

# TM Forum Specification

## Open Gateway Operate API - Onboarding and Ordering

TMF931

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# Introduction

The following document is the user guide of the REST API for Open Gateway Onboarding and Ordering Operate API. The GSMA Open Gateway initiative aims to establish standardized Service APIs but also homogeneous mechanisms for the integration of ChannelPartners, enabling seamless integration and interoperability across various platforms and telecommunications service providers.

This Operate API component suite covers the operations required between the Channel Partners and the Operators as described in the GSMA Playbook. This Operate API component suite implements a subset of the proposed scenarios:

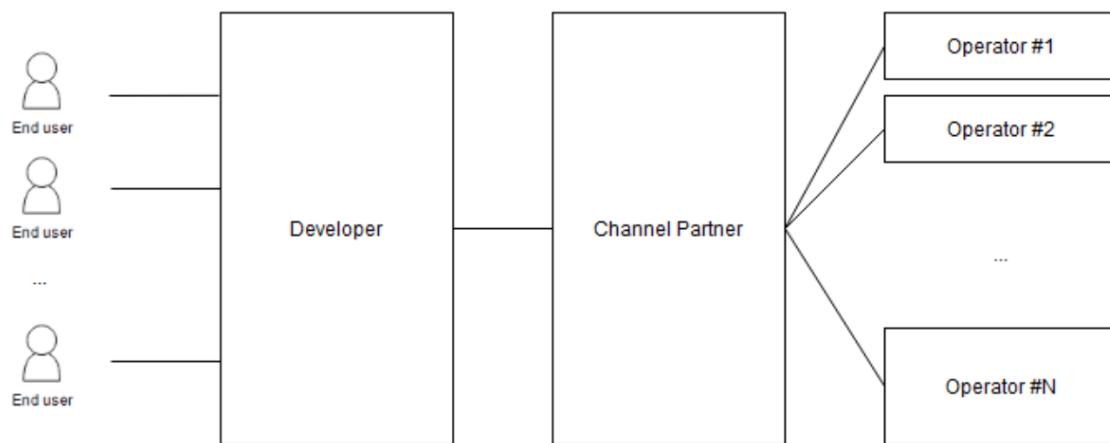
- ApplicationOwner Management (acceptance, on boarding, lifecycle management)
- Application Management (acceptance, on boarding, lifecycle management)
- Service API Management (ordering, retrieving)

In the user guide and OAS :

- Aggregator is modelled as a ChannelPartner
- Developer or ASP is modelled as an ApplicationOwner

## Scenarios

The actors involved in this Open Gateway API can be seen in the figure:



Open Gateway Channel Partner model is composed of different players  
(WA.101 Open Gateway Channel Partner OnboardingProcess, July 2023)

- Operators are CSP that provide value to Channel Partner through the use of Operate APIs.
- The Channel Partner(CP) are providers/aggregators who offers its services to one or more ApplicationOwners.
- ApplicationOwners create applications that are acquired and utilized by end users
- End users are the customers at the end of the value chain and are the ultimate

beneficiaries of the value offered by the Operate APIs.

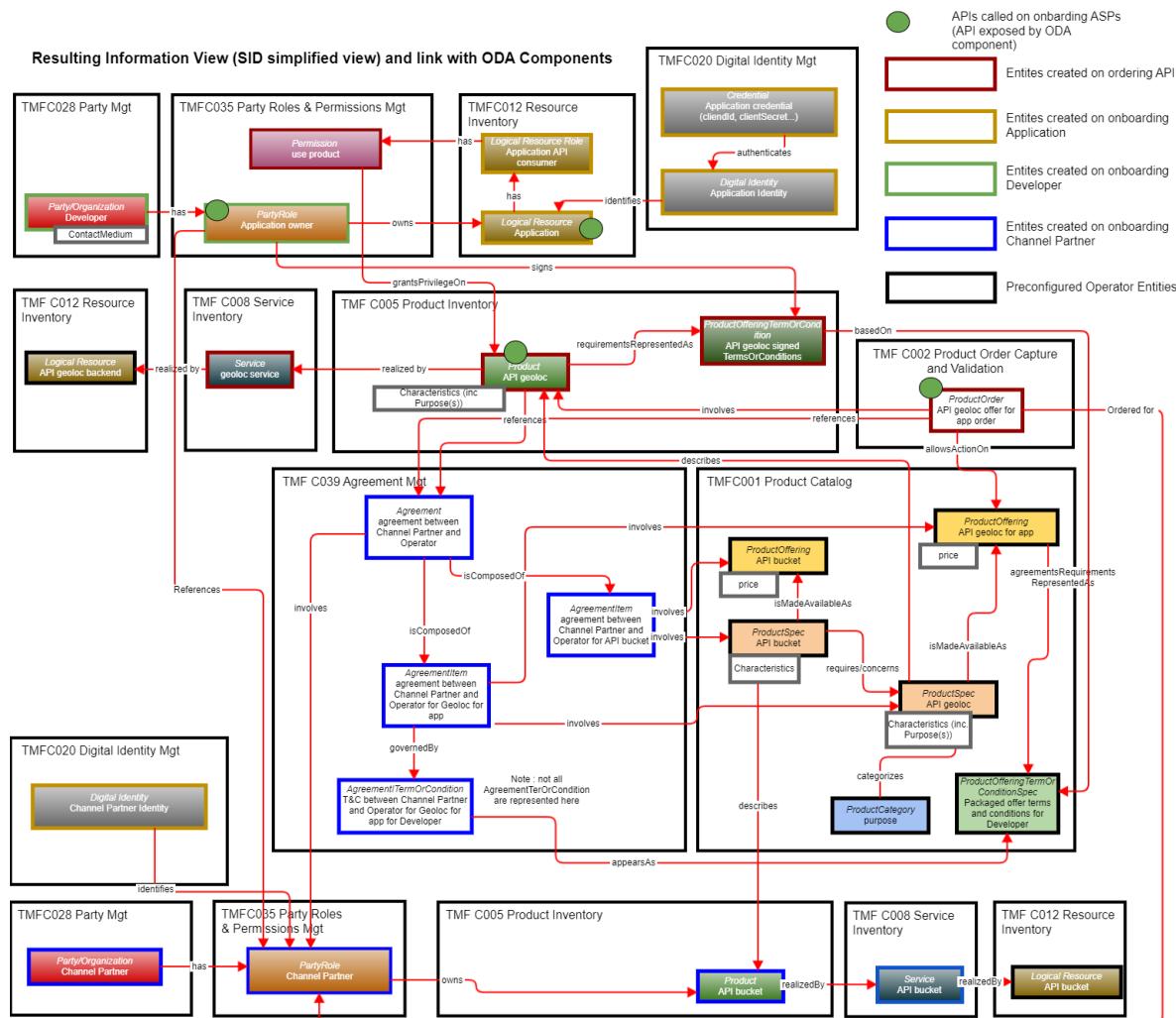
This Operate API focuses on the operations between Channel Partners and Operators. The operations allow to subscribe to Service APIs, manage subscriptions; create and manage ApplicationOwners; and create and manage Applications for ApplicationOwners.

The GSMA Open Gateway initiative takes into account two different business models: \* In the Wholesale Reseller model, the service is fully managed by the Channel Partner. \* In the Aggregated Marketplace model, the Channel Partner leverages its Marketplace to individually expose the APIs. To ensure a coherent user experience, a UX layer is applied, creating a unified interface for the ApplicationOwner.

This Operate API considers the two models defined in GSMA Open Gateway and both can be implemented by using it.

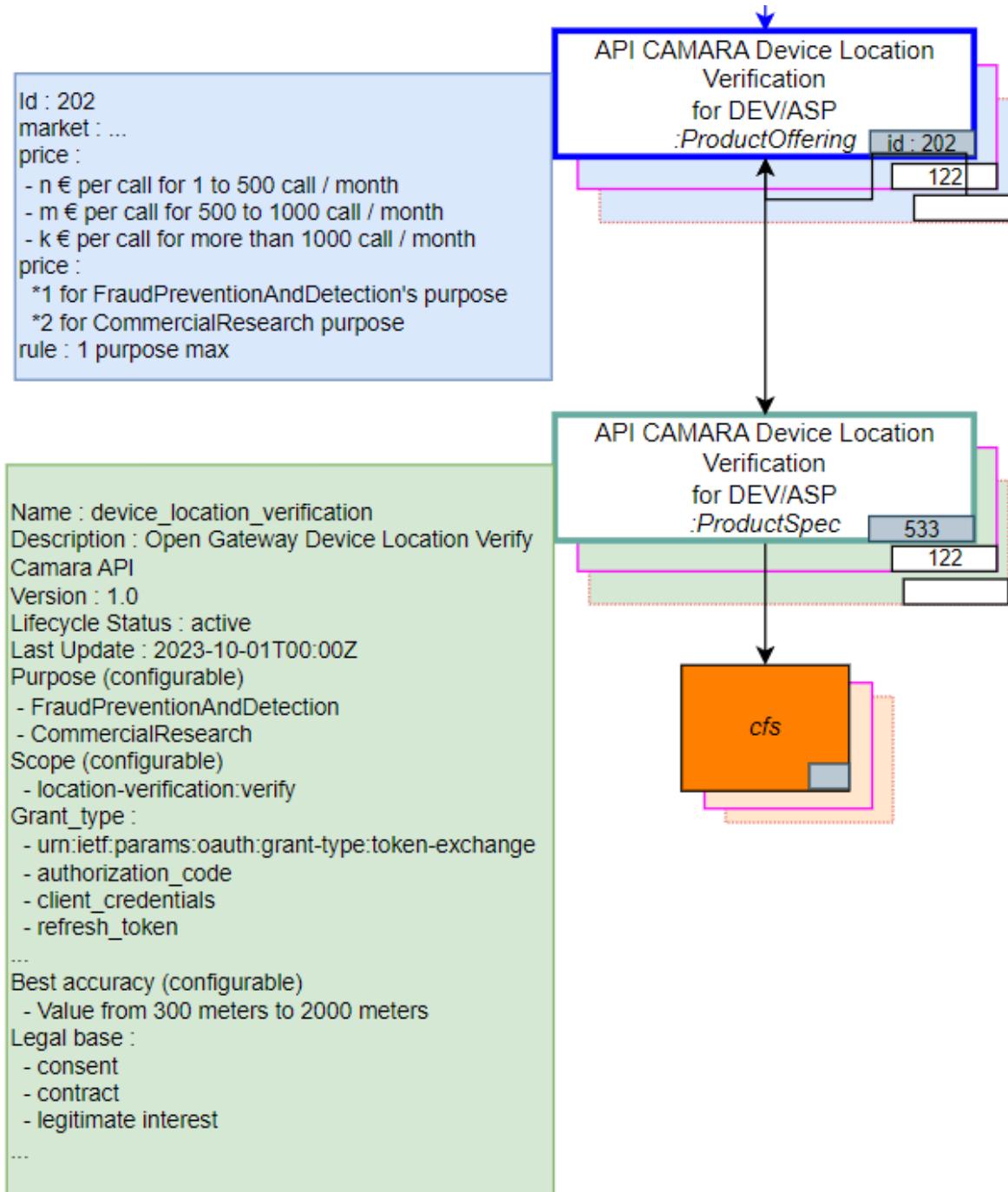
## Entities modelling

Here is the main Entity diagram representing the link between different entities as is could be implemented in Operator Information System. This permits to have a better understanding of this API.



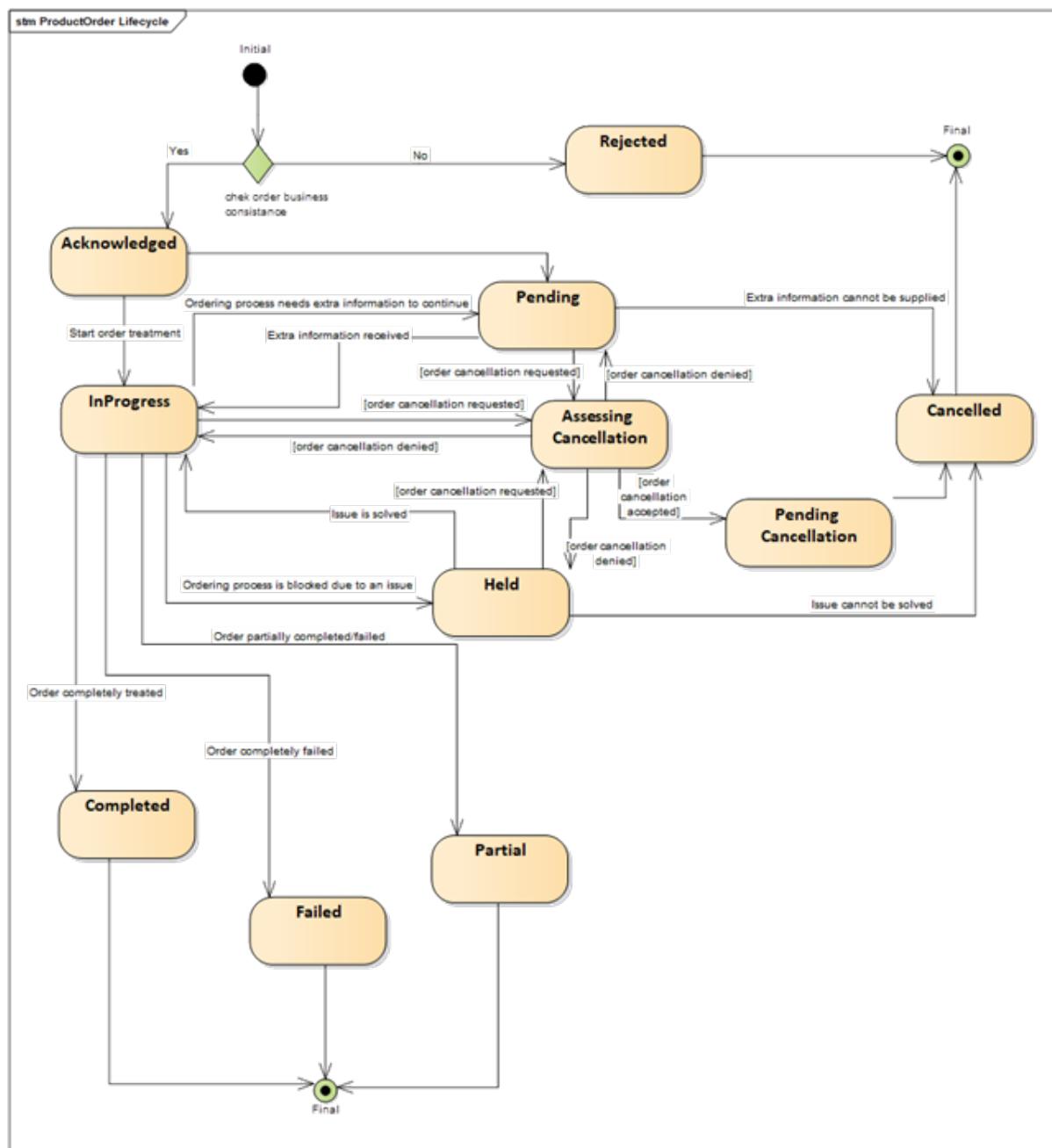
## Catalog modelling

Examples values in this API are reflecting this Catalog model (illustrative only).



## State lifecycle

### Product Order



State	Definition
acknowledged	The Acknowledged state is where an order/item has been received and has passed message and basic business validations.
rejected	The Rejected state is where: An order failed the Order Feasibility check / Invalid information is provided through the order request / The order request fails to meet business rules for ordering Same rules applied for order item.

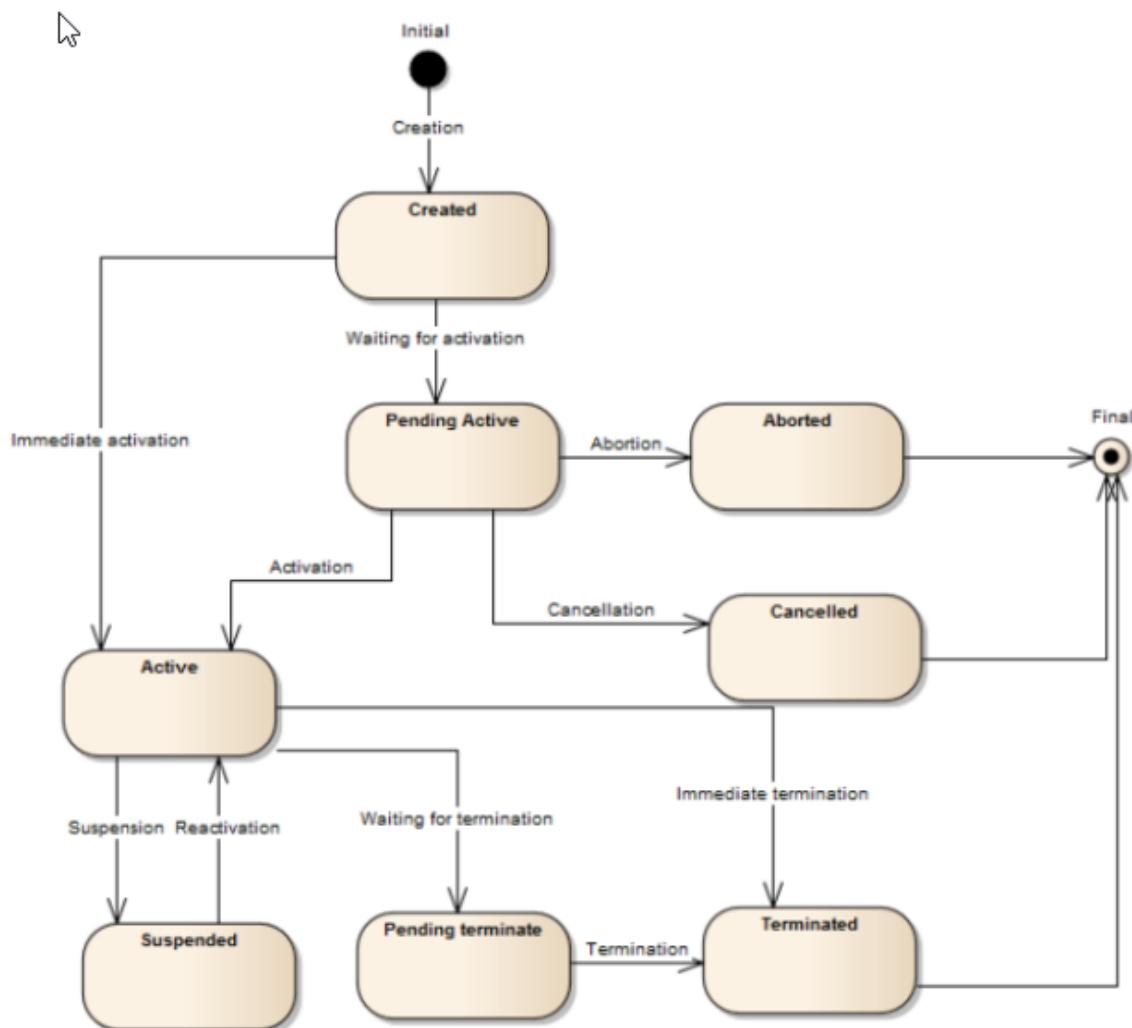
State	Definition
pending	The Pending state is used when an order/item is currently in a waiting stage for an action/activity to be completed before the order/item can progress further, pending order amend or cancel assessment. In situations where Access Seeker action is required, an “information required” notification will be issued on transition into this state. A pending stage can lead into auto cancellation of an order/item, if no action is taken within the defined timeframes to be described under the Agreement.
inProgress	The In Progress state is where an order Item has passed the Order Feasibility check successfully and product delivery has started. For the order at least one order item is inProgress
held	The Held state is used when an order/item cannot be progressed due to an issue. SP has temporarily delayed completing an order/item to resolve an infrastructure shortfall to facilitate supply of order. Upon resolution of the issue, the order/item will continue to progress.
assessingCancellation	Following a cancel request, the SP is assessing if cancel can be done for the order/item (or if the PO has reached PONR). If cancellation request is not accepted after assessment the order will return in Held or Pending or InProgress state.
pendingCancellation	Once a cancel order has been accepted by SP, it could in some UC take time to effectively cancel the order/item. During this time when accepted cancellation is effectively processed we use Pending Cancellation.
cancelled	The Cancelled state is where an In-Flight Order/item has been successfully cancelled.
completed	The Completed state is where an item has complete provision and the service is now active. For an order all order item are completed
failed	Order item as not a successful delivery completion. The product is not delivered and the order item failed. All Order items have failed which results in the entire Order has Failed.
partial	Some Order items have failed and some have succeeded so the entire Order is in a Partial state. This provides support for partial Failure of an Order. This state is not available at item level

#### State engine comments:

- The choice to accept order is done for the complete order and we cannot have a partial acceptance with some item in rejected and some other in acknowledged.

