



Product Ordering Management API Conformance Profile

TMF622B

Release 17.5.0

January 2018

Release: TM Forum Release 17.5.0	Status: Member Evaluation
Version: 1.0.1	IPR Mode: RAND

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N/A

INTRODUCTION

The following document is the REST API Conformance for the Product Ordering API (TMF622).

API DESCRIPTION

The Product Ordering API provides a standardized mechanism for placing a product order with all of the necessary order parameters. The API consists of a simple set of operations that interact with CRM/Order Negotiation systems in a consistent manner.

A product order is created based on a product offer that is defined in a catalog. The product offer identifies the product or set of products that are available to a customer, and includes characteristics such as pricing, product options and market.

The product order references the product offer and identifies any specific requests made by the customer.

RESOURCE MODEL CONFORMANCE

ProductOrdering API MANDATORY AND OPTIONAL RESOURCES

Resource Name	Mandatory or Optional	Comments
ProductOrder	M	

productOrder resource MANDATORY AND OPTIONAL ATTRIBUTES

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Initially generated by the server and provided in the response upon resource creation. Not available in POST request
href	M (in response messages) O (otherwise)	Initially generated by the server and provided in the response upon resource creation Value in response must be the same as the one set in Location header provided upon entity creation Not available in POST request
externalId	O	
priority	O	Implementation could defined a be default value
description	O	
state	M (in response messages) O (otherwise)	Only required in response messages from the server when providing the ProductOrdering entity contents (responses to create-POST and read-GET the entity)
orderDate	M (in response messages)	Not available in POST request

completionDate	O	Not available in POST request
requestedStartDate	O	
requestedCompletionDate	O	
expectedCompletionDate	O	Not available in POST request
NotificationContact	O	
@baseType	O	
@type	O	
@schemaLocation	O	
relatedParty	O	Array of structures
id	M	
href	M	
role	M	
name	O	
@referredType	O	
channel	O	zero or one channel
id	M	
href	O	
name	O	
role	O	
@type	O	
billingAccount	O	zero or one billing account
id	M	
href	M	
name	O	
@referredType	O	
payment	O	Array of payment(s)
id	M	
href	M	
name	O	
@referredType	O	
note	O	Array of note(s)
date	O	
author	M	
text	M	
orderTotalPrice	O	Array of orderTotalPrice,

itemTotalPrice		itemTotalPrice, itemPrice
itemPrice		
name	O	
description	O	
priceType	M	
unitOfMeasure	O	
recurringChargePeriod	M if price type is recurring – must not be filled else	
@type	O	
@schemaLocation	O	
priceAlteration	O	Array of price(s)
name	O	
description	O	
priceType	M	
unitOfMeasure	O	
recurringChargePeriod	M if price type is recurring – must not be filled else	
applicationDuration	O	
priority	O	
@type	O	
@schemaLocation	O	
price	O	zero or 1 for each orderPrice and priceAlteration
taxIncludedAmount	M if dutyFreeAmount not provided	
dutyFreeAmount	M if taxIncludedAmount not provided	
taxRate	O	
percentage	O	
@type	O	
@schemaLocation	O	
orderItem	M	Array of item – At least one must be provided
id	M	
action	M	
state	M (in response messages) O (otherwise)	Only required in response messages from the server when providing the ProductOrdering entity

			contents (responses to create-POST and read-GET the entity)
	quantity	O	by default '1' if not provided
	@type	O	
	@schemaLocation	O	
	itemTerm	O	Array of term(s)
	name	M if duration not provided	
	description	O	
	duration	M if name not provided	
	@type	O	
	qualificationRef	O	Array or qualification reference.
	id	M	
	href	M	
	qualificationItemId	O	
	@referredType	O	
	appointment	O	Array of appointment(s)
	id	M	
	href	M	
	@referredType	O	
	orderItemRelationship	O	Array of Item relationship
	type	M	
	id	M	
	ProductOfferingRef	O	0 or 1
	id	M	
	href	M	
	name	O	
	@referredType	O	
	Product		0 or 1
	id	M if href provided	
	href	M id provided	
	name	O	
	@type	O	
	@schemaLocation	O	
	ProductSpecificationRef	O	0 or 1
	id	M	

href	M	
version	O	
name	O	
TargetResourceSchema		0 or 1
@Type	M	
@schemaLocation	M	
Place	O	Array of place(s)
id	M if href provided	
href	M if id provided	
name	O	
role	M	
@referredType	M	Because place could be a geographicAddress, geographicLocation or a geographicSite, a type must be provided.
@schemaLocation	O	
ProductCharacteristic		Array of product characteristic(s)
name	M except if @schemaLocation provided	
value	M except if @schemaLocation provided	
@type	M	
@schemaLocation	M	
ProductRelationship		Array of product relationship(s)
type	M	
(product) targeted	M	A referred or valued product must be present

