsson.com	Updated in correlation of the Product Catalog API Release 17.0
19.0.0	June 25, 2019	Jonathan Goldberg Amdocs	Updated for API release 19.0.0

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