- Consistence rules must be defined between order state & order item state (example: an order has a failed state if it has all order item state with Completed or Failed status with at least one Completed and one Failed)

## Product



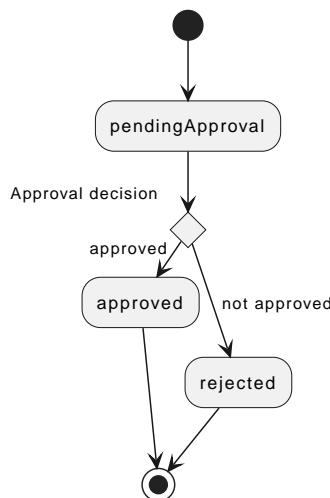
State	Definition
created	The product instance has been created but not yet activated.
pendingActive	The product is in activation phase. Not yet active but it is in progress
aborted	The product activation has been stopped by abnormal condition. There is probably an unexpected delivery issue.
cancelled	The product activation has been cancelled – it could come from customer or provider.
active	The product is live and running

State	Definition
suspended	The product is suspended – it could be an outcome from a customer request or provider decision.
pendingTerminate	The product is still active but a termination process is in progress. It will soon be terminated
terminated	The product is not anymore active.

## Application / ApplicationOwner

The creation of these 2 entities is controlled by the Operator via a manual or automatic process.

Application / ApplicationOwner



State	Definition
pendingApproval	The entity is pending for approval.
approved	The entity is approved.
rejected	The entity hasn't been approved.

## Error Management

In error handling different cases must be considered, even at the functional level that it is possible to modify the error message returned to the API consumer. For this error handling there are two possible alternatives listed below:

- Error handling done with custom policies in the API admin tool.
- Error management performed in a service queried by API.

The essential requirements to consider would be:

- Error handling should be centralized in a single place, regardless of whether they are APIs that are proxies to end services or APIs that invoke an integrator service on the

ESB.

- Customization of the generated error based on the error content returned by the final core service should be contemplated.
- Latency should be minimized in its management.

In the following, we elaborate on the existing client errors. In particular, we identify the different error codes and cluster them into separate tables, depending on their nature: i) syntax exceptions, ii) service exceptions, and iii) server errors.

## Client Standard Code and Reason Errors

### Syntax Exceptions

HTTP Code	Error Code	Error Reason	Description
400	SVC1000	INVALID_ARGUMENT	Invalid request made
409	SVC1001	CONFLICT	The request could not be processed because of conflict in the request.
400	SVC1011	OUT_OF_RANGE	Client specified an invalid range.
403	SVC1013	PERMISSION_DENIED	Client does not have sufficient permissions to perform this action.
409	SVC1002	ABORTED	Concurrency conflict.
409	SVC0005	ALREADY_EXISTS	The resource that a client tried to create already exists.

### Service Exceptions

HTTP Code	Error Code	Error Reason	Description
401	SEC1004	UNAUTHENTICATED	Request not authenticated due to missing, invalid, or expired credentials.
404	SVC1006	NOT_FOUND	The specified resource is not found.
429	SEC1003	TOO_MANY_REQUESTS	Either out of resource quota or reaching rate limiting.
401	SEC1004	AUTHENTICATION_REQUIRED	New authentication is required.

## Server Exceptions

HTTP Code	Error Code	Error Reason	Description
400	SVR1001	FAILED_PRECONDITION	Request cannot be executed in the current system state.
500	SVR1002	DATA_LOSS	Unrecoverable data loss or data corruption.
500	SVR1000	INTERNAL	Unknown server error. Typically a server bug.
502	SVR1004	BAD_GATEWAY	An upstream internal service cannot be reached.
503	SVR1006	UNAVAILABLE	Request timeout exceeded.
504	SVR1008	TIMEOUT	Request timeout exceeded.
501	SVR1003	NOT_IMPLEMENTED	This functionality is not implemented yet
405	SVR1005	METHOD_NOT_ALLOWED	The requested method is not allowed-supported on the target resource.
406	SVR1007	NOT_ACCEPTABLE	The server cannot produce a response matching the content requested by the client through Accept-* headers.
415	SVR1009	UNSUPPORTED_MEDIA_TYPE	The server refuses to accept the request because the payload format is in an unsupported format.

**Note:** When no login has been performed or no authentication has been assigned, a non-descriptive generic error will always be returned in all cases, a UNAUTHENTICATED 401 “Request not authenticated due to missing, invalid, or expired credentials.” is returned, whatever the reason.

Then we can use next regex to restrict the code field: "(SVC)|(SVR)|(SEC[0-9]{4})\$"

Example of returned body:

```
{
  "code": "SVC1000",
  "reason": "INVALID_ARGUMENT",
  "message": "A human readable extra description of what the event represent",
```

```

    "referenceError": "http://example.com",
    "@baseType": "string",
    "@schemaLocation": "http://example.com",
    "@type": "string"
}

```

## Strongly typed schemas for characteristics

### Introduction

A Product Ordering business process requires the execution of a series of previous actions (including API calls) in a defined order so that the process can be carried out correctly. Like the more generic product ordering process managed with TMF Product Ordering, the specialized API Product Ordering is also catalog-oriented, so in order to be carried out it needs to know, through the execution of previous steps, the specifications of the products to be delivered in the order, as well as the actions required by the requester on these products. There is a clear alignment between the way a product is modelled in the product catalog and the way this product can be ordered via an API Product Order call. The modelling of the productSpecification or ProductOffering in the Product Catalog has also an impact on the way the Product is finally reflected in the product inventory.

With the ApiProductOrder resource definition as a specialization of a ProductOrder resource, a new way to ensure such alignment has been introduced: the use of strongly typed referenced schemas for ProductOrderItem and ProductAction. The underlying idea can be summarized as follows: each ProductSpecification managed in an ApiProductOrder requires a set of optional or mandatory attributes to be valued by the API client to ensure its successful delivery. The attributes to be in input depend on the productSpecification definition and the action to be performed over it (add, modify or delete), as each product may require different information. A schema-based model is mandatory : there are for each ProductSpecification definition a reference to N ProductAction schemas, one for each possible action available over that ProductSpecification (via a ProductOffering). Each schema includes the corresponding set of attributes necessary for that ProductOffering/ProductSpecification to be delivered via an ApiProductOrder. Same applies for the ApiProduct : for each ProductSpecification there is a reference to an ApiProduct schema that includes the corresponding set of attributes necessary for that ApiProduct description.

### Examples

Let's take the example of a Device Location Verification API that is offered through an atomic ProductOffering based on a ProductSpecification. Let's assume that this ProductSpecification describes a specific characteristic for this API (coming from the Customer Facing Service definition) : bestAccuracy. This characteristic is not in the common schemas ApiProduct and ProductSpecification, so it's not described in the OAS, because the OAS can't contain all specific schemas from all product specifications that will be exposed in all Operator catalogs. This rule permits to not having to upgrade the Operate API OAS each time a new ProductSpecification is added into an Operator catalog.

We need to use specialized schemas that will allow this specific characteristic to be valued and read by the Operate API client. So it has to be described in a JSON schema that the API client can discover. The way TMF decided to do is :

- `@type` : name of the schema. It can be the standard name of schema from OAS, or can be a specific name because the schema needs to be specialized
- `@schemaLocation` : URL of the json schema describing the schema used in the payload. This attribute is not mandatory when `@type` value is the standard OAS schema; but becomes mandatory when the `@type` is the name of a schema not in the OAS.
- `@baseType` : can be used when the schema is specialized in order to indicate the parent schema

### **ApiProductDeviceLocationVerification.schema.json**

This is the JSON schema that describes the specialized ApiProduct schema for Device Location Verification. The API client needs it when it will receive from API server a payload with an `@type:ApiProductDeviceLocationVerification`.

```
{
    "$schema": "http://json-schema.org/draft-07/schema#",
    "$id": "ApiProductDeviceLocationVerification.schema.json",
    "title": "ApiProductDeviceLocationVerification",
    "definitions": {
        "ApiProductDeviceLocationVerification": {
            "type": "object",
            "properties": {
                "bestAccuracy": {
                    "type": "integer"
                }
            },
            "allOf": [
                {
                    "$ref": "https://.../ApiProduct.schema.json#/definitions/ApiProduct"
                }
            ]
        }
    }
}
```

### **ApiProduct.schema.json**

This schema, while already in OAS, is needed because the specialized ApiProductDeviceLocationVerification schema does an allOf of this one. It could be possible also to put all ApiProduct description in the ApiProductDeviceLocationVerification schema in order to avoid having 2 different schemas.

```
{
    "$schema": "http://json-schema.org/draft-07/schema#",
    "$id": "ApiProduct.schema.json",
    "title": "ApiProduct",
    "definitions": {
        "ApiProduct": {
            "type": "object",
            "properties": {
                "@type": {
                    "type": "string"
                },
                "@baseType": {

```

```
        "type": "string"
    },
    "@schemaLocation": {
        "type": "string"
    },
    "href": {
        "type": "string"
    },
    "id": {
        "type": "string"
    },
    "name": {
        "type": "string"
    },
    "description": {
        "type": "string"
    },
    "productOffering": {
        "$ref": "#/definitions/ProductOfferingRef"
    },
    "productSpecification": {
        "$ref": "#/definitions/ProductSpecificationRef"
    },
    "apiName": {
        "type": "string"
    },
    "apiVersionDetails": {
        "type": "array",
        "items" : {
            "$ref": "#/definitions/ApiVersionDetails"
        }
    },
    "productOrderItem": {
        "type": "array",
        "items" : {
            "$ref": "#/definitions/RelatedOrderItem"
        }
    },
    "approvedProductOfferingTermOrCondition": {
        "$ref": "#/definitions/ProductOfferingTermOrCondition"
    },
    "status": {
        "enum" :["created", "pendingActive", "cancelled", "active",
"pendingTerminate", "terminated", "suspended", "aborted"]
    },
    "creationDate": {
        "type": "string",
        "format": "date-time"
    },
    "startDate": {
        "type": "string",
        "format": "date-time"
    },
    "orderDate": {
        "type": "string",
        "format": "date-time"
    },
    "terminationDate": {
        "type": "string",
        "format": "date-time"
    },
    "channelPartner": {
        "$ref": "#/definitions/PartyRoleRef"
    }
```

```
        },
        "agreementItem": {
            "$ref": "#/definitions/AgreementItemRef"
        }
    },
    "required": [
        "@type"
    ]
},
"ProductOfferingRef": {
    "type": "object",
    "properties": {
        "@type": {
            "type": "string"
        },
        "@baseType": {
            "type": "string"
        },
        "@schemaLocation": {
            "type": "string"
        },
        "href": {
            "type": "string"
        },
        "id": {
            "type": "string"
        },
        "name": {
            "type": "string"
        },
        "@referredType": {
            "type": "string"
        },
        "version": {
            "type": "string"
        }
    }
},
"ProductSpecificationRef": {
    "type": "object",
    "properties": {
        "@type": {
            "type": "string"
        },
        "@baseType": {
            "type": "string"
        },
        "@schemaLocation": {
            "type": "string"
        },
        "href": {
            "type": "string"
        },
        "id": {
            "type": "string"
        },
        "name": {
            "type": "string"
        },
        "@referredType": {
            "type": "string"
        },
        "version": {
            "type": "string"
        }
    }
}
```

```
        "type": "string"
    },
    "targetProductSchema": {
        "$ref": "#/definitions/TargetProductSchema"
    }
}
},
"ApiVersionDetails": {
    "type": "object",
    "properties": {
        "@type": {
            "type": "string"
        },
        "@baseType": {
            "type": "string"
        },
        "@schemaLocation": {
            "type": "string"
        },
        "apiMajorVersion": {
            "type": "integer"
        },
        "basePath": {
            "type": "string"
        },
        "countryCode": {
            "$ref": "#/definitions/ISO31661Alpha2StandardIdentifier"
        },
        "apiGrantInformation": {
            "$ref": "#/definitions/ApiGrantInformation"
        }
    }
},
"ProductOfferingTermOrCondition": {
    "type": "object",
    "properties": {
        To Be completed...
    }
},
"PartyRoleRef": {
    "type": "object",
    "properties": {
        To Be completed...
    }
},
"AgreementItemRef": {
    "type": "object",
    "properties": {
        To Be completed...
    }
}
}
```

### ApiProductActionAddDeviceLocationOptimisation.schema.json

The API client needs it when it have to fill the body of the POST apiProductOrder for an order that will add a product (subscription). It has to put @type:ApiProductActionAddDeviceLocationVerification and use this json schema structure for the body. The future Operate API Product catalog will permit the API Client to know that

for this specific ProductSpecification the @type value must be ApiProductActionAddDeviceLocationVerification the URL of the ApiProductActionAddDeviceLocationOptimisation.schema.json.

```
{
  "$schema": "http://json-schema.org/draft-07/schema#",
  "$id": "ApiProductActionAddDeviceLocationOptimisation.schema.json",
  "title": "ApiProductActionAddDeviceLocationOptimisation",
  "definitions": {
    "ApiProductActionAddDeviceDeviceLocationOptimisation": {
      "$id": "#ApiProductActionAddDeviceDeviceLocationOptimisation",
      "description": "Schema for product action on a product order item for Device Location Optimisation API.",
      "type": "object",
      "properties": {
        "bestAccuracy": {
          "type": "integer"
        }
      },
      "allOf": [
        {
          "$ref":
            "https://.../ApiProductActionAdd.schema.json#/definitions/ApiProductActionAdd"
        }
      ]
    }
  }
}
```

## ApiProductActionAdd.schema.json

This schema, while already in OAS, is needed because the specialized ApiProductActionAddDeviceLocationVerification schema does an allOf of this one. It could be possible also to put all ApiProductActionAdd description in the ApiProductActionAddDeviceLocationVerification schema in order to avoid having 2 different schemas.

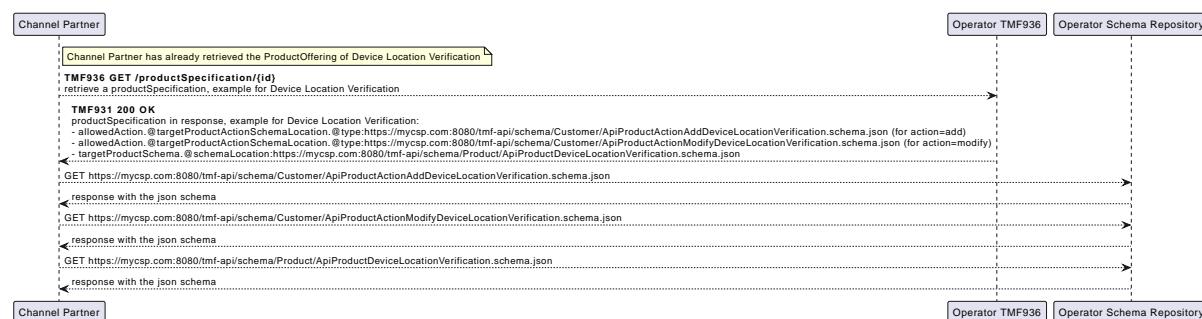
```
{
  "$schema": "http://json-schema.org/draft-07/schema#",
  "$id": "ApiProductActionAdd.schema.json",
  "title": "ApiProductActionAdd",
  "definitions": {
    "ApiProductActionAdd": {
      "$id": "#ApiProductActionAdd",
      "description": "Schema for product action on a product order item for an API.",
      "type": "object",
      "properties": {
        "@type": {
          "const": "ApiProductActionAddDeviceLocationOptimisation",
        },
        "@baseType": {
          "type": "ApiProductActionAdd",
        },
        "@schemaLocation": {
          "type": "string",
          "description": "The URI of this JSON-Schema file that defines additional"
        }
      }
    }
  }
}
```

```
        "type": "string"
    },
    "purpose": {
        "type": "string"
    },
    "countryCode": {
        "type": "array",
        "items": {
            "type": "string"
        }
    },
    "targetApplication": {
        "type": "object",
        "properties": {
            "@type": {
                "const": "ApplicationRef"
            },
            "id": {
                "type": "string"
            }
        }
    }
}
}
```

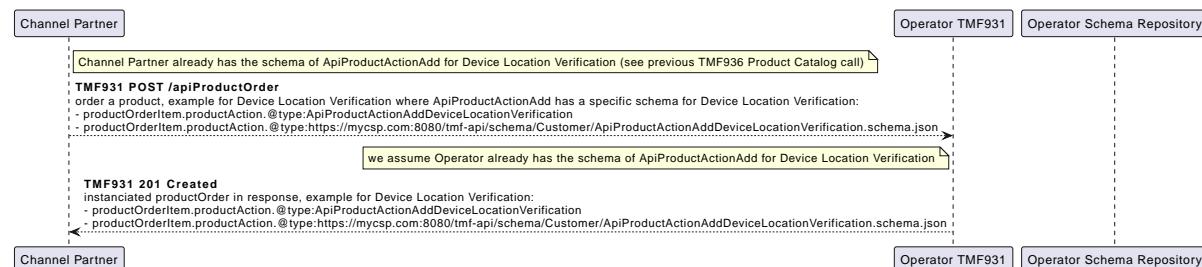
## Call flows

In order to better understand how to manage strongly typed schemas, this call flow is an illustrative way of doing it.

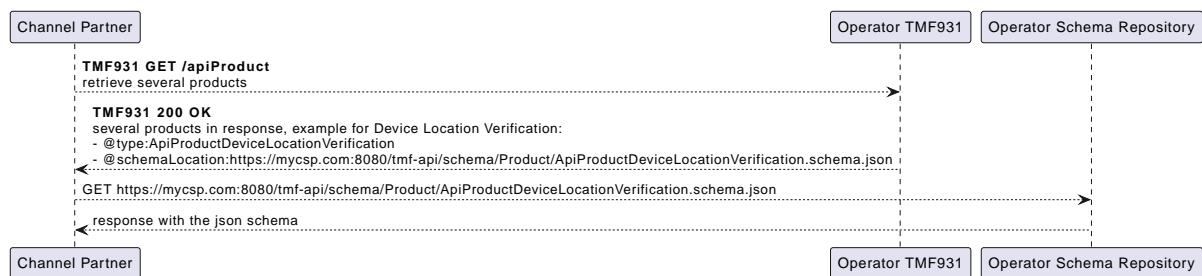
## Getting product offering and product specification



## **Posting product order use case**



## Reading product inventory use case



## Sample Use Cases

This section explains how the functions are implemented using the Onboarding Operate API. As mentioned above, there are three groups of operations in this API:

- Application Service Provider (ApplicationOwner) Management This functional area covers the management of a ApplicationOwner as a Party Role. This includes the creation of the ApplicationOwner PartyRole in this context. It also covers the retrieval of the ApplicationOwner.

\*Application Management This functional area covers the management of the LogicalResource representing the Application in the Channel Partner Resource Inventory. This includes the creation of the Application as a LogicalResource + its LogicalResourceRole in this context. This Application, created in the Channel Partner resource inventory has to be known by the Operator. The Operator will then have to create this representation of this Application in a dedicated resource inventory.

An Application is modeled as a subclass of a LogicalResource.

It covers also the deletion of the Application from the Channel Partner side.

- NaaS Products Management This functional area covers the Channel Partner ordering the Operator for a ApplicationOwner API to be consumed by a Application. This requirement is mandatory as it's the core need for this API business requirements. It permits the Channel Partner to order a Product to the Operator when it is mandated in the Order Delivery process of the Channel Partner. This happens when ApplicationOwner orders an API to Channel Partner.