API OPERATIONS CONFORMANCE

For every single resource use the following templates and define what operations are optional and what operations are mandatory.

PRODUCT ORDER MANDATORY AND OPTIONAL OPERATIONS

Uniform API Operation	Mandatory/Optional	Comments
GET	M	GET must be used to retrieve a representation of a resource
POST	M	POST must be used to create a new resource
PUT	O	PUT must be used to completely update a resource identified by its resource URI
PATCH (JSON-MERGE)	O	PATCH must be used to partially update a resource
DELETE	O	DELETE must be used to remove a resource

API GET FILTERING OPERATION CONFORMANCE

Definitions

Filtered Search: A filtered search can be applied using query parameters in order to obtain only the resource entities 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>)

Filtered Data (Attribute selection): In order to apply a filter and limit the number of attributes included in the response, the GET request can include the “?fields=” query parameter. Several elements can be applied to the filter. In that case, a logical AND is applied to combine the values (e.g.:?fields=category,state) will provide in the response only the values assigned to attributes category and state. Attribute selection capabilities are the same for collections retrieval and individual resource queries

Filtering in productOrder resource

Attribute name	Filtered search First Level	Filtered search N Level	Attribute Selection First Level	Attribute Selection N Level
id	M	M	M	M
href	NA	NA	O	O
externalId	M	O	M	O
priority	O	O	O	O
description	O	NA	M	NA
category	O	NA	O	NA
state	M	NA	M	NA
orderDate	M	NA	O	O
completionDate	M	NA	O	O
requestedStartDate	O	NA	M	NA
requestedCompletionDate	O	NA	O	NA
expectedCompletionDate	O	NA	M	NA
notificationContact	O	NA	O	NA
channel				
id	O	NA	O	O
href	NA	NA	NA	NA
name	O	NA	O	NA
role	O	NA	O	NA

RelatedParty				
id	O	NA	O	O
href	NA	NA	NA	NA
role	O	NA	O	O
name	O	NA	O	NA
validFor	NA	NA	NA	NA
productOrderingItem				
id	NA	NA	M	O
state	O	NA	M	O
action	O	NA	O	O
quantity	O	NA	O	O
productOfferingRef				
id	O	NA	O	NA
href	NA	NA	NA	NA
name				
productSpecificationRef				
id	O	NA	O	NA
href	NA	NA	NA	NA
version	O	NA	O	NA
name	O	NA	O	NA
product				
id	O	NA	O	NA
href	NA	NA	NA	NA
name	O	NA	O	NA
place				
id	O	NA	O	NA
href	NA	NA	NA	NA
role	O	NA	O	NA
name	O	NA	O	NA
billingAccount				
id	O	NA	O	O
href	NA	NA	O	NA
name	O	NA	O	NA
payment				
id	O	NA	O	O
href	NA	NA	O	NA
name	O	NA	O	NA
qualification				

id	O	NA	O	O
href	NA	NA	O	NA
qualificationItemId	NA	NA	O	O
appointment				
id	O	NA	O	O
href	NA	NA	O	NA
note				
date	NA	NA	NA	NA
author	NA	NA	NA	NA
text	NA	NA	NA	NA
orderPrice				
name	NA	NA	O	NA
description	NA	NA	O	NA
priceType	NA	NA	O	NA
unitOfMeasure	NA	NA	O	NA
recurringChargePeriod	NA	NA	O	NA
priceAlteration				
name	NA	NA	O	NA
description	NA	NA	O	NA
priceType	NA	NA	O	NA
unitOfMeasure	NA	NA	O	NA
recurringChargePeriod	NA	NA	O	NA
applicationDuration	NA	NA	O	NA
priority	NA	NA	O	NA
price				
taxIncludedAmount	NA	NA	O	NA
dutyFreeAmount	NA	NA	O	NA
taxRate	NA	NA	O	NA
percentage	NA	NA	O	NA

GET /productOrderingManagement /productOrder/

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

Providing filtering criteria is mandatory to avoid too many answers retrieved. See example below:

- externalId
- description
- orderDate

- state + orderDate interval (orderDate > 11/4/2018 & orderDate > 11/9/2017)
- relatedParty id and role + orderDate interval
- priority + orderDate interval

Filtered Data: A filtered response can be requested for the following attributes using the “?fields=” query parameter

- Any of the attributes in the first level of productOrdering resource definition

GET /productOrderingManagement /productOrder/{ID}

Filtered Search: A filtered response can be requested for the following attributes using the “?fields=” query parameter

- Any of the attributes in the first level of productOrder resource definition

API POST OPERATION CONFORMANCE

POST /productOrderingManagement /productOrder/

This Uniform Contract operation is used to create a ProductOrder resource in the server.

The response to this operation must include a Location header set to /productOrderingManagement /productOrder/{ID} where {ID} indicates the identifier assigned by the server to the new ProductOrder resource created

POST	M	
Response Status Code 201	M	
Other Status Codes	NA	

The following table indicates attributes that are required to be sent when creating a new productOrder as well as attributes with special considerations. All other attributes defining the resource are not required to be sent as part of the BODY of the POST request message:

Attribute name	Mandatory	Default	Rule
id	NA		Must not be in POST request
href	NA		Must not be in POST request
externalId	O		
priority	O	"4"	Could be implementation-based defined
description	O		
category	O		
state	NA		Must not be in POST request
orderDate	NA		Must not be in POST request
completionDate	NA		Must not be in POST request
requestedStartDate	O	today	
requestedCompletionDate	O		
expectedCompletionDate	NA		Must not be in POST request
NotificationContact	O		

Attribute name	Mandatory	Default	Rule
note	O		If note present, author and text are mandatory. Date is optional and values by default with today date.
channel	O		If channel present, id is mandatory
billingAccount	O		href or/and id must be provided
payment	O		href or/and id must be provided
orderTotalPrice itemTotalPrice itemPrice	O		priceType must be filled. if priceType=recurring then recurringChargePeriod is mandatory
priceAlteration	O		priceType must be filled. if priceType=recurring then recurringChargePeriod is mandatory by default: applicationDuration: unlimited priority: 1 (if several priceAlteration for one orderPrice they must have distinct priority value)
price	O		taxIncludedAmount or dutyFreeAmount must be provided. If both are filled and taxRate provided, value must be consistent.
orderItem	M		At least one item must be provided.
orderItem.id	M		
orderItem.action	M		
orderItem.state	NA		Must not be in POST request
quantity	O	1	
orderItemRelationship	O		if provided, type & id are mandatory
appointment	O		href or/and id must be provided
productOffering	O		href or/and id must be provided
relatedParty	M		At least one relatedParty must be provided.

Attribute name	Mandatory	Default	Rule
			href or/and id must be provided role is mandatory
itemTerm	O		name and/or duration must be provided
place	O		href or/and id must be provided Role is mandatory
productRelationship	O		type is mandatory
productSpecification	O		href or/and id must be provided
describing	O		@type & @schemaLocation must be provided
characteristic	O		name and value must be provided OR @type and @schemaLocation must be provided

The response from the server must include a BODY with the contents of the new resource created, filled with at least the same information elements that were included in the request and are supported by the server. Notice that the value stored by the server may be different than the one set in the request (e.g.: ProductOfferingName)

If the POST request includes optional parameters (as per the model resource definition) that are not supported by the server, then the server must reject the request (replying with a 4xx error response) indicating the parameter not supported.

The BODY of the response from the server must include attribute “href” set to the same value as the one in the Location header.

The server must include in the BODY of the response, even if they are not included in the request, the following attributes that are mandatory in the definition of a ProductOrder as per the resource model defined

- id
- href
- state
- orderDate
- orderItem.state

We must note that some attributes must not be send in the POST request and could be not valued in the POST answer:

- expectedCompletionDate
- completionDate

The BODY of the response from the server must include attribute “href” (or “reference”) under each one of the entities within the productOrder model that can be addressed individually and were included in the response. This applies to any of the following entities

- relatedParty
- billingAccount
- payment
- productOffering
- productSpecification
- channel
- place
- product

API PATCH OPERATION CONFORMANCE

This section defines which attributes are patchable.