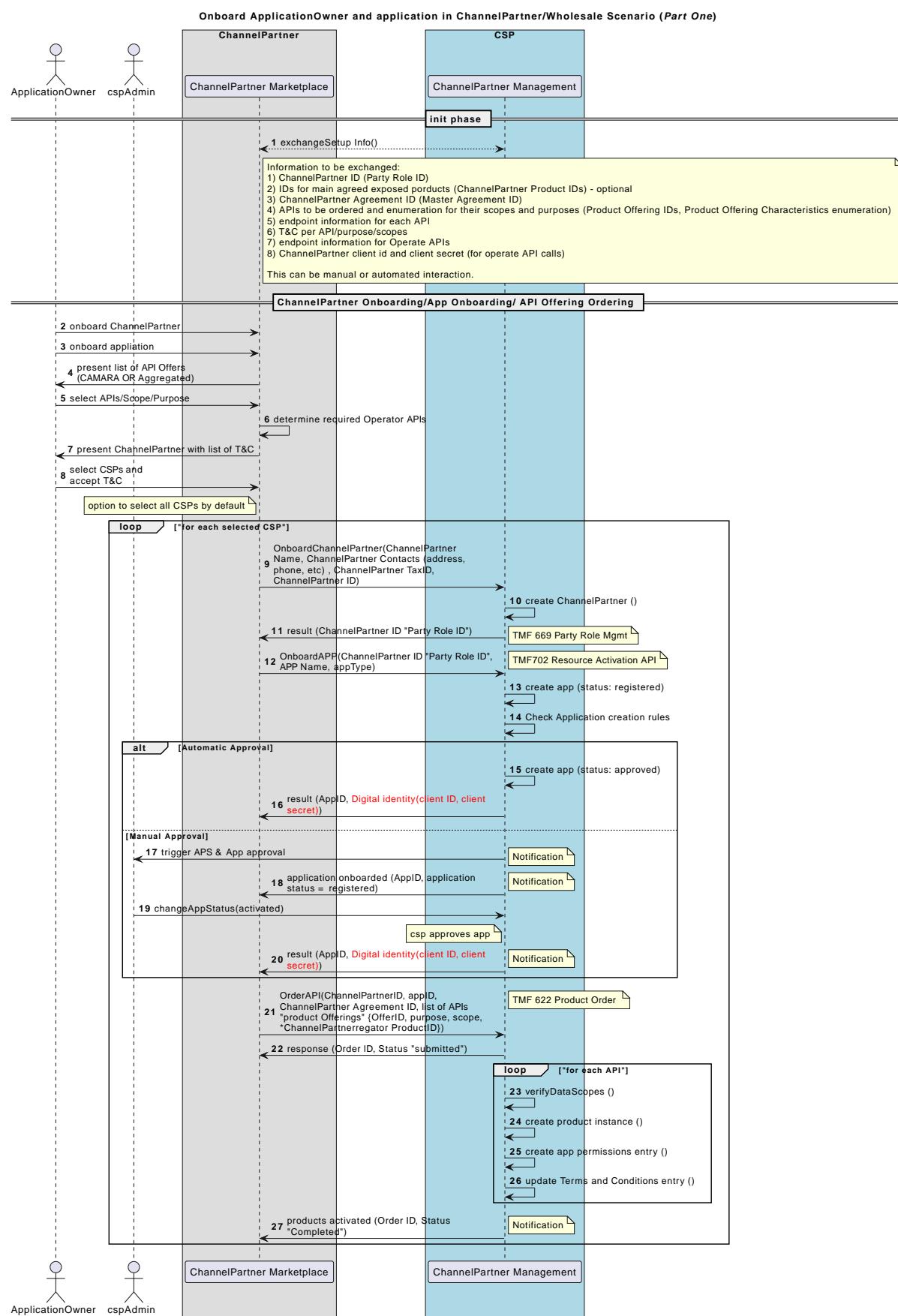
A Service API is modeled as a Product.

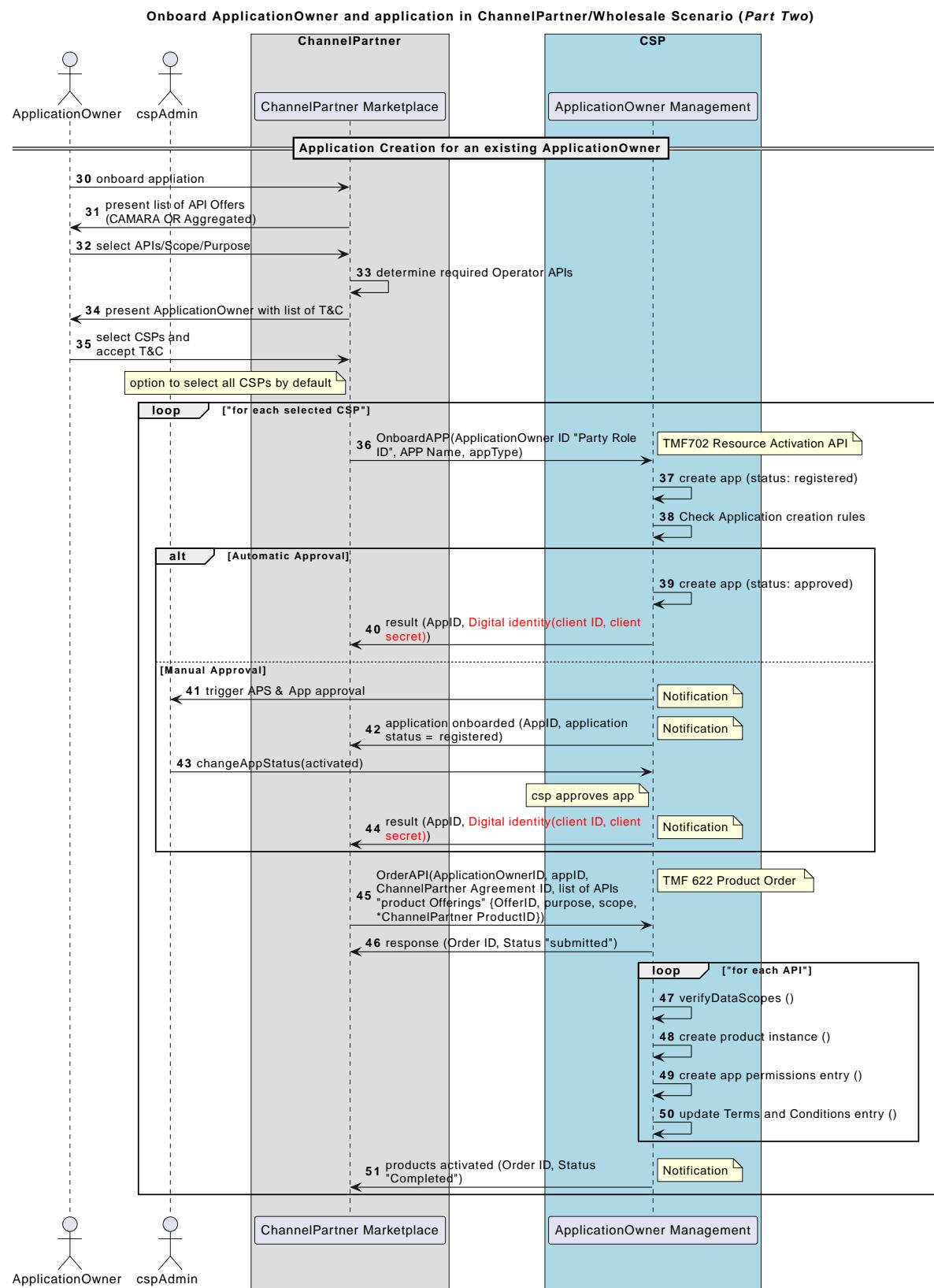
The order can be for subscribing or unsubscribing a Service API.

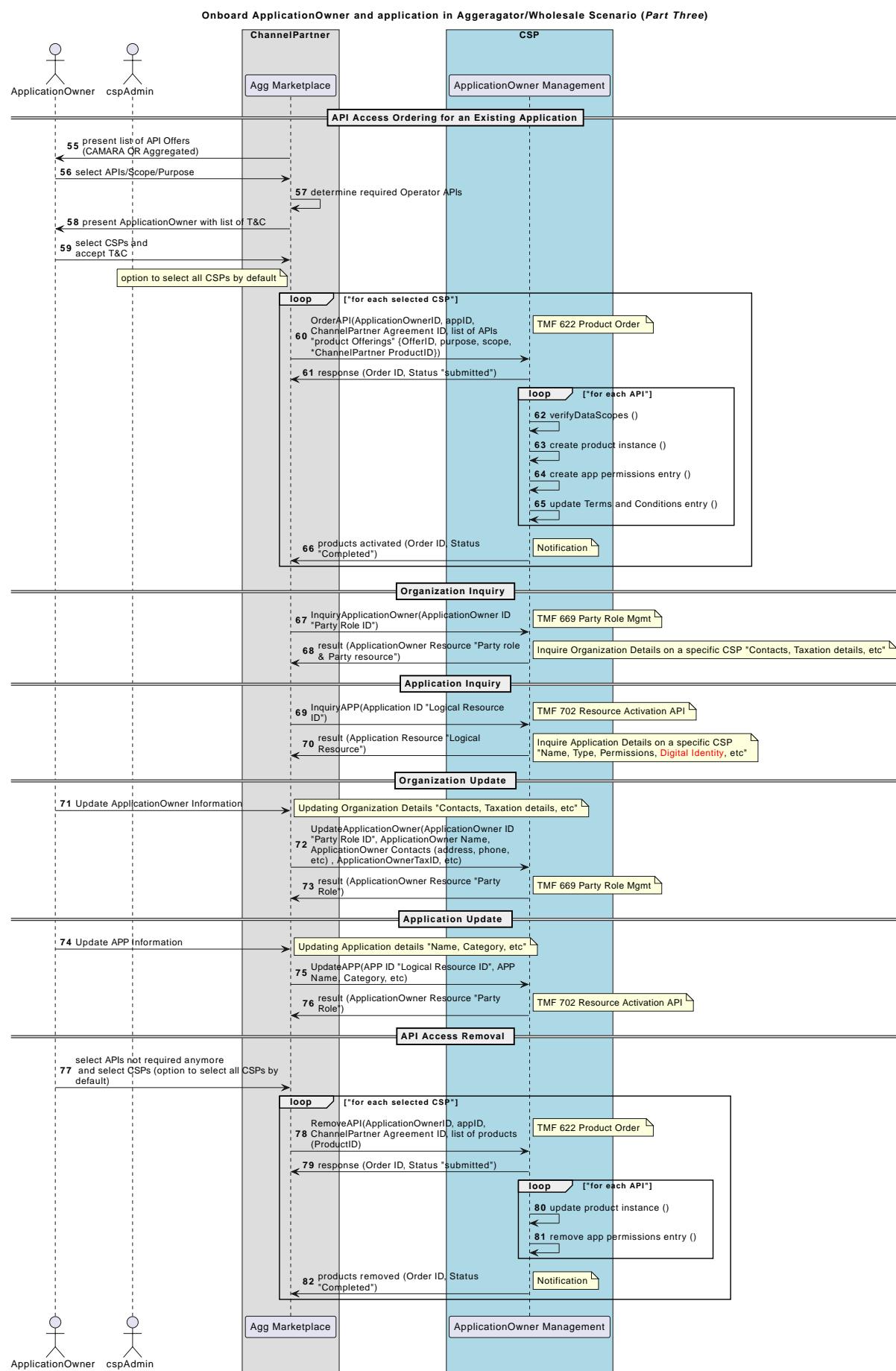
It also covers the retrieval to the Operator of the Channel Partner Products that result from these orders.

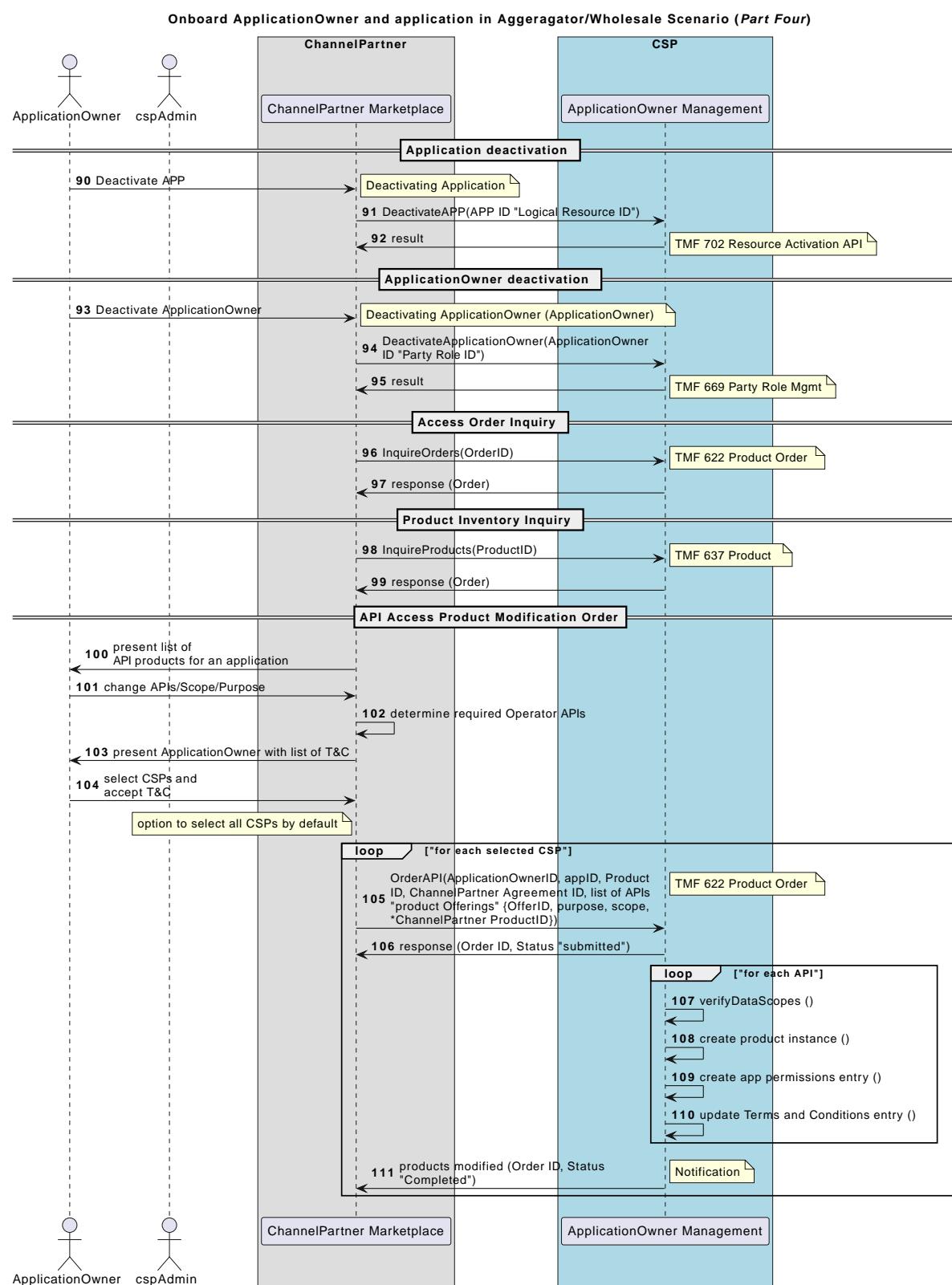
### **UC1: ApplicationOwner Onboarding / Application Onboarding / API Offering Ordering**

The use case covers fully onboarding of the full hierarchy of ApplicationOwner, Application and providing access to Network service APIs.









In the first part, the ApplicationOwner (Application Service Provider) registers with the Channel Partner. As a consequence, the Channel Partner presents the list of available APIs to the ApplicationOwner. Those APIs can be provided by different Operators, since the Channel Partner can have previous business agreements with several CSP.

The ApplicationOwner then can select the list of APIs that fit its needs. It follows a sequence

where the Channel Partner sends the Terms and Conditions for the ApplicationOwner to accept. This sequence can be a loop where the ApplicationOwner registers on several Operators/CSP and accepts the Terms and Conditions of each of them.

Once the ApplicationOwner is registered and the Terms & Conditions have been accepted, the Channel Partner starts working directly with the CSP. For each CSP selected by the ApplicationOwner, the Channel Partner proceeds to onboard the ApplicationOwner in the CSP and then to onboard each of the Applications that the ApplicationOwner wants to register for the use of the CSP APIs.

In a third sequence, for each Application, one or more APIs are ordered to the CSP, who does internal work to create the new API/Products instances, together with permissions and Terms & Conditions checking. When this internal processing is finished, the CSP informs the Channel Partner of the positive result of the request, that is, the activation of the APIs for the ApplicationOwner to use in its Application.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
8	Onboarding ApplicationOwner	POST /applicationOwner
11	Onboard Application	POST /application
16,17,19	Application Approval Status Change Event	POST /client/listener
20	Order API	POST/APIProductOrder

The assumption is that manual checks can be taken on application level, and for initial ApplicationOwner creation both the ApplicationOwner itself as well as the first application can be assessed at the same time.

These operations may require a manual authorization, so has to be designed to be compatible with synchronous or asynchronous functional response.

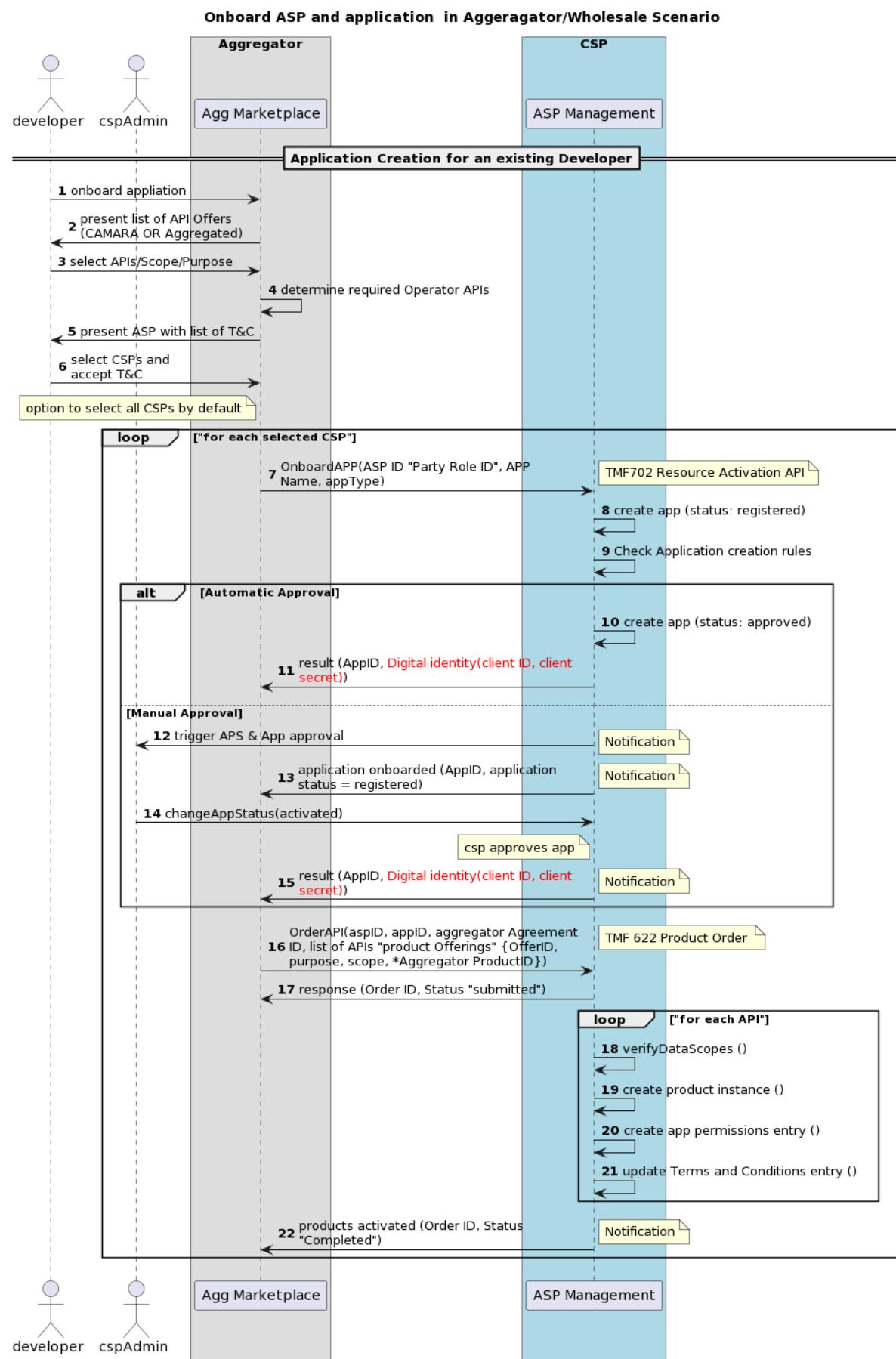
This use case is preceded by the configuration of its products by the operator and the initialization of the Channel Partner Operator agreement. The information below is expected to be exchanged prior this use-case:

- Channel Partner ID
- Identifiers for the main agreed exposed products (Channel Partner Product IDs) - optional
- Channel Partner Agreement Identification (Master Agreement)
- APIs to be ordered and enumeration for their scopes and purposes (Product Offering IDs, Product Offering Characteristics enumeration)
- Endpoint information for each API
- Terms and Conditions per API/purpose/scopes
- Endpoint information for Operate APIs
- Channel Partner client id and client secret (for operate API calls)

## UC2: Application Creation for an existing ApplicationOwner

This use case covers onboarding a new Application for an ApplicationOwner which was already registered in the Channel Partner (and hence in the CSP) and providing access to Network service APIs.

the use case is preceded by the operator configuration of their products initialization of the Channel Partner Operator agreement, and creation of the ApplicationOwner.



The scenario starts in a similar way to Use Case 1. Now the process of ApplicationOwner onboarding is not needed, since the ApplicationOwner is already registered in the Channel Partner and the CSP. A new Application is registered on the Channel Partner, who then proceed to onboard the Application on the CSP. The onboarding includes the registration of the list of Service APIs needed for the Application, together to the internal Operator steps to create new API/Product and validate permissions and Terms & Conditions.

This function may require a manual authorization, so has to be designed to be compatible with synchronous or asynchronous functional response.

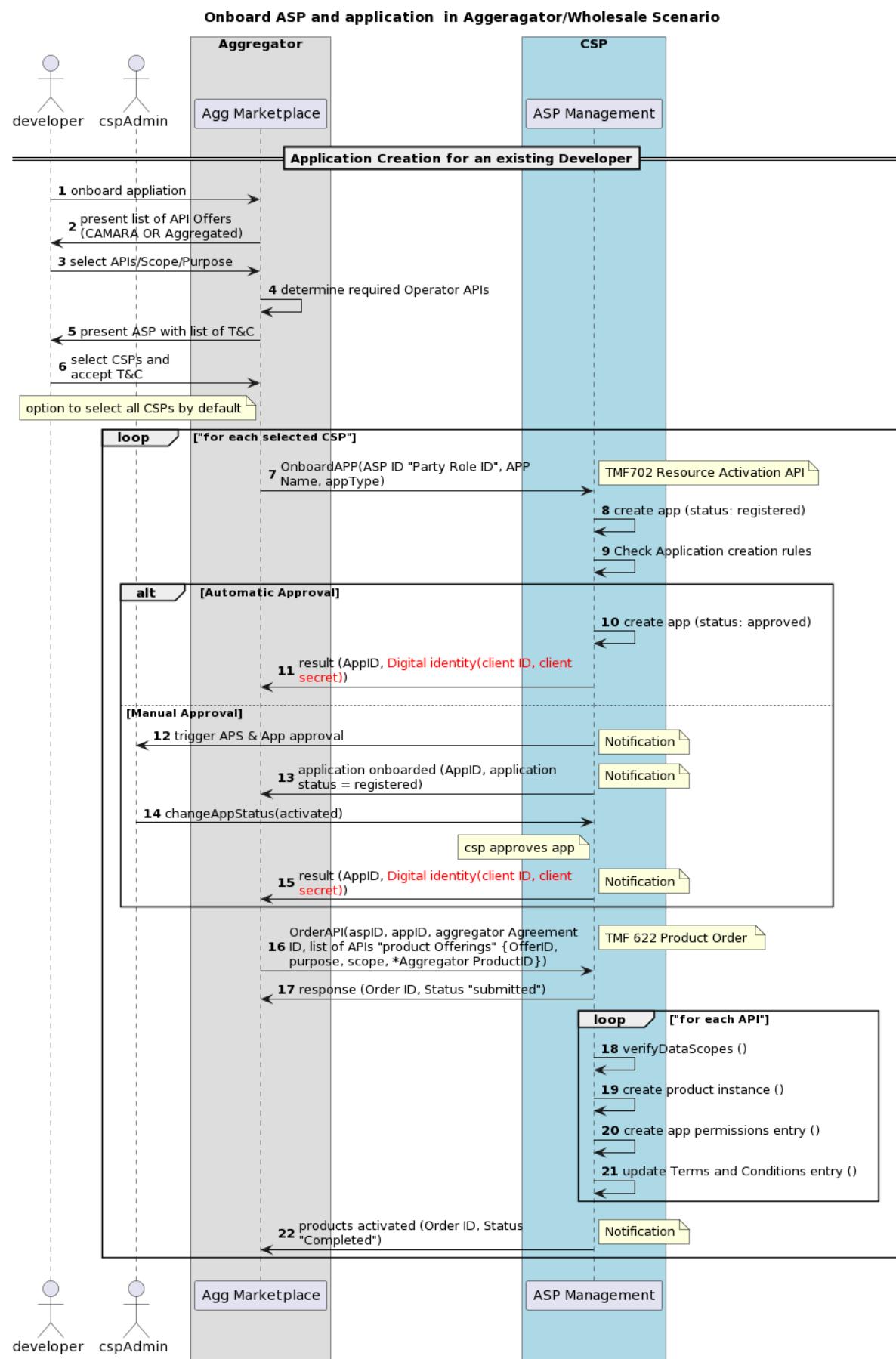
The use case allows for 2 variations of managing application digital identity: Digital Identity is created during application creation : Operate API will orchestrate the Operator security server returning back the client ID and client secret (Digital Identity is returned in application creation response) Digital identity not created during application creation : Separate call need to be orchestrated by the ChannelPartner directly to the operator security server (Digital Identity not returned in application creation response)

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
7	Onboard Application	POST /application
12/13/15	Application Approval Status Change Event	POST/client/listener
16	Order API	POST/APIProductOrder

### UC3: API Access Ordering for an Existing Application

In this use case an Application gets access to Network service APIs. This use case is preceded by the operator configuration of their products, the initialization of the Channel Partner Operator agreement, the creation of the ApplicationOwner as well granting application access to the API.

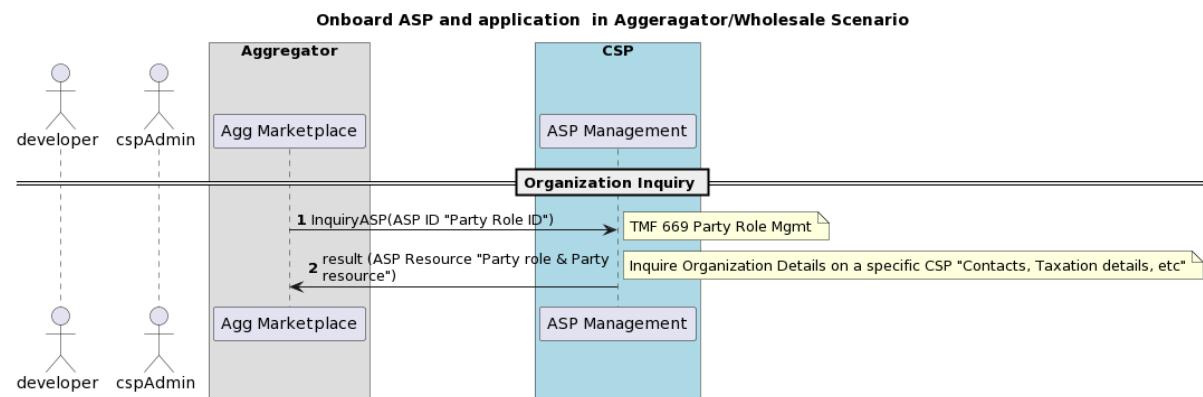


The ApplicationOwner selects one or several APIs/Scopes/Purposes already offered by the Channel Partner. The APIs could be provided by one or several CSPs. For each of the CSPs involved, the ApplicationOwner has to accept the Terms & Conditions. Once this is accomplished, the Channel Partner request onboarding for the APIs to the corresponding CSP. Each of the CSPs does the internal work required to validate permissions and do Terms and Conditions checking. Activation of each of the APIs is notified to the Channel Partner.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
7	Order API	POST/ APIProductOrder

## UC4: Organization Inquiry

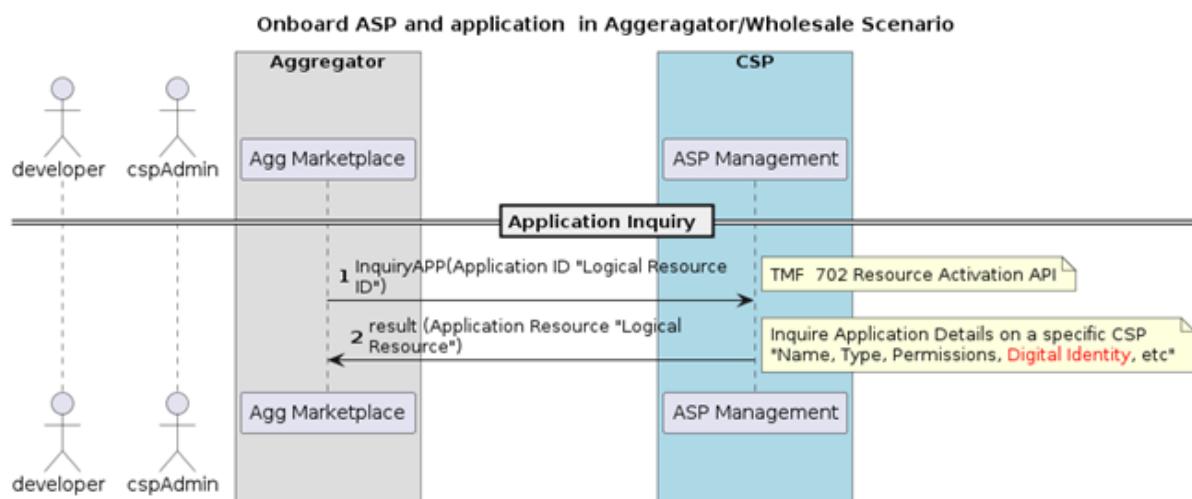


In this use case, the Channel Partner asks the Operator about the information it holds regarding an ApplicationOwner that was previously registered.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
1	Retrieve ApplicationOwner	GET /applicationOwner

## UC5: Application Inquiry

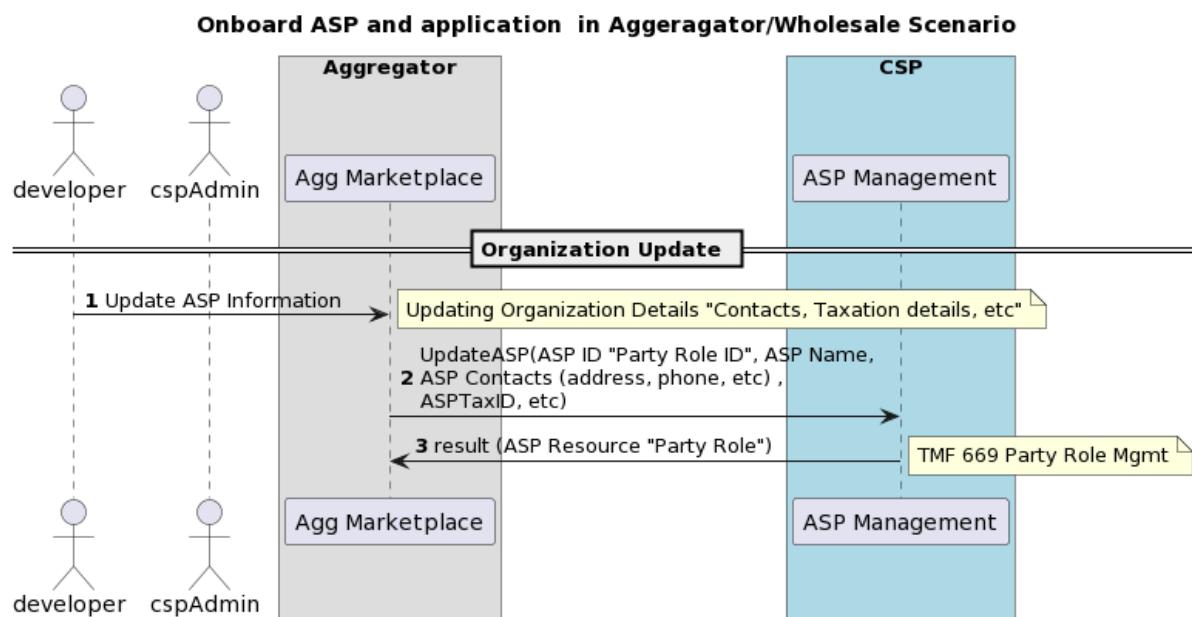


In this use case, the Channel Partner asks the Operator about the information it holds regarding an Application pertaining to an ApplicationOwner. Both ApplicationOwner and its application should have been previously registered.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
1	Retrieve Application	GET /application

## UC6: Organization Update

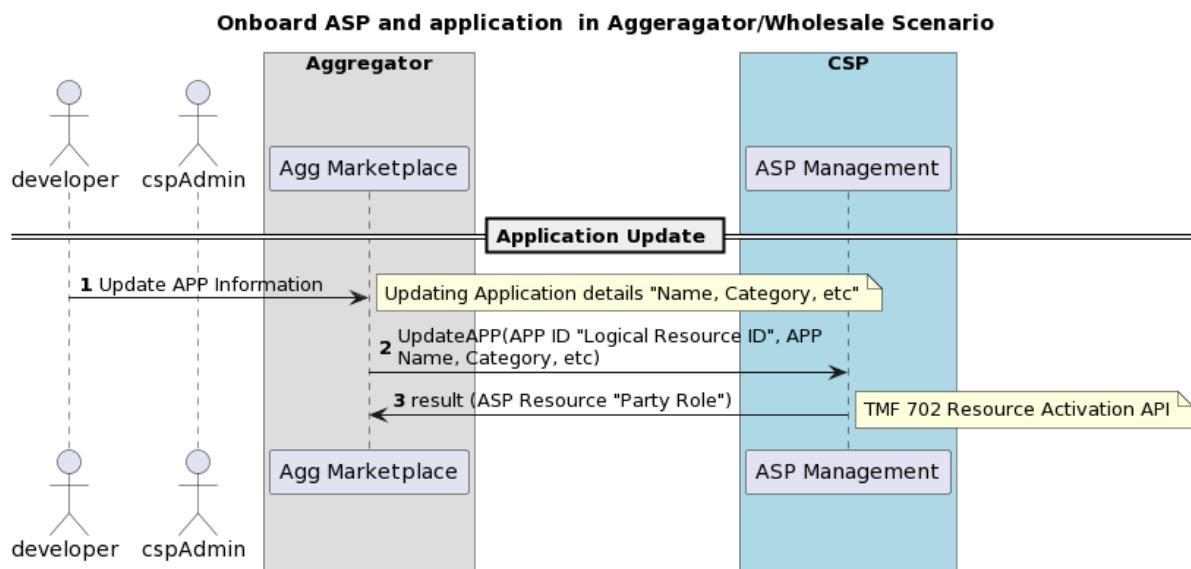


In this use case, the ApplicationOwner requires the Channel Partner to update some details about itself, such as the contact information, tax information, etc. The Channel Partner in turn sends an update request to the CSP to synchronize the changes required. This operation implies that the ApplicationOwner has been previously registered on the Channel Partner and the CSP.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Update ApplicationOwner	PATCH /applicationOwner

## UC7: Application Update

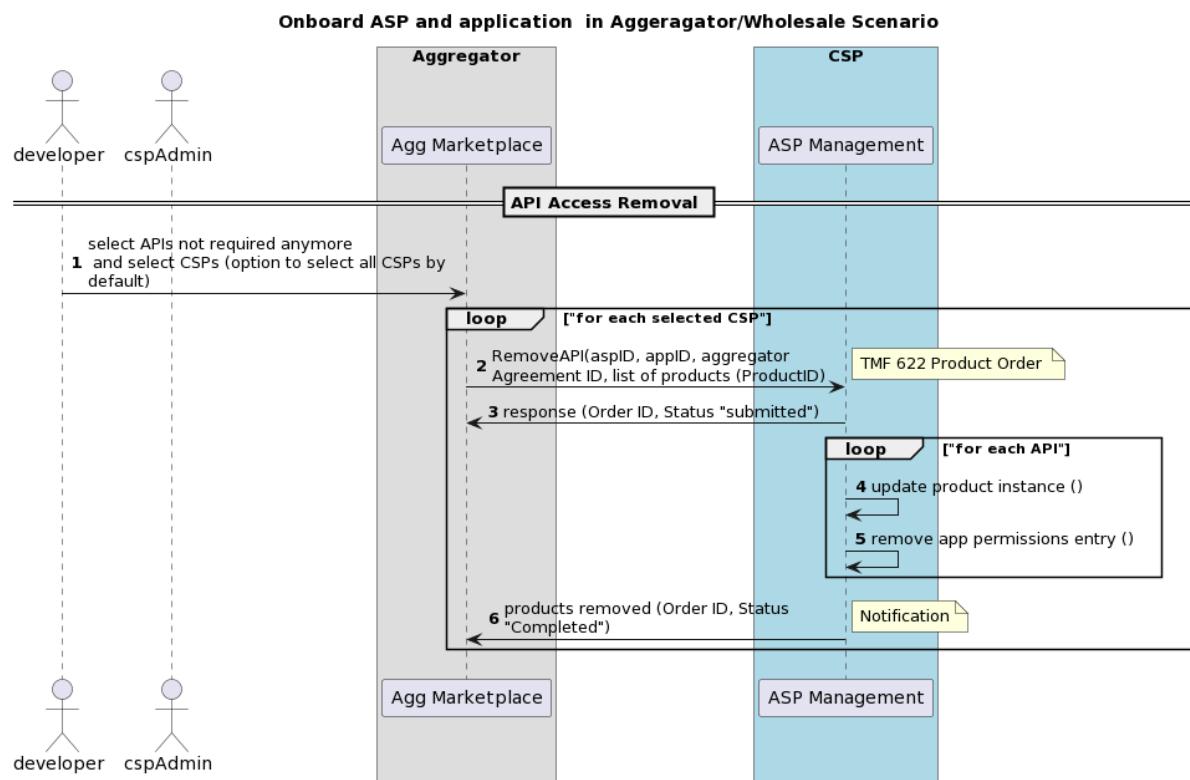


In this use case, the ApplicationOwner requires the Channel Partner to update some details about one of the Applications that were previously registered. The updates involve attributes such as the Name or the Category. The Channel Partner in turn sends an update request to the CSP to synchronize the changes required. This operation implies that the ApplicationOwner and the Application have been previously registered on the Channel Partner and the CSP.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Update Application	PATCH /application

## UC8: API Access Removal



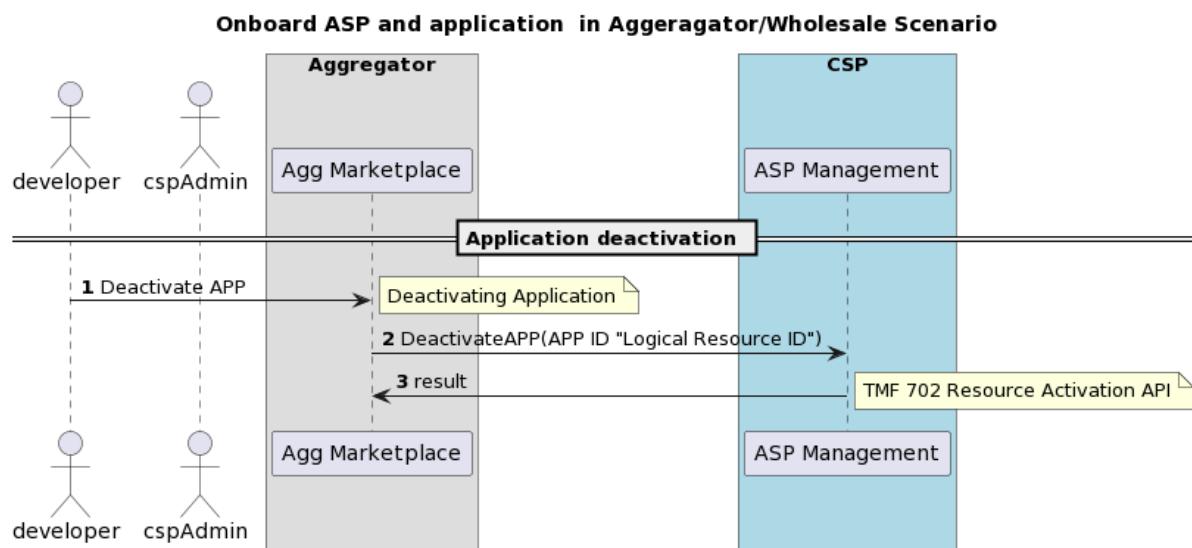
In this use case, the ApplicationOwner requires the Channel Partner to remove some APIs that are not needed any more. CSP providing the APIs and Applications that were using them should be specified. The Channel Partner in turn sends a removal request to the CSP. If there are more than one CSP or more than one API, the Channel Partner sends the removal requests in a loop until all removals have been sent. Each CSP confirms removal for all their APIs.

This operation implies that the ApplicationOwner, the Applications and the APIs have been previously registered on the Channel Partner and the CSP.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Order API	POST/APIProductOrder

## UC9: Application deactivation



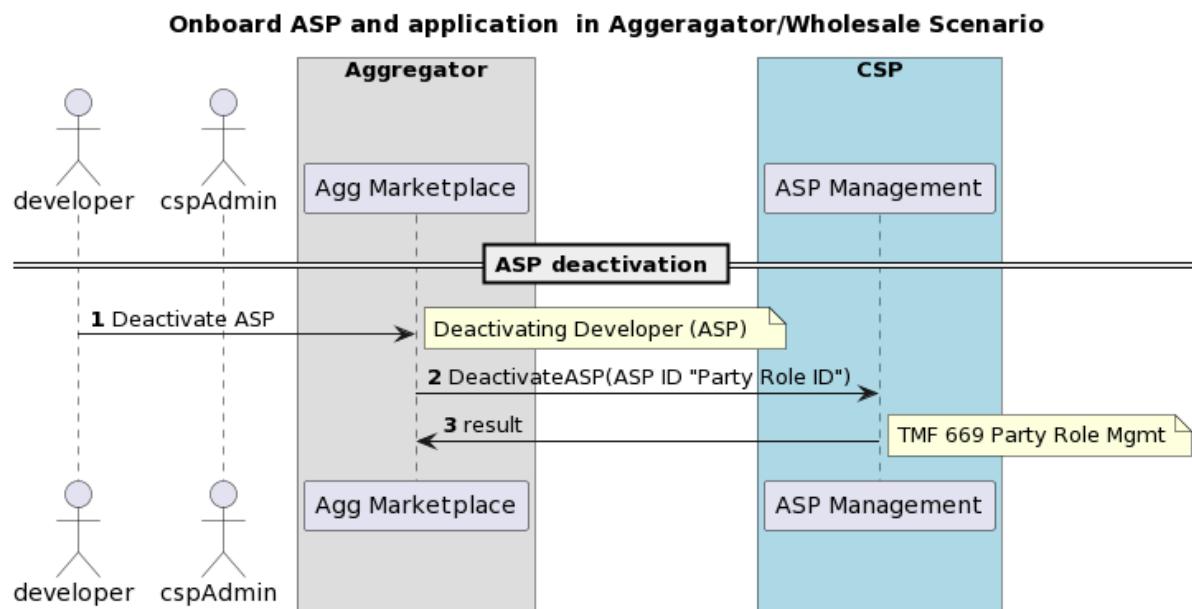
In this use case, the ApplicationOwner requires the Channel Partner to deactivate one of its applications. The Channel Partner, in turn, sends a deactivation request to the CSP and receives a confirmation from it.