Since PATCH operation is optional and not included in the basic CONNECT certification this is not applicable in this conformance document.

API DELETE OPERATION CONFORMANCE

This section defines what operations can be used to delete a ProductOrder resource.

Since DELETE operation is optional and not included in the basic CONNECT certification this is not applicable in this conformance document

API CONFORMANCE TEST SCENARIOS

This section describes the test scenarios required for the basic CONNECT certification of ProductOrdering 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}/productOrderingManagement/v1, being {serverRoot} defines the certification endpoint

ProductOrder resource TEST CASES

Nominal Scenarios

TC_ProductOrder_N1 – Create new ProductOrder with minimum required information

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

```
{
  "externalId": "Telco01",
  "priority": "1",
  "description": "Order illustration UC1",
  "category": "Residential",
  "notificationContact": "jean.pontus@tmforum.com",
  "@baseType": "productOrder",
  "@type": "productOrder",
  "Channel": {
    "id": "1",
    "name": "store",
    "role": "submitChannel",
    "@type": "store"
  },
  "note": {
    "text": "Order to illustrate UC1",
    "date": "2017-11-03T08:46:47.945Z",
    "author": "Jean-Luc Tymen"
  },
  "relatedParty": [
    {
      "id": "11",
      "href": "tmfAPI/customer/11.org",
      "name": "Joe Doe",
      "role": "customer",
      "@REFERREDType": "individualParty"
    }
  ]
}
```

```

    "id": "12",
    "href": "tmfAPI/customer/12.org",
    "name": "Arthur Pence",
    "role": "Seller",
    "@referredType": "individualParty"
  }
],
"billingAccount": {
  "id": "BA1513",
  "href": "tmfAPI/billingAccount/BA1513.org",
  "name": "BA01",
  "@referredType": "billingAccount"
},
"orderItem": [
  {
    "id": "100",
    "action": "add",
    "quantity": 1,
    "productOffering": {
      "id": "14277",
      "name": "TMF25"
    }
  },
  "orderItem": [
    {
      "id": "110",
      "action": "add",
      "quantity": 1,
      "itemPrice": [
        {
          "name": "AccessFee",
          "description": "Access Fee",
          "priceType": "oneTime",
          "price": {
            "taxIncludedAmount": {
              "value": 0.99,
              "unit": "Euros"
            }
          }
        }
      ]
    }
  ],
  "productOffering": {
    "id": "14305",
    "name": "TMF Mobile Telephony"
  },
  "product": {
    "characteristic": [
      {
        "name": "TEL_MSISDN",
        "value": "27457958"
      }
    ]
  },
  "relatedParty": [
    {

```



```

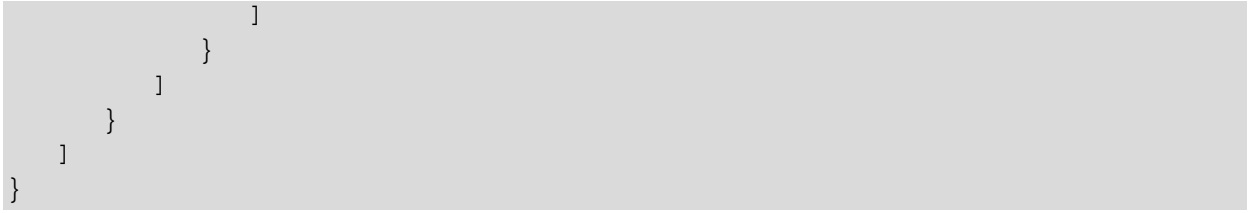
        "id": "11",
        "href": "tmfAPI/customer/11.org",
        "name": "Joe Doe",
        "role": "user",
        "@referredType": "individualParty"
    }
],
"productSpecification": {
    "id": "14307",
    "href": "tmfAPI/productSpecification/14307.org",
    "version": "1",
    "name": "Mobile Telephony"
},
"payment": [
    {
        "id": "2365",
        "name": "shop payment cash #2365",
        "@referredType": "cash"
    }
]
},
{
    "id": "120",
    "action": "add",
    "quantity": 1,
    "itemPrice": [
        {
            "name": "monthly price",
            "description": "TMF Tariff Plan monthly fee",
            "priceType": "recurring",
            "recurringChargePeriod": "monthly",
            "price": {
                "taxIncludedAmount": {
                    "value": 20,
                    "unit": "Euros"
                },
                "taxRate": 18.6
            },
            "priceAlteration": [
                {
                    "name": "20Discount3Months",
                    "description": "discount 20% for 3 months",
                    "priceType": "recurring",
                    "recurringChargePeriod": "monthly",
                    "applicationDuration": "3",
                    "priority": 1,
                    "price": {
                        "percentage": 20
                    }
                }
            ]
        }
    ]
}