This operation implies that the ApplicationOwner and the Application have been previously registered on the Channel Partner and the CSP.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Deactivate Application	PATCH /application

## UC10: ApplicationOwner deactivation



In this use case, the ApplicationOwner requires the Channel Partner to deactivate itself from

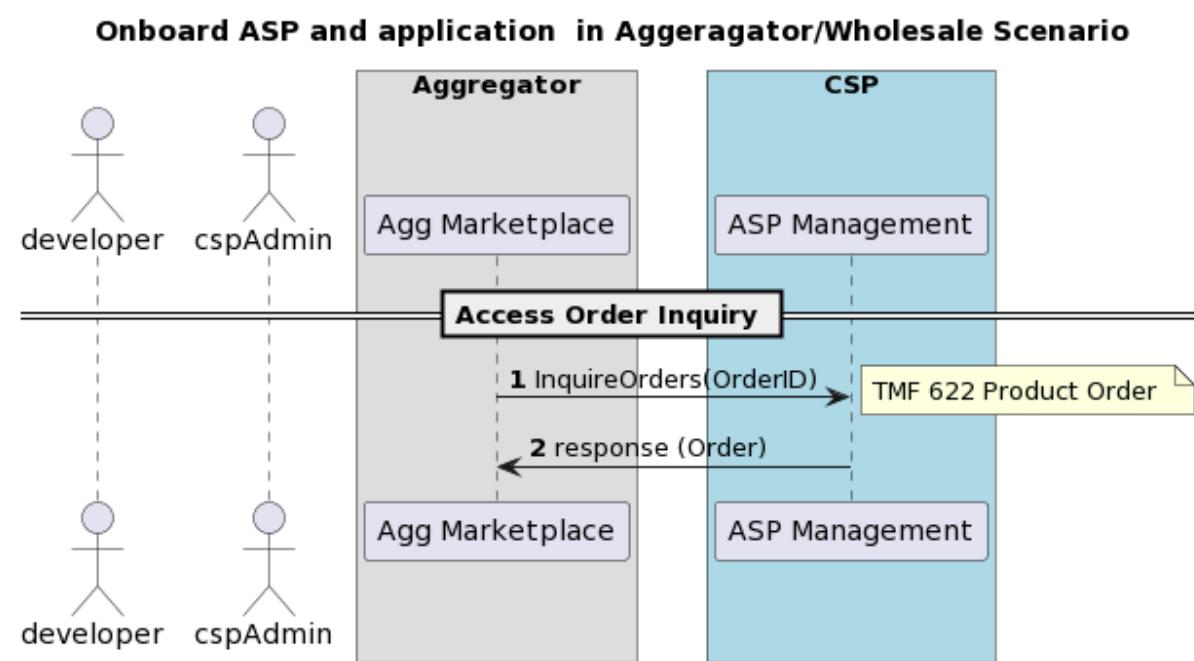
the Channel Partner. The Channel Partner, in turn, sends a deactivation request to the CSP and receives a confirmation from it.

This operation implies that the ApplicationOwner has been previously registered on the Channel Partner and the CSP.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Deactivate ApplicationOwner	PATCH /applicationOwner

## UC11: Product Order Inquiry



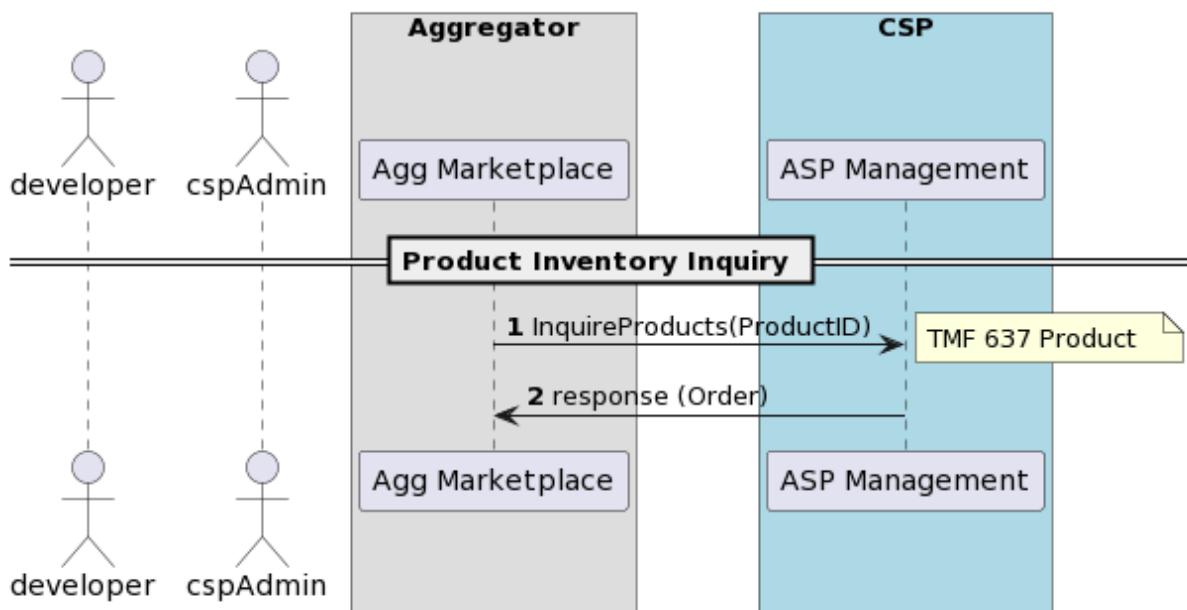
This use case involves the Channel Partner inquiring the CSP about the state of API/Products that were previously requested to be created or removed and are still on process by the CSP.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Orde API	GET /APIProductOrder

## UC12: Product Inquiry

### Onboard ASP and application in Aggregator/Wholesale Scenario

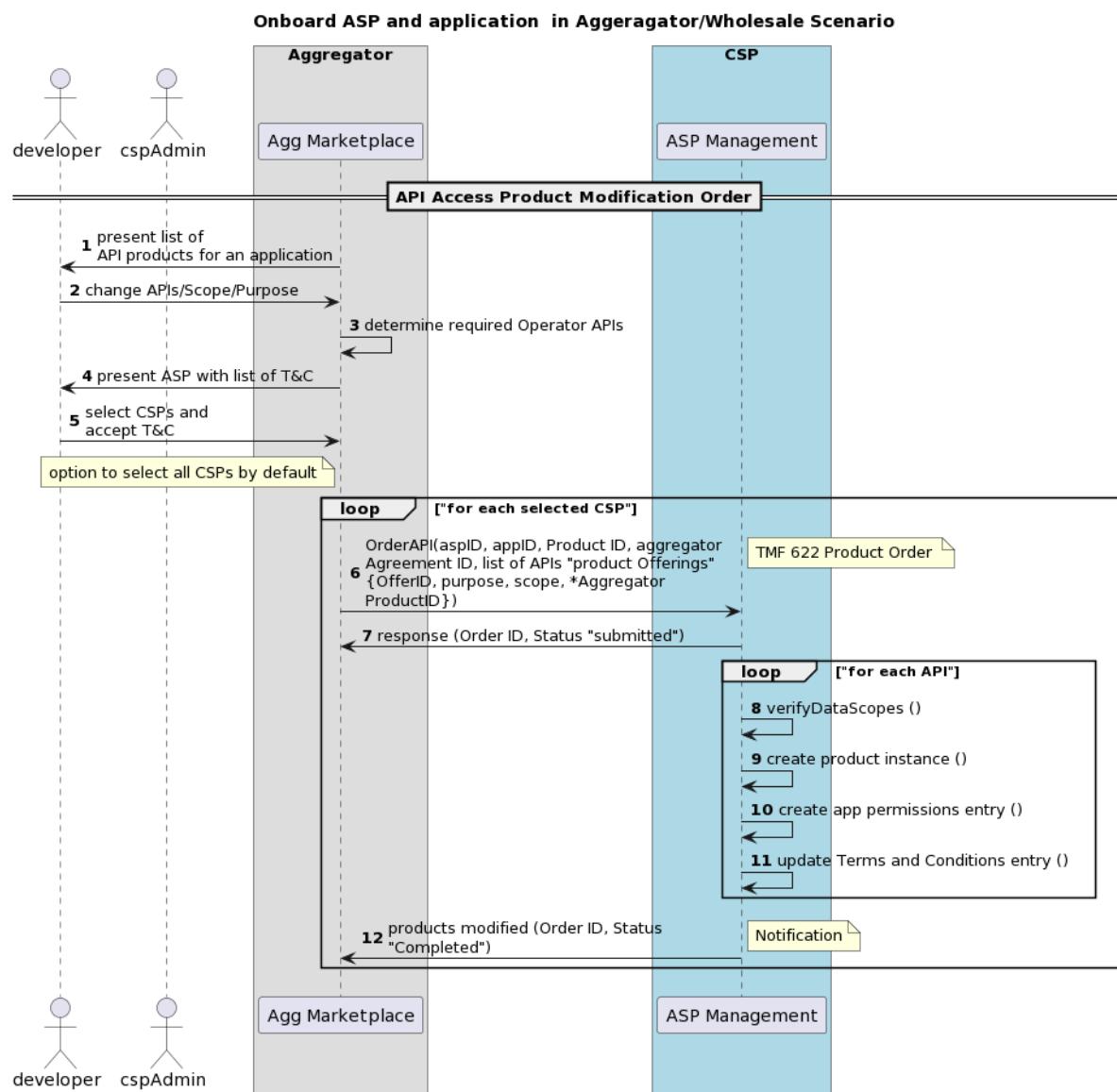


In this use case, the Channel Partner asks the CSP about the status of one of the API/Products that were previously ordered from one of the ApplicationOwner that the Channel Partner is serving.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
2	Orde API	GET /APIProductOrder

### UC13: API Access Product Modification Ordering



In this use case, the ApplicationOwner wants to modify some of the API/Products which is already using. The change could affect the scope or the purpose for the API. After receiving the request from the ApplicationOwner, the Channel Partner detects the affected Product/APIs and present the ApplicationOwner the Terms and Conditions that must be accepted in order to be able to use the modified API/Products.

Then, the Channel Partner proceeds to request the modifications to each of the affected CSPs. Each Operator has to validate permissions and terms and conditions. Once validations are done, the CSP sends a notification to the Channel Partner and the modification is finished.

The Operate APIs to be used in this scenario are the following:

Step	Description	Operation used
6	Order API	POST /APIProductOrder

## Support of polymorphism and extension patterns

Support of polymorphic collections and types and schema based extension is provided by means of a list of generic meta-attributes that we describe below. Polymorphism in collections occurs when entities inherit from base entities, for instance a BillingAccount and SettlementAccount inheriting properties from the abstract Account entity.

Generic support of polymorphism and pattern extensions is described in the TMF API Guidelines, Part 2 (TMF630).

The @type attribute provides a way to represent the actual class type of an entity. For example, within a list of Account instances some may be instances of BillingAccount where other could be instances of SettlementAccount. The @type gives this information. All resources and sub-resources of this API have a @type attributes that can be provided when this is useful.

The @referredType can be used within reference entities (like for instance an AccountRef object) to explicitly denote the actual entity type of the referred class. Notice that in reference entities the @type, when used, denotes the class type of the reference itself, such as BillingAccountRef or SettlementAccountRef, and not the class type of the referred object. However since reference classes are rarely sub-classed, @type is generally not useful in reference objects.

The @schemaLocation property can be used in resources to allow specifying user-defined properties of an Entity or to specify the expected characteristics of an entity.

The @baseType attribute gives a way to provide explicitly the base of class of a given resource that has been extended.

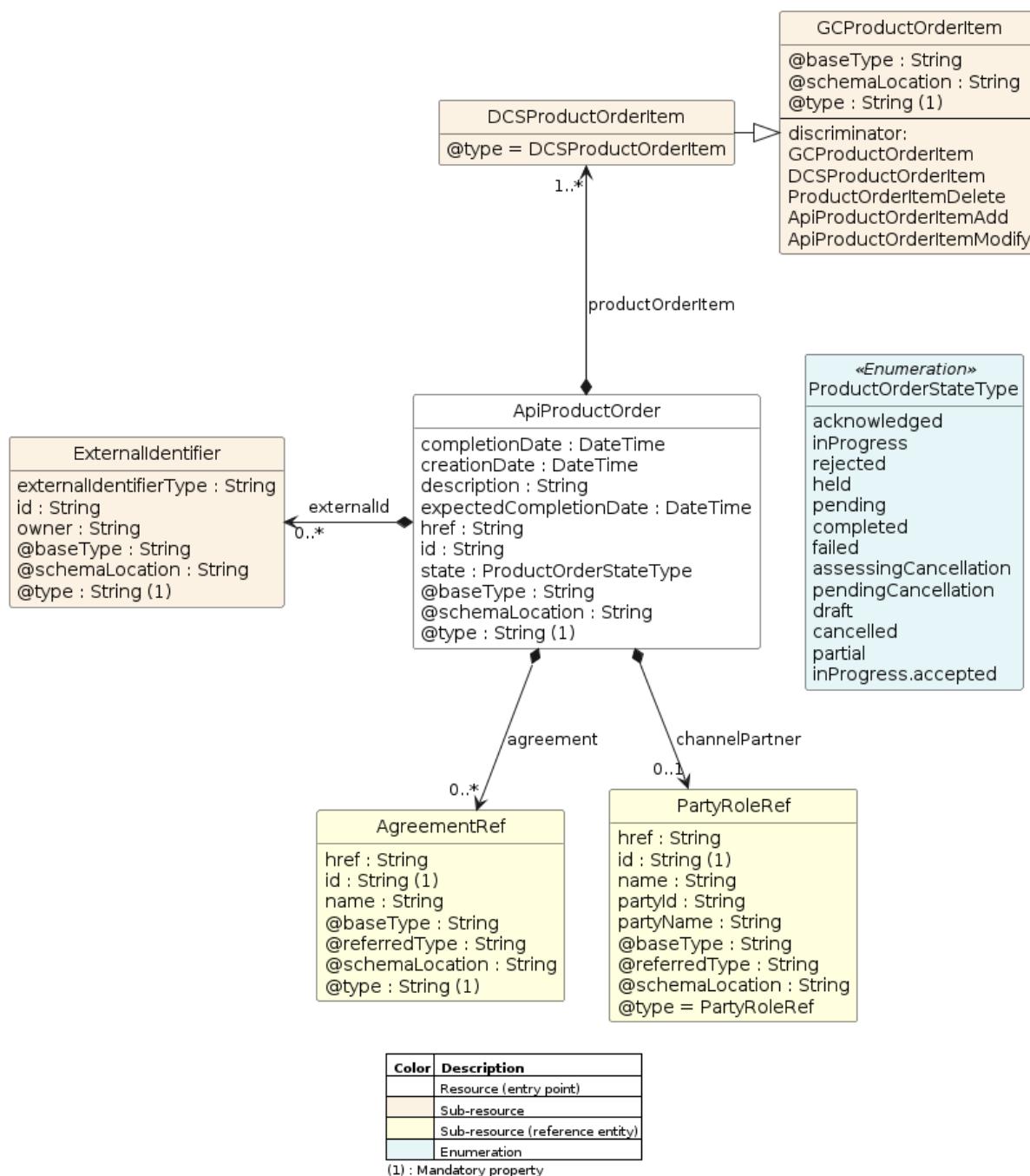
# RESOURCE MODEL

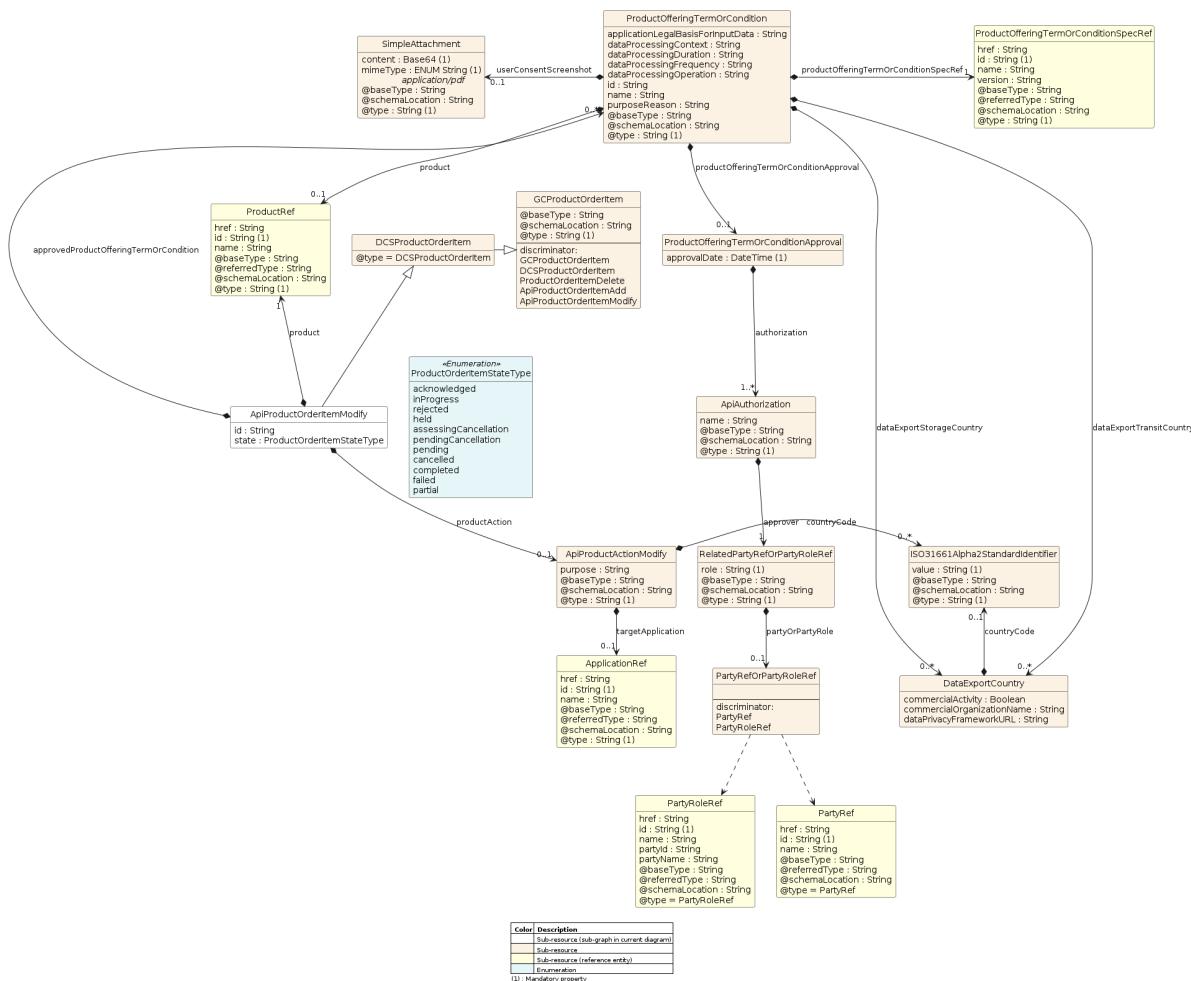
## Managed Entity and Task Resource Models

### **ApiProductOrder resource**

An ApiProductOrder is a specialization of a TMForum ProductOrder, which can be used to place an order between a customer and a service provider or between a service provider and a partner and vice versa.

#### **Resource model**

Figure 1 - `ApiProductOrder`

Figure 2 - `ApiProductOrderItemModify`

## Field descriptions

### ApiProductOrder fields

agreement	An AgreementRef. Agreement reference. An agreement represents a contract or arrangement, either written or verbal and sometimes enforceable by law, such as a service level agreement or a customer price agreement. An agreement involves a number of other business entities, such as products, services, and resources and/or their specifications.
channelPartner	A PartyRoleRef. Party role reference. A party role represents the part played by a party in a given context.
completionDate	A DateTime. Date when the ProductOrder was completed.
creationDate	A DateTime. Date and time when the ProductOrder was created.
description	A String. Description of the product order.
expectedCompletionDate	A DateTime. Expected delivery date amended by the provider.

externalId	An ExternalIdentifier. An identification of an entity that is owned by or originates in a software system different from the current system, for example a ProductOrder handed off from a commerce platform into an order handling system. The structure identifies the system itself, the nature of the entity within the system (e.g. class name) and the unique ID of the entity within the system. It is anticipated that multiple external IDs can be held for a single entity, e.g. if the entity passed through multiple systems on the way to the current system. In this case the consumer is expected to sequence the IDs in the array in reverse order of provenance, i.e. most recent system first in the list.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
productOrderItem	<p>A DCSProductOrderItem. An identified part of the order. A product order is decomposed into one or more order items.</p> <p>DCSProductOrderItem can be instanciated as</p>
state	<p>A ProductOrderStateType. Possible values for the state of the order. ENUMERATED with values:</p> <ul style="list-style-type: none"> <li>* acknowledged</li> <li>* rejected</li> <li>* pending</li> <li>* held</li> <li>* inProgress</li> <li>* cancelled</li> <li>* completed</li> <li>* failed</li> <li>* partial</li> <li>* assessingCancellation</li> <li>* pendingCancellation</li> <li>* draft</li> <li>* inProgress.accepted</li> </ul>
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### DCSProductOrderItem sub-resource fields

@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	DCSProductOrderItem can be instanciated as

### GCPProductOrderItem sub-resource fields

@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	GCPProductOrderItem can be instantiated as * DCSProductOrderItem

### ProductOrderItemDelete sub-resource fields

id	A String. Identifier of the ProductOrder item (generally it is a sequence number 01, 02, 03, ...).
product	A ProductRef. A Product reference.
state	A ProductOrderItemStateType. Possible values for the state of the product order item. ENUMERATED with values: * acknowledged * rejected * pending * held * inProgress * cancelled * completed * failed * partial * assessingCancellation * pendingCancellation
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiProductOrderItemAdd sub-resource fields

approvedProductOfferingTermOrCondition	A ProductOfferingTermOrCondition. Approved Terms or Conditions of the ProductOffering.
id	A String. Identifier of the ProductOrder item (generally it is a sequence number 01, 02, 03, ...).
product	A ProductRef. A Product reference.
productAction	An ApiProductActionAdd. An ApiProductActionAdd is a specialization of a ProductAction, for GSMA Open GW context for action to add a product.
productOffering	A ProductOfferingRef. ProductOffering reference. A product offering represents entities that are orderable from the provider of the catalog, this resource includes pricing information.

state	A ProductOrderItemStateType. Possible values for the state of the product order item. ENUMERATED with values: * acknowledged * rejected * pending * held * inProgress * cancelled * completed * failed * partial * assessingCancellation * pendingCancellation
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiProductOrderItemModify sub-resource fields

approvedProductOfferingTermOrCondition	A ProductOfferingTermOrCondition. Approved Terms or Conditions of the ProductOffering.
id	A String. Identifier of the ProductOrder item (generally it is a sequence number 01, 02, 03, ...).
product	A ProductRef. A Product reference.
productAction	An ApiProductActionModify. An ApiProductActionModify is a specialization of a ProductAction, for GSMA Open GW context for action to modify a product. The values in the schema shall override the values in the Product; it means if the purpose values were [A,B] then if in the modify productAction the purpose values are [A,C] it means the purpose B will be removed and purpose C will be added.
state	A ProductOrderItemStateType. Possible values for the state of the product order item. ENUMERATED with values: * acknowledged * rejected * pending * held * inProgress * cancelled * completed * failed * partial * assessingCancellation * pendingCancellation
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.

@type	A String. When sub-classing, this defines the sub-class Extensible name.
-------	--

### ExternalIdentifier sub-resource fields

externalIdentifierType	A String. Type of the identification, typically would be the type of the entity within the external system.
id	A String. Identification of the entity within the external system.
owner	A String. Name of the external system that owns the entity.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### AgreementRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRoleRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
partyId	A String. The identifier of the engaged party that is linked to the PartyRole object.
partyName	A String. The name of the engaged party that is linked to the PartyRole object.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.

<b>@type</b>	A String. When sub-classing, this defines the sub-class Extensible name.
--------------	--

### Json representation sample(s)

We provide below a JSON representation as example of the 'ApiProductOrder' resource object.

```
{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "id": "322",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API order for an Application Owner",
    "productOrderItem": [
        {
            "@type": "ApiProductOrderItemAdd",
            "@baseType": "ProductOrderItem",
            "id": "1",
            "state": "completed",
            "productOffering": {
                "@type": "ProductOfferingRef",
                "id": "202",
                "name": "areocloud_device_location_verification"
            },
            "product": {
                "@type": "ProductRef",
                "id": "122"
            },
            "productAction": {
                "@type": "ApiProductActionAddDeviceLocationVerification",
                "@baseType": "ApiProductAction",
                "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Customer/ApiProductActionAddDeviceLocationVerification.schema.json",
                "purpose": "FraudPreventionAndDetection",
                "bestAccuracy": "100000",
                "targetApplication": {
                    "@type": "ApplicationRef",
                    "id": "101"
                }
            }
        },
        "approvedProductOfferingTermOrCondition": [
            {
                "@type": "ProductOfferingTermOrCondition",
                "name": "Device Location Term or Condition",
                "productOfferingTermOrConditionSpec": {

```

```
        "id": "22332",
        "name": "device_location_verification_terms",
        "version": "1.1"
    },
    "productOfferingTermOrConditionApproval": {
        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00",
        "authorization": [
            {
                "@type": "ApiAuthorization",
                "name": "Application Owner representative",
                "approver": {
                    "@type": "RelatedPartyRefOrPartyRoleRef",
                    "role": "applicationOwner",
                    "partyOrPartyRole": {
                        "@type": "PartyRoleRef",
                        "id": "31"
                    }
                }
            }
        ]
    }
},
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
```

## ApiProduct resource

A product offering procured by a customer or other interested party playing a party role. A product is realized as one or more service(s) and / or resource(s).

### Resource model

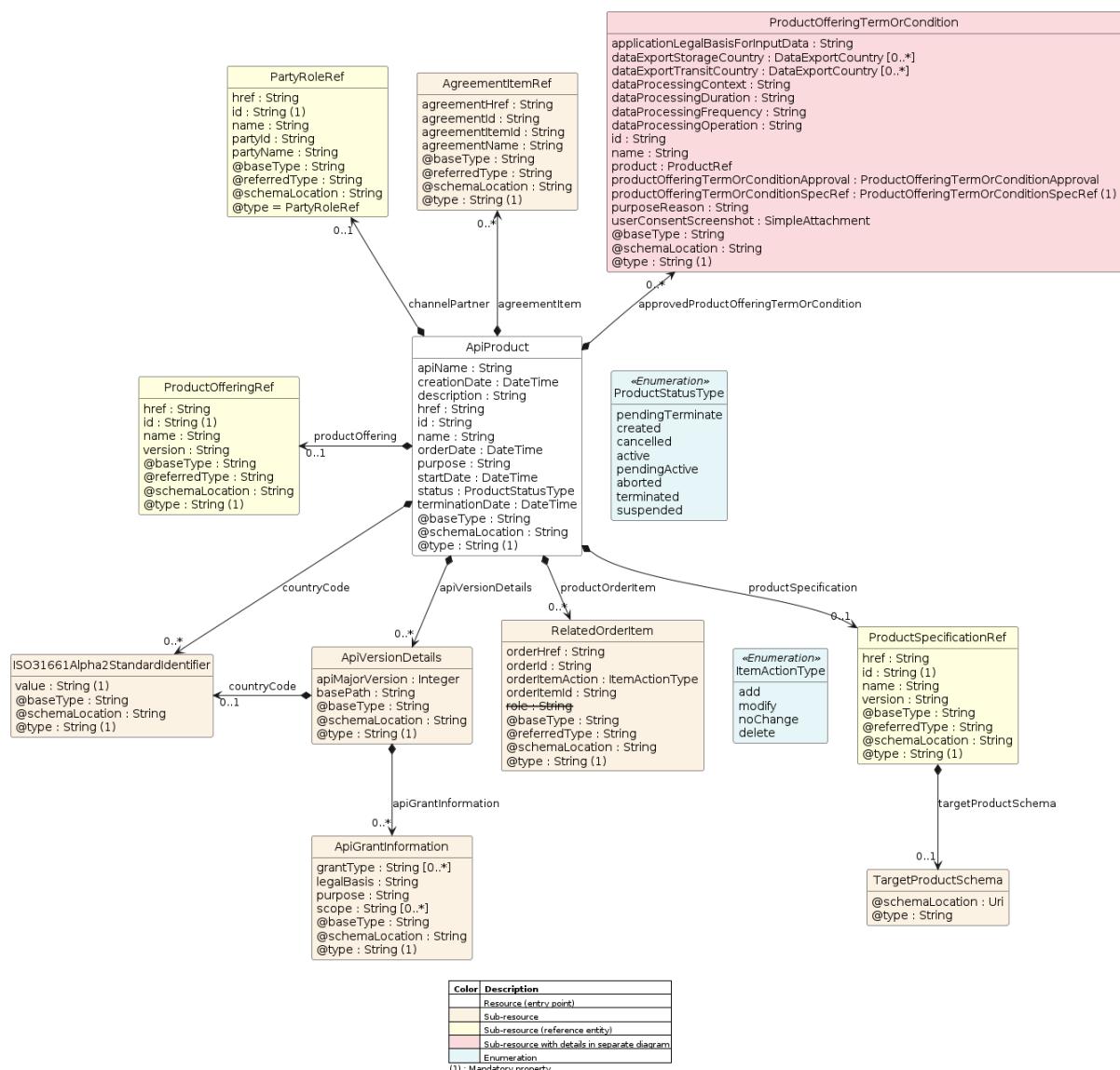


Figure 3 - ApiProduct

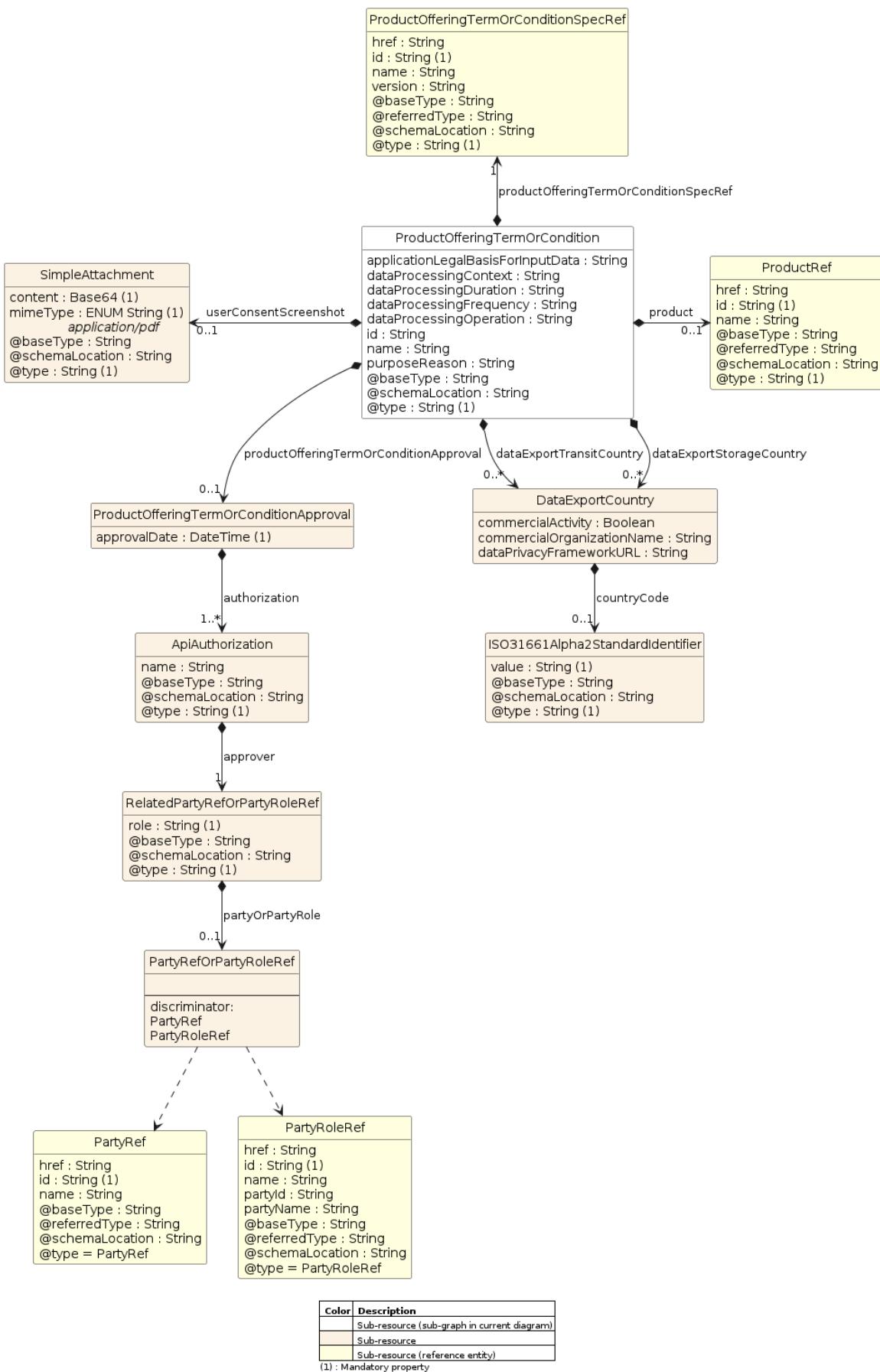


Figure 4 - ProductOfferingTermOrCondition

## Field descriptions

### ApiProduct fields

agreementItem	An AgreementItemRef. It's a Agreement item that has been executed previously.
apiName	A String. Standardized name of the API.
apiVersionDetails	An ApiVersionDetails. A set of ApiProduct characteristics grouped together by API major version.
approvedProductOfferingTermOrCondition	A ProductOfferingTermOrCondition. Approved Terms or Conditions of the ProductOffering.
channelPartner	A PartyRoleRef. Party role reference. A party role represents the part played by a party in a given context.
countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.
creationDate	A DateTime. Date and time when the product was created.
description	A String. Is the description of the product. It could be same description than Product Offering one.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the product. It could be the same as the name of the product offering.
orderDate	A DateTime. Is the date when the product was ordered.
productOffering	A ProductOfferingRef. ProductOffering reference. A product offering represents entities that are orderable from the provider of the catalog, this resource includes pricing information.
productOrderItem	A RelatedOrderItem. It's a Order item that has been executed previously.
productSpecification	A ProductSpecificationRef. ProductSpecification reference. A product Specification represents entities that are orderable from the provider of the catalog.
purpose	A String. Purpose for the use of the API. Value must be one of the W3C list : <a href="https://w3c.github.io/cg-reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-purpose">https://w3c.github.io/cg-reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-purpose</a> , as stated in the API ProductSpecification. All the possibilities are defined on ApiPurposeType schema. Examples: "AcademicResearch" "AccountManagement" "Advertising" "AntiTerrorismOperations" "CommercialResearch" "CommunicationForCustomerCare" "CommunicationManagement" "CounterMoneyLaundering" "CreditChecking" "CustomerCare".
startDate	A DateTime. Is the date from which the product starts.

status	A ProductStatusType. Possible values for the status of the product. ENUMERATED with values: * created * pendingActive * cancelled * active * pendingTerminate * terminated * suspended * aborted
terminationDate	A DateTime. Is the date when the product was terminated.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
version	A String. Version of the product offering.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### RelatedOrderItem sub-resource fields

orderHref	A String. Reference of the related entity.
orderId	A String. Unique identifier of a related Order.
orderItemAction	An ItemActionType. Action to be performed on the entity managed by the item. ENUMERATED with values: * add * modify * delete * noChange
orderItemId	A String. Id of an item of a product order.
role	DEPRECATED A String. Role played by the order.
@baseType	A String. When sub-classing, this defines the super-class.

@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### AgreementItemRef sub-resource fields

agreementHref	A String. Reference of the related entity.
agreementId	A String. Unique identifier of a related entity.
agreementItemId	A String. Id of an item of a Agreement.
agreementName	A String. Name of the related entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingTermOrCondition sub-resource fields

applicationLegalBasisForInputData	A String. One or several legal basis for product order use. For instance, it applies on personal data that is contained in the Application API call (body, query param, header, ...). Value that should be used are defined in DpvLegalBasisType. Examples as given by W3C: "Consent" "LegitimateInterest" "DataTransferLegalBasis" "LegalObligation" "PublicInterest" "VitalInterest" "OfficialAuthorityOfController".
dataExportStorageCountry	A DataExportCountry. This schema permits to declare the countries and context where some data has been stored or has transited.
dataExportTransitCountry	A DataExportCountry. This schema permits to declare the countries and context where some data has been stored or has transited.
dataProcessingContext	A String. Context classes of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvContextClassesType.
dataProcessingDuration	A String. Duration of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvDurationType.
dataProcessingFrequency	A String. Frequency of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvFrequencyType.

dataProcessingOperation	A String. Operations of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvProcessingOperationType.
id	A String. Identifier of the ProductOfferingTermOrCondition.
name	A String. Identifier of the ProductOfferingTermOrCondition.
product	A ProductRef. A Product reference.
productOfferingTermOrConditionApproval	A ProductOfferingTermOrConditionApproval. Approval entity for the ProductOfferingTermOrCondition. Exists when Terms or Conditions are approved.
productOfferingTermOrConditionSpecificationRef	A ProductOfferingTermOrConditionSpecRef. Reference to the ProductOfferingTermOrCondition specification.
purposeReason	A String. Explain the reason justifying the purpose, indicating specifically which is the reason why the API is employed as part of the application's use case.
userConsentScreenshot	A SimpleAttachment. Complements the description of an element (for instance a product) through video, pictures...
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRoleRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
partyId	A String. The identifier of the engaged party that is linked to the PartyRole object.
partyName	A String. The name of the engaged party that is linked to the PartyRole object.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductSpecificationRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.

name	A String. Name of the referred entity.
targetProductSchema	A TargetProductSchema. The reference object to the schema and type of target product which is described by product specification.
version	A String. Version of the product specification.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiVersionDetails sub-resource fields

apiGrantInformation	An ApiGrantInformation. A set of ApiProductCharacteristics grouped together for usage grant.
apiMajorVersion	An Integer. Major version of the API standard specification.
basePath	A String. Base path of the API.
countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ISO31661Alpha2StandardIdentifier sub-resource fields

value	A String. The value of the resource in the ISO 3166-1 Alpha 2 standard.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingTermOrConditionApproval sub-resource fields

approvalDate	A DateTime. Date of the approval.
--------------	-----------------------------------

<b>authorization</b>	DEPRECATED An ApiAuthorization. DEPRECATED not possible yet to have the ID of the individual that made the approval.
----------------------	---

### SimpleAttachment sub-resource fields

content	A Base64. The actual contents of the attachment object, if embedded, encoded as base64.
contentType	A String. A technical characterization of the attachment content format using IETF Mime Types. ENUMERATED with values: * application/pdf
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingTermOrConditionSpecRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
version	A String. Version of the ProductOfferingTermOrCondition specification.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.

@type	A String. When sub-classing, this defines the sub-class Extensible name.
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### DataExportCountry sub-resource fields

commercialActivity	A Boolean. Flag to indicate if commercial activity applies to these data management.
commercialOrganizationName	A String. Organization who is managing the data.
countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.
dataPrivacyFrameworkURL	A String. URL to the organization or governmental data privacy framework if applies.

### ApiAuthorization sub-resource fields

approver	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
name	A String. Name of the required authorization.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### RelatedPartyRefOrPartyRoleRef sub-resource fields

partyOrPartyRole	A PartyRefOrPartyRoleRef.
role	A String. Role played by the related party or party role in the context of the specific entity it is linked to. Such as 'initiator', 'customer', 'salesAgent', 'user'.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.

@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### TargetProductSchema sub-resource fields

@schemaLocation	A Uri. This field provides a link to the schema describing the target product.
@type	A String. Class type of the target product.