```

```

],
"productOffering":{
  "id":"14344",
  "name":"TMF TariffPlan"
},
"product":{
  "productSpecification":{
    "id":"14395",
    "name":"TMF TariffPlan"
  }
},
"orderItemRelationship":[
  {
    "id":"110",
    "type":"reliesOn"
  }
],
"itemTerm":[
  {
    "name":"12MonthsCommitment",
    "description":"12 Months commitment",
    "duration":{
      "value":12,
      "unit":"string"
    }
  }
]
},
{
  "id":"130",
  "action":"add",
  "quantity":1,
  "productOffering":{
    "id":"14354",
    "name":"CoverageOptions"
  },
  "product":{
    "characteristic":[
      {
        "name":"CoverageOption",
        "value":"National"
      }
    ],
    "productSpecification":{
      "id":"14353",
      "name":"coverage"
    }
  },
  "orderItemRelationship":[
    {
      "id":"110",
      "type":"reliesOn"
    }
  ]
}

```



- Wait for a response from the server with the following characteristics
 - Response Code 201-Created
 - Include a location header in the body set to `/{apiRoot}/productOrder/{IDPO1}` where `{IDPO1}` indicates the identifier assigned by the server to the new `productOrder` resource
 - The response message includes all mandatory parameters (including `id`, `state` and `orderDate` that were not sent in the original request)
 - The body of the response matches the values set in the original request
- Send a GET message to `/{apiRoot}/productOrder/{IDPO1}`
- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one `ProductOrder` 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 set in the original request

TC_ProductOrder_N2 – Create new ProductOrder with minimum set of parameters supported by server

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

```
{
  "externalId": "Telco027",
  "priority": "2",
  "description": "Order illustration for comformance profile",
  "category": "Residential",
  "notificationContact": "jean.pontus@tmforum.com",
  "@baseType": "productOrder",
  "@type": "productOrder",
  "Channel": {
    "id": "2",
    "name": "web",
    "role": "submitChannel",
    "@type": "web"
  },
  "note": {
    "text": "Order to illustrate CP order",
    "date": "2017-11-03T08:46:47.945Z",
    "author": "Jean-Lyuc Tymen"
  },
  "relatedParty": [
    {
      "id": "45",
      "href": "tmfAPI/customer/45.org",
      "name": "Jim Hudson",
      "role": "customer",
      "@referredType": "individualParty"
    },
    {
      "id": "12",
      "href": "tmfAPI/customer/12.org",
      "name": "Arthur Pence",
      "role": "Seller",
      "@referredType": "individualParty"
    }
  ],
  "billingAccount": {
    "id": "BA1513",
    "href": "tmfAPI/billingAccount/BA1513.org",
    "name": "BA01",
    "@referredType": "billingAccount"
  },
  "orderItem": [
    {
      "id": "100",
      "action": "add",

```

```
"quantity": 1,
"productOffering": {
  "id": "14277",
  "name": "TMF25"
},
"product": {
  "characteristic": [
    {
      "name": "TEL_MSISDN",
      "value": "27457958"
    }
  ],
  "relatedParty": [
    {
      "id": "11",
      "href": "tmfAPI/customer/11.org",
      "name": "Joe Doe",
      "role": "user",
      "@REFERREDType": "individualParty"
    }
  ],
  "productSpecification": {
    "id": "14307",
    "href": "tmfAPI/productSpecification/14307.org",
    "version": "1",
    "name": "Mobile Telephony"
  }
},
"payment": [
  {
    "id": "2365",
    "name": "shop payment cash #2365",
    "@REFERREDType": "cash"
  }
],
"itemPrice": [
  {
    "name": "monthly price",
    "description": "TMF Tariff Plan monthly fee",
    "priceType": "recurring",
    "recurringChargePeriod": "monthly",
    "price": {
      "taxIncludedAmount": {
        "value": 20,
        "unit": "Euros"
      },
      "taxRate": 18.6
    }
  }
],
"itemTerm": [
  {
    "name": "12MonthsCommitment",
```

```
    "description": "12 Months commitment",
    "duration": {
      "value": 12,
      "unit": "string"
    }
  ]
}
```