### ApiGrantInformation sub-resource fields

grantType	A String. One or several grantType of the API, as stated in the API ProductSpecification. Examples: "authorization_code" "client_credentials" "urn:ietf:params:oauth:grant-type:token-exchange" "urn:ietf:params:oauth:grant-type:jwt-bearer" "urn:ietf:params:oauth:grant-type:saml2-bearer" "urn:ietf:params:oauth:grant-type:device_code" "urn:openid:params:grant-type:ciba".
legalBasis	A String. One or several legal basis for the API use. Value that should be used are defined in DpvLegalBasisType schema. Examples as given by W3C: "Consent" "LegitimateInterest" "DataTransferLegalBasis" "LegitimateInterestOfDataSubject" "LegalObligation" "PublicInterest" "VitalInterest" "OfficialAuthorityOfController".
purpose	A String. Purpose of the API. Value must be one of the W3C list : <a href="https://w3c.github.io/cg-reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-purpose">https://w3c.github.io/cg-reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-purpose</a> , as stated in the API ProductSpecification. All the possibilities are defined on ApiPurposeType schema. Examples: "AcademicResearch" "AccountManagement" "Advertising" "AntiTerrorismOperations" "CommercialResearch" "CommunicationForCustomerCare" "CommunicationManagement" "CounterMoneyLaundering" "CreditChecking" "CustomerCare".
scope	A String. One or several scopes of the API, as stated in the API ProductSpecification. Examples: "sim-swap:retrieve-date".
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### Json representation sample(s)

We provide below a JSON representation as example of the 'ApiProduct' resource object.

```
{
    "@type": "ApiProductDeviceLocationVerification",
    "@baseType": "ApiProduct",
    "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Product/ApiProductDeviceLocationVerification.schema.json",
    "id": "122",
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProduct/122",
    "name": "device_location_verification",
    "description": "Open Gateway Device Location Verify",
    "creationDate": "2023-10-21T23:20:50.52Z",
    "startDate": "2023-10-21T23:20:50.52Z",
    "status": "active",
    "productOffering": {
        "@type": "ProductOfferingRef",
        "id": "202",
        "name": "areocloud_device_location_verification"
    },
    "productOrderItem": [
        {
            "@type": "RelatedProductOrderItem",
            "orderId": "322",
            "orderItemId": "1",
            "orderItemAction": "add"
        },
        {
            "@type": "RelatedProductOrderItem",
            "orderId": "323",
            "orderItemId": "1",
            "orderItemAction": "modify"
        }
    ],
    "productSpecification": {
        "@type": "ProductSpecificationRef",
        "id": "533",
        "name": "device_location_verification",
        "version": "1.0"
    },
    "apiName": "LocationVerification",
    "apiVersionDetails": [
        {
            "@type": "ApiVersionDetails",
            "apiMajorVersion": 0,
            "basePath": "location-verification",
            "apiGrantInformation" : [
                {
                    "@type": "ApiGrantInformation",
                    "purpose": "FraudPreventionAndDetection",
                    "scope": [
                        "location-verification:verify"
                    ],
                    "grantType": [
                        "urn:openid:params:grant-type:ciba",
                        "authorization_code"
                    ],
                    "legalBasis": "Consent"
                },
                {
                    "@type": "ApiGrantInformation",
                    "scope": [

```

```
        "location-verification:read"
    ],
    "grantType": [
        "client_credentials"
    ]
}
],
"bestAccuracy": "500",
"approvedProductOfferingTermOrCondition": [
{
    "@type": "ProductOfferingTermOrCondition",
    "name": "Device Location Term or Condition",
    "productOfferingTermOrConditionSpec": {
        "@type": "ProductOfferingTermOrConditionSpec",
        "id": "22332",
        "name": "device_location_verification_terms",
        "version": "1.1"
    },
    "productOfferingTermOrConditionApproval": {
        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00:00.000Z",
        "authorization": [
            {
                "@type": "Authorization",
                "name": "Application Owner representative",
                "approver": {
                    "@type": "RelatedPartyRefOrPartyRoleRef",
                    "role": "applicationOwner",
                    "partyOrPartyRole": {
                        "@type": "PartyRoleRef",
                        "id": "31"
                    }
                }
            }
        ]
    }
},
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
```

## Application resource

An Application is a kind-of LogicalResource is a type of resource that describes the common set of attributes shared by all concrete logical resources (e.g. TPE, MSISDN, IP Addresses) in the inventory.

### Resource model

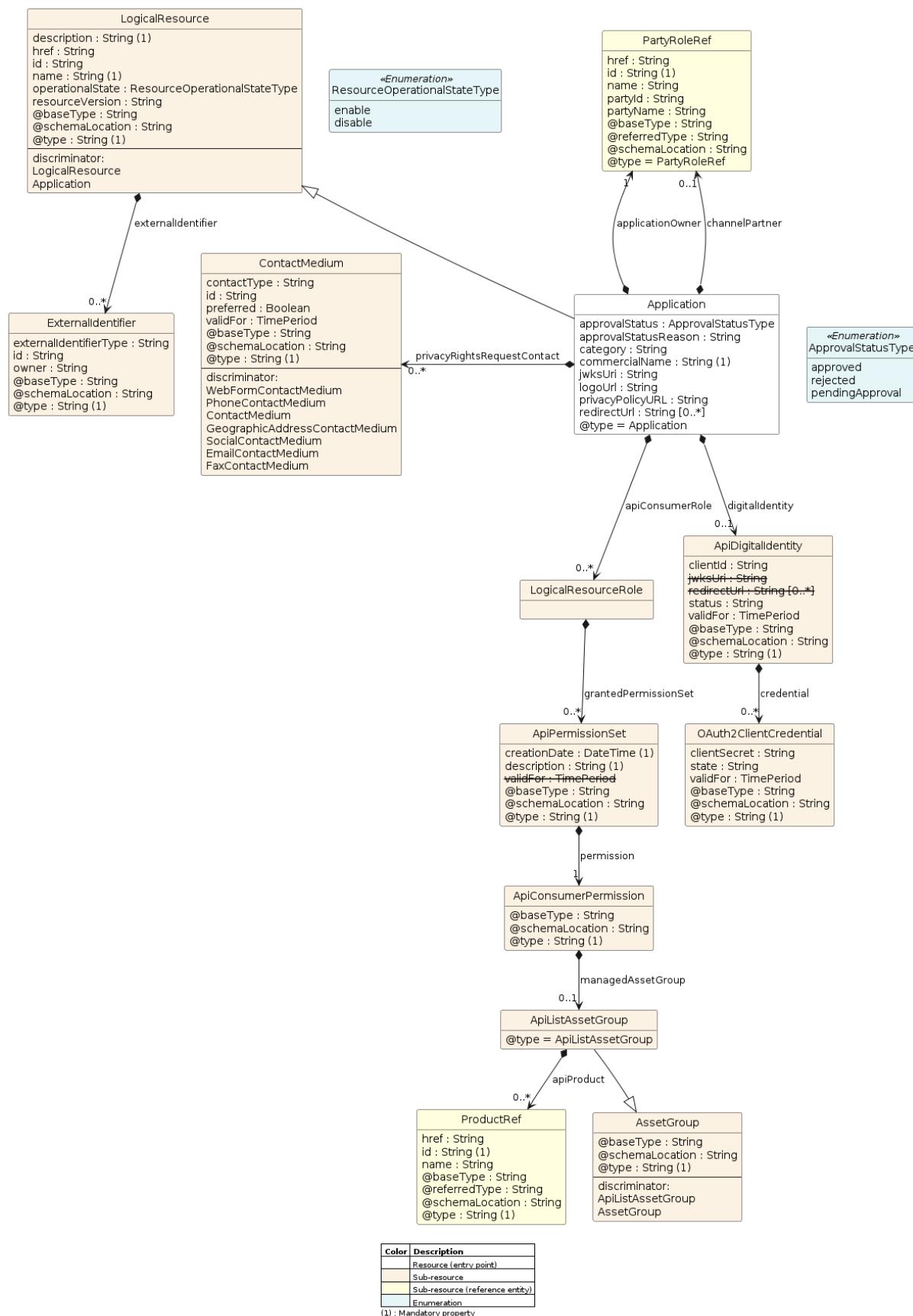


Figure 5 - Application

## Field descriptions

## Application fields

apiConsumerRole	A LogicalResourceRole. Logic Resource Role.
applicationOwner	A PartyRoleRef. Party role reference. A party role represents the part played by a party in a given context.
approvalStatus	An ApprovalStatusType. Valid values for an approvalStatus in the context of an approval process. ENUMERATED with values: * pendingApproval * approved * rejected
approvalStatusReason	A String. The reason why the approval status changed. DEPRECATED in the PATCH (bug to be fixed on next major version).
category	A String. The category of the Application. Possible values are described in ApplicationCategoryType schema.
channelPartner	A PartyRoleRef. Party role reference. A party role represents the part played by a party in a given context.
commercialName	A String. Exact name of the Application as marketed (and known by the end-user).
description	A String. Free-text description of the resource.
digitalIdentity	An ApiDigitalIdentity. ApiDigitalIdentity is a class that allow to describe a digital identity for an individual or a resource or a specific party role. One of these three MUST be provided. If an individual is provided, this identity will be for all her/his partyRole. To avoid confusion it is recommended in this case to not provide partyRoleIdentified. DEPRECATED in the POST and PATCH, this attribute can't be valued by the API consumer in this context.
externalIdentifier	An ExternalIdentifier. An identification of an entity that is owned by or originates in a software system different from the current system, for example a ProductOrder handed off from a commerce platform into an order handling system. The structure identifies the system itself, the nature of the entity within the system (e.g. class name) and the unique ID of the entity within the system. It is anticipated that multiple external IDs can be held for a single entity, e.g. if the entity passed through multiple systems on the way to the current system. In this case the consumer is expected to sequence the IDs in the array in reverse order of provenance, i.e. most recent system first in the list.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
jwksUri	A String. JSON Web Key (JWK) is a data structure that represents a cryptographic key.
logoUrl	A String. Url to retrieve the Application official logo.
name	A String. The name of the resource.

operationalState	A ResourceOperationalStateType. ResourceOperationalStateType enumerations; values defined by ITU X.731: 'disable': The resource is totally inoperable and unable to provide service to the user(s); 'enable': The resource is partially or fully operable and available for use. ENUMERATED with values: * enable * disable
privacyPolicyURL	A String. Url to Application privacy policy, if applicable.
privacyRightsRequestContact	A ContactMedium. Indicates the contact medium that could be used to contact the party. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : EmailContactMedium, FaxContactMedium, PhoneContactMedium, GeographicAddressContactMedium, SocialMediaContactMedium...  ContactMedium can be instanciated as * EmailContactMedium * FaxContactMedium * GeographicAddressContactMedium * PhoneContactMedium * SocialContactMedium * WebFormContactMedium
redirectUrl	A String. After a user successfully authorizes an application, the authorization server will redirect the user back to the application.
resourceVersion	A String. A field that identifies the specific version of an instance of a resource.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### LogicalResourceRole sub-resource fields

grantedPermissionSet	An ApiPermissionSet. The PermissionSet is a set of Permissions granted to a user (party, party role or resource). The set may be granted explicitly by an authorized user or may be acquired implicitly due to the role that the user is playing.
----------------------	---

### ContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.

validFor	A TimePeriod. A period of time, either as a deadline (endTime only) a startTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	ContactMedium can be instantiated as * EmailContactMedium * FaxContactMedium * GeographicAddressContactMedium * PhoneContactMedium * SocialContactMedium * WebFormContactMedium
city	This property is present in subclasses
country	This property is present in subclasses
emailAddress	This property is present in subclasses
faxNumber	This property is present in subclasses
geographicAddress	This property is present in subclasses
phoneNumber	This property is present in subclasses
postCode	This property is present in subclasses
socialNetworkId	This property is present in subclasses
stateOrProvince	This property is present in subclasses
street1	This property is present in subclasses
street2	This property is present in subclasses
url	This property is present in subclasses

### WebFormContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
url	A String. Url of the web form.
validFor	A TimePeriod. A period of time, either as a deadline (endTime only) a startTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.

@type	A String. When sub-classing, this defines the sub-class Extensible name.
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### PhoneContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
phoneNumber	A String. The phone number of the contact.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### GeographicAddressContactMedium sub-resource fields

city	A String. The city.
contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
country	A String. The country.
geographicAddress	A GeographicAddressRef. Reference to a Geographic Address.
id	A String. Identifier for this contact medium.
postCode	A String. Postcode.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
stateOrProvince	A String. State or province.
street1	A String. Describes the street.
street2	A String. Complementary street description.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### SocialContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
socialNetworkId	A String. Identifier as a member of a social network.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### EmailContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
emailAddress	A String. Full email address in standard format.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### FaxContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
faxNumber	A String. The fax number of the contact.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.

@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiDigitalidentity sub-resource fields

clientId	A String. OAuth2 Client ID: A public identifier for apps. Even though it is public, it is best that it is not guessable by third parties, so many implementations use something like a 32-character hex string. DEPRECATED in the POST and the PATCH, this attribute can't be valued by the API consumer in this context.
credential	An OAuth2ClientCredential. OAuth2ClientCredential describes the registration attributes in an OAuth registration process.
jwksUri	DEPRECATED A String. DEPRECATED : moved to Application schema. JSON Web Key (JWK) is a data structure that represents a cryptographic key.
redirectUrl	DEPRECATED A String. DEPRECATED : moved to Application schema. After a user successfully authorizes an application, the authorization server will redirect the user back to the application.
status	A String. Used to indicate the current lifecycle status of this digital identity (unknown, active, suspended, archived).
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRoleRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
partyId	A String. The identifier of the engaged party that is linked to the PartyRole object.
partyName	A String. The name of the engaged party that is linked to the PartyRole object.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.

@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiPermissionSet sub-resource fields

creationDate	A DateTime. Date when the PermissionSet was created and assigned to a user.
description	A String. Text describing the permission set.
permission	An ApiConsumerPermission. A ApiConsumerPermission allows an Application to consume a API.
<del>validFor</del>	DEPRECATED A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiConsumerPermission sub-resource fields

managedAssetGroup	An ApiListAssetGroup. Defines a group of API assets to which access can be controlled.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiListAssetGroup sub-resource fields

apiProduct	A ProductRef. A Product reference.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### AssetGroup sub-resource fields

@baseType	A String. When sub-classing, this defines the super-class.
-----------	--

@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	AssetGroup can be instantiated as * ApiListAssetGroup
apiProduct	This property is present in subclasses

### ProductRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### GeographicAddressRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### OAuth2ClientCredential sub-resource fields

clientSecret	A String. ClientSecret.
state	A String. Used to indicate the current lifecycle state of this credential (like active, inactive, expired).
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.

@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### LogicalResource sub-resource fields

description	A String. Free-text description of the resource.
externalIdentifier	An ExternalIdentifier. An identification of an entity that is owned by or originates in a software system different from the current system, for example a ProductOrder handed off from a commerce platform into an order handling system. The structure identifies the system itself, the nature of the entity within the system (e.g. class name) and the unique ID of the entity within the system. It is anticipated that multiple external IDs can be held for a single entity, e.g. if the entity passed through multiple systems on the way to the current system. In this case the consumer is expected to sequence the IDs in the array in reverse order of provenance, i.e. most recent system first in the list.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. The name of the resource.
operationalState	A ResourceOperationalStateType. ResourceOperationalStateType enumerations; values defined by ITU X.731: 'disable': The resource is totally inoperable and unable to provide service to the user(s); 'enable': The resource is partially or fully operable and available for use. ENUMERATED with values: * enable * disable
resourceVersion	A String. A field that identifies the specific version of an instance of a resource.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	LogicalResource can be instantiated as * Application
apiConsumerRole	This property is present in subclasses
applicationOwner	This property is present in subclasses
approvalStatus	This property is present in subclasses
approvalStatusReason	This property is present in subclasses
category	This property is present in subclasses
channelPartner	This property is present in subclasses

commercialName	This property is present in subclasses
digitalIdentity	This property is present in subclasses
jwksUri	This property is present in subclasses
logoUrl	This property is present in subclasses
privacyPolicyURL	This property is present in subclasses
privacyRightsRequestContact	This property is present in subclasses
redirectUrl	This property is present in subclasses

### Json representation sample(s)

We provide below a JSON representation as example of the 'Application' resource object.

```
{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "id": "102",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/102",
    "name": "Evolve West",
    "commercialName": "Evolve West",
    "description": "Evolve West mobile application",
    "redirectUrl": [
        "https://evolvequest.com/redirect"
    ],
    "jwksUri": "https://evolvequest.com/jwk",
    "category": "games",
    "operationalState": "enable",
    "approvalStatus": "approved",
    "digitalIdentity": {
        "@type": "ApiDigitalIdentity",
        "clientId": "evolve_quest_channelPartner15"
    },
    "apiConsumerRole": [
        {
            "@type": "LogicalResourceRole",
            "@baseType": "EntityRole",
            "name": "Evolve Quest application API consumer",
            "grantedPermissionSet": [
                {
                    "@type": "ApiPermissionSet",
                    "@baseType": "PermissionSet",
                    "creationDate": "2023-10-21T23:20:50.52Z",
                    "permission": {
                        "@type": "ApiConsumerPermission",
                        "@baseType": "Permission",
                        "managedAssetGroup": {
                            "@type": "ApiListAssetGroup",
                            "@baseType": "AssetGroup",
                            "apiProduct": [
                                {
                                    "@type": "ProductRef",
                                    "id": "123"
                                }
                            ]
                        }
                    }
                }
            ]
        }
    ]
}
```

```
        }
    ]
}
],
"applicationOwner": {
    "@type": "PartyRoleRef",
    "id": "31"
},
"privacyRightsRequestContact": [
{
    "@type": "WebFormContactMedium",
    "id": "1",
    "preferred": false,
    "contactType": "contact web form",
    "validFor": {
        "startDateTime": "2024-04-12T23:20:50.52Z",
        "endDateTime": "2026-04-12T23:20:50.52Z"
    },
    "url": "https://contact.evolvequest.com"
},
{
    "@type": "EmailContactMedium",
    "id": "2",
    "preferred": true,
    "contactType": "corporate email",
    "validFor": {
        "startDateTime": "2020-04-12T23:20:50.52Z",
        "endDateTime": "2028-04-12T23:20:50.52Z"
    },
    "emailAddress": "contact@evolvequest.com"
}],
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
```

## ApplicationOwner resource

Application Owner. Application Owner represents the legal representative of the organization in a given context.