- Wait for a response from the server with the following characteristics
 - Response Code 201-Created
 - Include a location header in the body set to `/{apiRoot}/productOrder/{IDPO2}` where `{IDPO2}` indicates the identifier assigned by the server to the new ProductOrder resource
 - The response message includes all mandatory parameters (including `orderDate` and `state` that were not sent in the original request)
 - The body of the response matches the values set in the original request
- Send a GET message to `/{apiRoot}/productOrder/{IDPO2}`
- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one ProductOrder resource 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 set in the original request

TC_ProductOrder_N3 – Search for ProductOrder with specific characteristics

- Send a GET message to `/{apiRoot}/productOrder?category=Residential&orderDate='valued by today date'`

- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes at least two ProductOrder resources referring to {IDPO1} and {IDPO2}
 - 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}/productOrder?priority=1&orderDate='valued by today date'`
- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one ProductOrder resource referring to {IDPO1} and there is no reference to ProductOrder resource {IDPO2}
 - 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}/productOrder?externalId=Telco027`
- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one ProductOrder resource referring to {IDPO2} and there is no reference to ProductOrder resource {IDPO1}
 - 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

TC_ProductOrder_N4 – Filtered retrieval of ProductOrder

- Send a GET message to `/{apiRoot}/productOrder/{IDPO2}?fields=id,href,externalId,priority,state`

- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one ProductOrder resource referring to {IDPO2} and including only attributes id,href,externalId, priority and state.
- Send a GET message to `/{apiRoot}/productOrder/{IDPO1}?fields=id, state, orderItem.id,orderItem.state,orderItem.action`
- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one ProductOrder resource referring to {IDPO1} and including only attributes id, state, and an array of order item with attributes: id, state, and action matching the values in the original request.

Notice that this test case is using parameters "state", "id", "orderItem.id", "orderItem.state" and "orderItem.action" to filter the data included in the response but any other parameter could be used

TC_ProductOrder_N5 – Filtered Search and Filtered data response

- Send a GET message to `/{apiRoot}/productOrder?externalId=Telco01&fields=id,state,category, description`
- Wait for a response from the server with the following characteristics
 - Response Code 200-OK
 - The body of the response includes one ProductOrder resource referring to {IDPO1} and there is no reference to ProductOrder resource {IDPO2}
 - The body of the response for the resource includes only attributes id, state and category matching the values in the corresponding original request

Notice that this test case is using the parameter "externalId" to filter the data included in the response but any other parameter could be used

Error Scenarios

TC_ProductOrder_E1 – Unknown Trouble ProductOrder identifier

- Send a GET message to `{apiRoot}/productOrder/{IDPO3}`, where `{IDPO3}` does not match any of the identifiers previously created in the server
- Wait for a response from the server with the following characteristics
 - Response Code 404-Not Found

TC_ProductOrder_E2 – Invalid Request – Missing mandatory parameter

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

```
{
  "externalId": "Telco029",
  "priority": "1",
  "description": "Order illustration for conformance profile E2 missing
productOffering & product",
  "category": "Residential",
  "notificationContact": "jean.pontus@tmforum.com",
  "@baseType": "productOrder",
  "@type": "productOrder",
  "Channel": {
    "id": "2",
    "name": "web",
    "role": "submitChannel",
    "@type": "web"
  },
  "note": {
    "text": "Order to illustrate CP order E2",
    "date": "2017-11-03T08:46:47.945Z",
    "author": "Jean-Lyuc Tymen"
  },
  "relatedParty": [
    {
      "id": "45",
      "href": "tmfAPI/customer/45.org",
      "name": "Jim Hudson",
      "role": "customer",
      "@referredType": "individualParty"
    },
    {
      "id": "12",
      "href": "tmfAPI/customer/12.org",
      "name": "Arthur Pence",
      "role": "Seller",
      "@referredType": "individualParty"
    }
  ]
}
```

```

    }
  ],
  "billingAccount": {
    "id": "BA1513",
    "href": "tmfAPI/billingAccount/BA1513.org",
    "name": "BA01",
    "@referredType": "billingAccount"
  },
  "orderItem": [
    {
      "id": "100",
      "action": "add",
      "quantity": 1,
      "payment": [
        {
          "id": "2365",
          "name": "shop payment cash #2365",
          "@referredType": "cash"
        }
      ],
      "itemPrice": [
        {
          "name": "monthly price",
          "description": "TMF Tariff Plan monthly fee",
          "priceType": "recurring",
          "recurringChargePeriod": "monthly",
          "price": {
            "taxIncludedAmount": {
              "value": 20,
              "unit": "Euros"
            },
            "taxRate": 18.6
          }
        }
      ],
      "itemTerm": [
        {
          "name": "12MonthsCommitment",
          "description": "12 Months commitment",
          "duration": {
            "value": 12,
            "unit": "string"
          }
        }
      ]
    }
  ]
}

```

Notice that this request is missing at least a productOffering or a product in the order item described...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_ProductOrder_E3 – Invalid Request – Missing parameter mandatory in context

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

```
{
  "externalId": "Telco027",
  "priority": "2",
  "description": "Order illustration for comformance profile E3",
  "notificationContact": "jean.pontus@tmforum.com",
  "@baseType": "productOrder",
  "@type": "productOrder",
  "Channel": {
    "role": "submitChannel"
  },
  "note": {
    "text": "Order to illustrate CP order",
    "date": "2017-11-03T08:46:47.945Z",
    "author": "Jean-Lyuc Tymen"
  },
  "relatedParty": [
    {
      "id": "45",
      "href": "tmfAPI/customer/45.org",
      "name": "Jim Hudson",
      "role": "customer",
      "@referredType": "individualParty"
    },
    {
      "id": "12",
      "href": "tmfAPI/customer/12.org",
      "name": "Arthur Pence",
      "role": "Seller",
      "@referredType": "individualParty"
    }
  ],
  "billingAccount": {
    "@referredType": "billingAccount"
  },
  "orderItem": [
    {
      "id": "100",
      "action": "add",
      "quantity": 1,
      "productOffering": {
        "id": "14277",
        "name": "TMF25"
      }
    }
  ],
}
```

```
"product": {
  "characteristic": [
    {
      "name": "TEL_MSISDN",
      "value": "27457958"
    }
  ],
  "relatedParty": [
    {
      "id": "11",
      "href": "tmfAPI/customer/11.org",
      "name": "Joe Doe",
      "role": "user",
      "@type": "individualParty"
    }
  ],
  "productSpecification": {
    "id": "14307",
    "href": "tmfAPI/productSpecification/14307.org",
    "version": "1",
    "name": "Mobile Telephony"
  }
},
"payment": [
  {
    "id": "2365",
    "name": "shop payment cash #2365",
    "@REFERREDTYPE": "cash"
  }
],
"itemPrice": [
  {
    "name": "monthly price",
    "description": "TMF Tariff Plan monthly fee",
    "priceType": "recurring",
    "recurringChargePeriod": "monthly",
    "price": {
      "taxIncludedAmount": {
        "value": 20,
        "unit": "Euros"
      },
      "taxRate": 18.6
    }
  }
],
"itemTerm": [
  {
    "name": "12MonthsCommitment",
    "description": "12 Months commitment",
    "duration": {
      "value": 12,
      "unit": "string"
    }
  }
]
```

```
}  
  ]  
    }  
  ]  
}
```

Note that this request is missing mandatory parameter both for channel and BillingAccount.

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

ACKNOWLEDGEMENTS

VERSION HISTORY

Version Number	Date	Modified by:	Description
1.0.0	06-Dec-2017	Ludovic Robert	First Release of the Document.
1.0.1	17-Jan-2018	Adrienne Walcott	Formatting/style edits prior to publishing

RELEASE HISTORY

Release Number	Date	Release led by:	Description
Release 17.5.0	06-Dec-2017	Ludovic Robert	First Release of the Document.