### Resource model

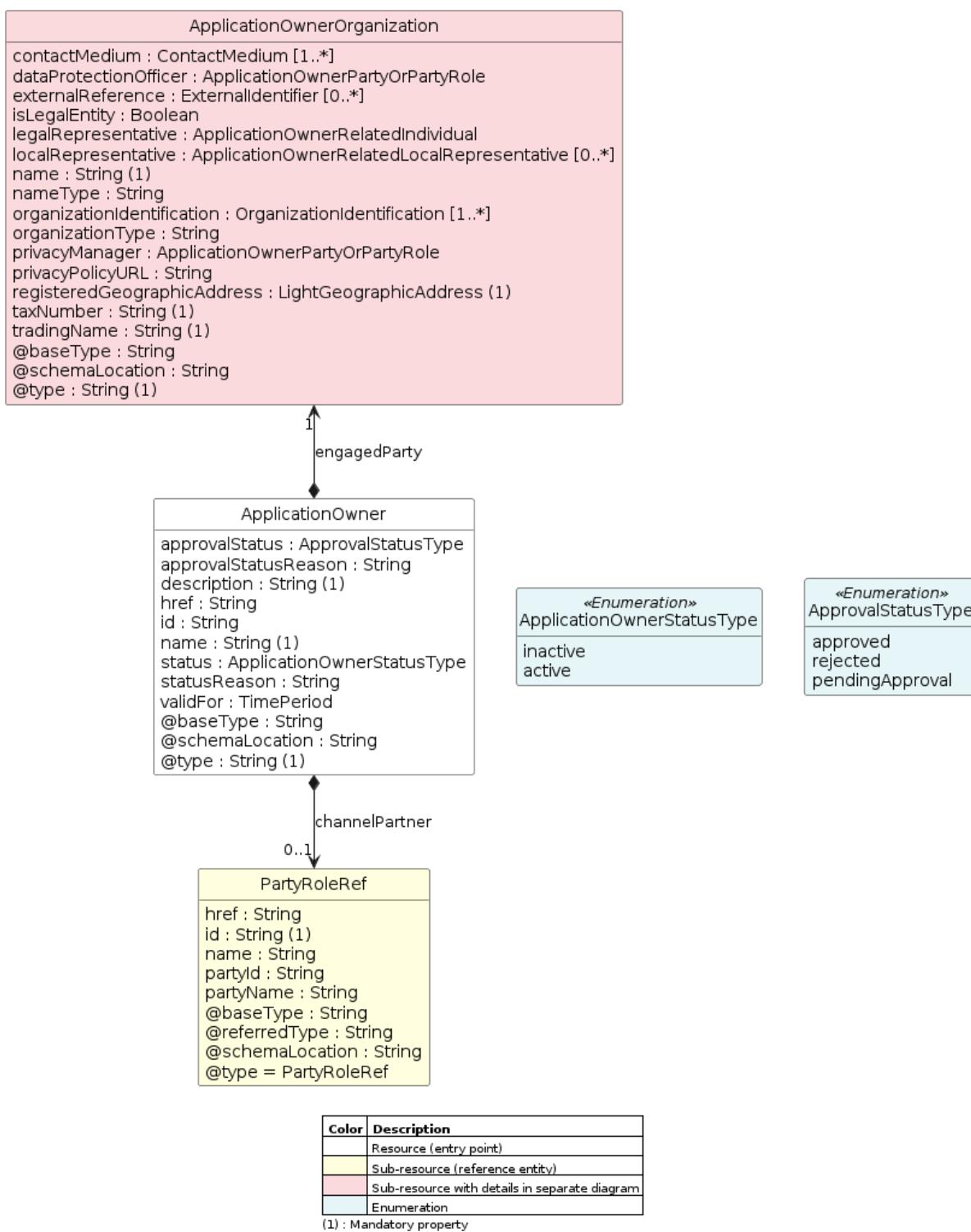


Figure 6 - ApplicationOwner

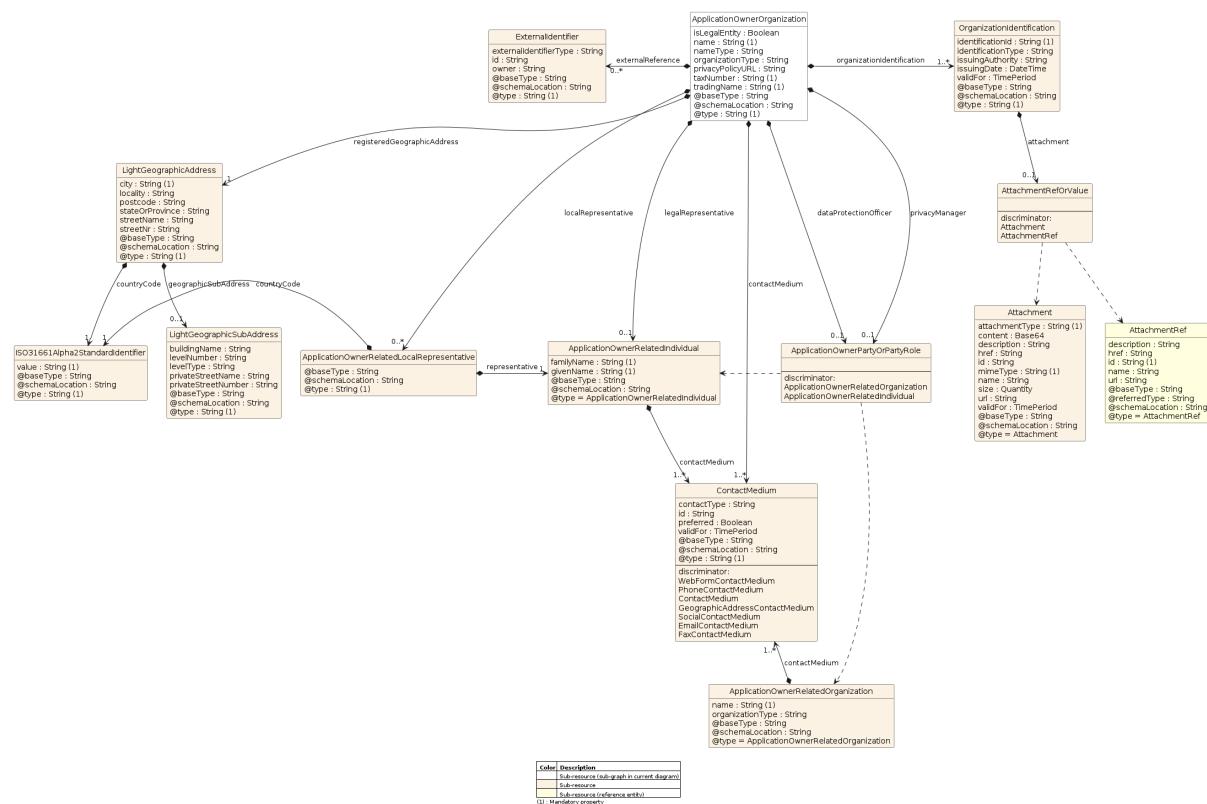


Figure 7 - ApplicationOwnerOrganization

## Field descriptions

### ApplicationOwner fields

approvalStatus	An ApprovalStatusType. Valid values for an approvalStatus in the context of an approval process. ENUMERATED with values: * pendingApproval * approved * rejected
approvalStatusReason	A String. The reason why the approval status changed.
channelPartner	A PartyRoleRef. Party role reference. A party role represents the part played by a party in a given context.
description	A String. A description of the ApplicationOwner.
engagedParty	An ApplicationOwnerOrganization. Application Organization represents a group of people identified by shared interests or purpose. Examples include business, department and enterprise. Because of the complex nature of many businesses, both organizations and organization units are represented by the same data.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. A word, term, or phrase by which the ApplicationOwner is known and distinguished from other PartyRoles. It's the name of the ApplicationOwner unique entity.

status	An ApplicationOwnerStatusType. Used to track the lifecycle status of the ApplicationOwner in Channel Partner IT. So this attribute is allowed to be contributed by the Channel Partner and patchable.. ENUMERATED with values: * active * inactive
statusReason	A String. A string providing an explanation on the value of the status lifecycle. For instance if the status is Rejected, statusReason will provide the reason for rejection.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApplicationOwnerOrganization sub-resource fields

contactMedium	<p>A ContactMedium. Indicates the contact medium that could be used to contact the party. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : EmailContactMedium, FaxContactMedium, PhoneContactMedium, GeographicAddressContactMedium, SocialMediaContactMedium...</p> <p>ContactMedium can be instantiated as</p> <ul style="list-style-type: none"> <li>* EmailContactMedium</li> <li>* FaxContactMedium</li> <li>* GeographicAddressContactMedium</li> <li>* PhoneContactMedium</li> <li>* SocialContactMedium</li> <li>* WebFormContactMedium</li> </ul>
dataProtectionOfficer	An ApplicationOwnerPartyOrPartyRole.
externalReference	An ExternalIdentifier. An identification of an entity that is owned by or originates in a software system different from the current system, for example a ProductOrder handed off from a commerce platform into an order handling system. The structure identifies the system itself, the nature of the entity within the system (e.g. class name) and the unique ID of the entity within the system. It is anticipated that multiple external IDs can be held for a single entity, e.g. if the entity passed through multiple systems on the way to the current system. In this case the consumer is expected to sequence the IDs in the array in reverse order of provenance, i.e. most recent system first in the list.
isLegalEntity	A Boolean. If value is true, the organization is a legal entity known by a national referential.

legalRepresentative	An ApplicationOwnerRelatedIndividual. ApplicationOwnerRelatedIndividual represents a single human being (a man, woman or child). The individual can be a customer, an employee or any other person that the organization needs to store information about.
localRepresentative	An ApplicationOwnerRelatedLocalRepresentative. ApplicationOwnerRelatedLocalRepresentative represents a Party representing the Organization within a geographic localization.
name	A String. Organization name (department name for example).
nameType	A String. Type of the name : Co, Inc, Ltd, etc.
organizationIdentification	An OrganizationIdentification. Represents our registration of information used as proof of identity by an organization.
organizationType	A String. Type of Organization. Value must be one of the W3C list: <a href="https://www.w3.org/community/reports/dpvcg/CG-FINAL-dpvcg-20221205/#vocab-entities-organisation">https://www.w3.org/community/reports/dpvcg/CG-FINAL-dpvcg-20221205/#vocab-entities-organisation</a> . All the possibilities are defined on OrganizationType. Examples: "AcademicScientificOrganisation" "ForProfitOrganisation" "GovernmentalOrganisation" "IndustryConsortium" "InternationalOrganisation" "NonGovernmentalOrganisation" "NonProfitOrganisation" "Organisation" "OrganisationUnit".
privacyManager	An ApplicationOwnerPartyOrPartyRole.
privacyPolicyURL	A String. Url to privacy policy.
registeredGeographicAddress	A LightGeographicAddress. Structured textual way of describing how to find a Property in an urban area (country properties are often defined differently). Note : Address corresponds to SID UrbanPropertyAddress.
taxNumber	A String. Tax number of the Organization in the country.
tradingName	A String. Name that the organization (unit) trades under.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRoleRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
partyId	A String. The identifier of the engaged party that is linked to the PartyRole object.
partyName	A String. The name of the engaged party that is linked to the PartyRole object.
@baseType	A String. When sub-classing, this defines the super-class.

@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	ContactMedium can be instanciated as * EmailContactMedium * FaxContactMedium * GeographicAddressContactMedium * PhoneContactMedium * SocialContactMedium * WebFormContactMedium
city	This property is present in subclasses
country	This property is present in subclasses
emailAddress	This property is present in subclasses
faxNumber	This property is present in subclasses
geographicAddress	This property is present in subclasses
phoneNumber	This property is present in subclasses
postCode	This property is present in subclasses
socialNetworkId	This property is present in subclasses
stateOrProvince	This property is present in subclasses
street1	This property is present in subclasses
street2	This property is present in subclasses
url	This property is present in subclasses

### WebFormContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
url	A String. Url of the web form.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PhoneContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
phoneNumber	A String. The phone number of the contact.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### GeographicAddressContactMedium sub-resource fields

city	A String. The city.
contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
country	A String. The country.
geographicAddress	A GeographicAddressRef. Reference to a Geographic Address.
id	A String. Identifier for this contact medium.
postCode	A String. Postcode.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
stateOrProvince	A String. State or province.

street1	A String. Describes the street.
street2	A String. Complementary street description.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### SocialContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
socialNetworkId	A String. Identifier as a member of a social network.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### EmailContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
emailAddress	A String. Full email address in standard format.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### FaxContactMedium sub-resource fields

contactType	A String. Type of the contact medium to qualify it like pro email / personal email. This is not used to define the contact medium used.
faxNumber	A String. The fax number of the contact.
id	A String. Identifier for this contact medium.
preferred	A Boolean. If true, indicates that is the preferred contact medium.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApplicationOwnerRelatedLocalRepresentative sub-resource fields

countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.
representative	An ApplicationOwnerRelatedIndividual. ApplicationOwnerRelatedIndividual represents a single human being (a man, woman or child). The individual can be a customer, an employee or any other person that the organization needs to store information about.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### OrganizationIdentification sub-resource fields

attachment	An AttachmentRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Attachment entity and not the AttachmentRefOrValue class itself.
identificationId	A String. Identifier.
identificationType	A String. Type of identification information used to identify the company in a country or internationally.
issuingAuthority	A String. Authority which has issued the identifier (chamber of commerce...).
issuingDate	A DateTime. Date at which the identifier was issued.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.

@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApplicationOwnerRelatedOrganization sub-resource fields

contactMedium	<p>A ContactMedium. Indicates the contact medium that could be used to contact the party. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : EmailContactMedium, FaxContactMedium, PhoneContactMedium, GeographicAddressContactMedium, SocialMediaContactMedium...</p> <p>ContactMedium can be instanciated as</p> <ul style="list-style-type: none"> <li>* EmailContactMedium</li> <li>* FaxContactMedium</li> <li>* GeographicAddressContactMedium</li> <li>* PhoneContactMedium</li> <li>* SocialContactMedium</li> <li>* WebFormContactMedium</li> </ul>
name	A String. Organization name (department name for example).
organizationType	A String. Type of Organization. Value must be one of the W3C list: <a href="https://www.w3.org/community/reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-entities-organisation">https://www.w3.org/community/reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-entities-organisation</a> . All the possibilities are defined on OrganizationType. Examples: "AcademicScientificOrganisation" "ForProfitOrganisation" "GovernmentalOrganisation" "IndustryConsortium" "InternationalOrganisation" "NonGovernmentalOrganisation" "NonProfitOrganisation" "Organisation" "OrganisationUnit".
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApplicationOwnerRelatedIndividual sub-resource fields

contactMedium	A ContactMedium. Indicates the contact medium that could be used to contact the party. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : EmailContactMedium, FaxContactMedium, PhoneContactMedium, GeographicAddressContactMedium, SocialMediaContactMedium...  ContactMedium can be instantiated as <ul style="list-style-type: none"><li>* EmailContactMedium</li><li>* FaxContactMedium</li><li>* GeographicAddressContactMedium</li><li>* PhoneContactMedium</li><li>* SocialContactMedium</li><li>* WebFormContactMedium</li></ul>
familyName	A String. Contains the non-chosen or inherited name. Also known as last name in the Western context.
givenName	A String. First name of the individual.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ExternalIdentifier sub-resource fields

externalIdentifierType	A String. Type of the identification, typically would be the type of the entity within the external system.
id	A String. Identification of the entity within the external system.
owner	A String. Name of the external system that owns the entity.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### LightGeographicAddress sub-resource fields

city	A String. City that the address is in.
countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.

geographicSubAddress	A LightGeographicSubAddress. Representation of a GeographicSubAddress It is used for addressing within a property in an urban area (country properties are often defined differently). It may refer to a building, a building cluster, or a floor of a multistory building.
locality	A String. An area of defined or undefined boundaries within a local authority or other legislatively defined area, usually rural or semi rural in nature, or a suburb, a bounded locality within a city, town or shire principally of urban character.
postcode	A String. Descriptor for a postal delivery area, used to speed and simplify the delivery of mail (also known as zipcode).
stateOrProvince	A String. The State or Province that the address is in.
streetName	A String. Name of the street.
streetNr	A String. Number identifying a specific property on a public street.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### GeographicAddressRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ISO31661Alpha2StandardIdentifier sub-resource fields

value	A String. The value of the resource in the ISO 3166-1 Alpha 2 standard.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

## Attachment sub-resource fields

attachmentType	A String. A business characterization of the purpose of the attachment, for example logo, instructionManual, contractCopy.
content	A Base64. The actual contents of the attachment object, if embedded, encoded as base64.
description	A String. A narrative text describing the content of the attachment.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
contentType	A String. A technical characterization of the attachment content format using IETF Mime Types.
name	A String. The name of the attachment.
size	A Quantity. An amount in a given unit.
url	A String. Uniform Resource Locator, is a web page address (a subset of URI).
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

## AttachmentRef sub-resource fields

description	A String. A narrative text describing the content of the attachment.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
url	A String. Link to the attachment media/content.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

## LightGeographicSubAddress sub-resource fields

buildingName	A String. Allows for buildings that have well-known names.
levelNumber	A String. Used where a level type may be repeated e.g. BASEMENT 1, BASEMENT 2.
levelType	A String. Describes level types within a building.
privateStreetName	A String. Private streets internal to a property (e.g. a university) may have internal names that are not recorded by the land title office.
privateStreetNumber	A String. Private streets numbers internal to a private street.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### Json representation sample(s)

We provide below a JSON representation as example of the 'ApplicationOwner' resource object.

```
{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games SA",
        "tradingName": "Funtastic Games",
        "isLegalEntity": true,
        "organizationType": "ForProfitOrganisation",
        "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
        "taxNumber": "00.623.904/0001-73",
        "organizationIdentification": [
            {
                "@type": "OrganizationIdentification",
                "identificationType": "CNPJ",
                "identificationId": "00.623.904/0001-73",
                "issuingAuthority": "Receita Federal"
            }
        ],
        "externalReference": [
            {
                "@type": "ExternalReference",
                "id": "funtastic_games_asp",
                "externalReferenceType": "organization name in channel partner IT"
            }
        ],
        "registeredGeographicAddress": {
            "@type": "LightGeographicAddress",
            "@baseType": "GeographicAddress",
            "id": "funtastic_games_asp"
        }
    }
}
```

```
        "streetNr": "123",
        "streetName": "Avenida Paulista",
        "locality": "Para?so",
        "city": "S?o Paulo",
        "stateOrProvince": "S?o Paulo",
        "countryCode": {
            "@type": "ISO31661Alpha2StandardIdentifier",
            "@baseType": "StandardIdentifier",
            "value": "BR"
        },
        "postcode": "01311-000",
        "geographicSubAddress": [
            {
                "@type": "LightGeographicSubAddress",
                "@baseType": "GeographicSubAddress",
                "buildingName": "Fogo",
                "levelNumber": "Planta 4"
            }
        ],
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "emailAddress": "contact@funtasticgames.com"
            }
        ],
        "legalRepresentative": {
            "@type": "ApplicationOwnerRelatedIndividual",
            "familyName": "OConnor",
            "givenName": "Jane",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "jane@funtasticgames.com"
                }
            ]
        },
        "dataProtectionOfficer": {
            "@type": "ApplicationOwnerRelatedOrganization",
            "name": "DPO Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "dpo@funtasticgames.com"
                }
            ]
        },
        "privacyManager": {
            "@type": "ApplicationOwnerRelatedOrganization",
            "name": "Privacy Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",

```

```

        "preferred": true,
        "contactType": "email",
        "emailAddress": "privacy@funtasticgames.com"
    }
]
},
"localRepresentative": [
    "@type": "ApplicationOwnerRelatedLocalRepresentative",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "value": "EU"
    },
    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Garc?a",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "jgarcia",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jgarcia@funtasticgames.com"
            }
        ]
    }
],
"dataProtectionRights": {
    "@type": "ApplicationOwnerRelatedOrganization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
},
"status": "inactive",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}

```

## Monitor resource

Monitoring of resources.

## Resource model

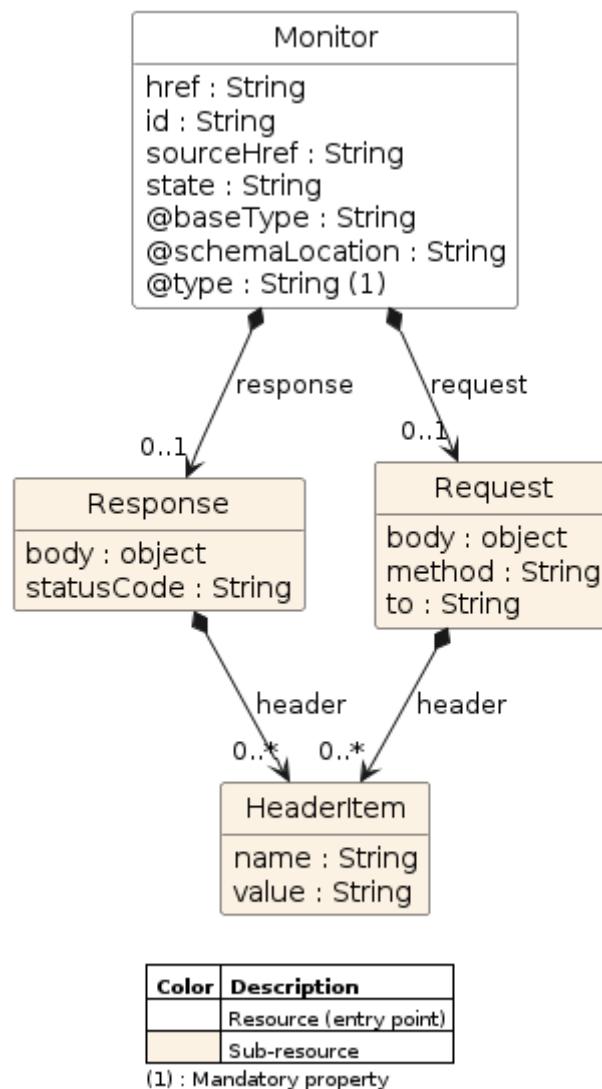


Figure 8 - Monitor

## Field descriptions

### Monitor fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
request	A Request. A response to a request.
response	A Response. A response to a request.
sourceHref	A String. The monitored resource href.
state	A String. The Monitor state of the resource. InProgress, InError, Completed.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.

<code>@type</code>	A String. When sub-classing, this defines the sub-class Extensible name.
--------------------	--

### Response sub-resource fields

<code>body</code>	An object. The body of the response. For example for an HTTP response might contain HTML for rendering.
<code>header</code>	A HeaderItem. Items included in the header of the response. For example for an HTTP response might contain negotiated locale.
<code>statusCode</code>	A String. The status of the response. For example for an HTTP response would be codes such as 200, 400, etc.

### Request sub-resource fields

<code>body</code>	An object. The body of the request. For example for an HTTP request might contain content of a form .
<code>header</code>	A HeaderItem. Items included in the header of the request. For example for an HTTP request might contain requested locale, basic authentication.
<code>method</code>	A String. The protocol of the request, e.g. http.
<code>to</code>	A String. The target of the request, e.g. a URL for an HTTP request.

### HeaderItem sub-resource fields

<code>name</code>	A String. The name of the header item, e.g. locale.
<code>value</code>	A String. The value of the header item, e.g. en-us.

### Json representation sample(s)

We provide below a JSON representation as example of the 'Monitor' resource object.

```
{
  "@type": "Monitor",
  "id": "987654",
  "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987654",
  "state": "Completed",
  "request": {
    "method": "POST",
    "to": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/application",
    "body": {
      "@type": "Application",
      "@baseType": "LogicalResource",
      "name": "Evolve Quest",
      "commercialName": "Evolve Quest",
      "description": "Evolve Quest mobile application",
      "redirectUrl": [
        "https://evolvequest.com/redirect"
      ],
      "jwksUri": "https://evolvequest.com/jwk",
      "category": "games",
    }
  }
}
```

```

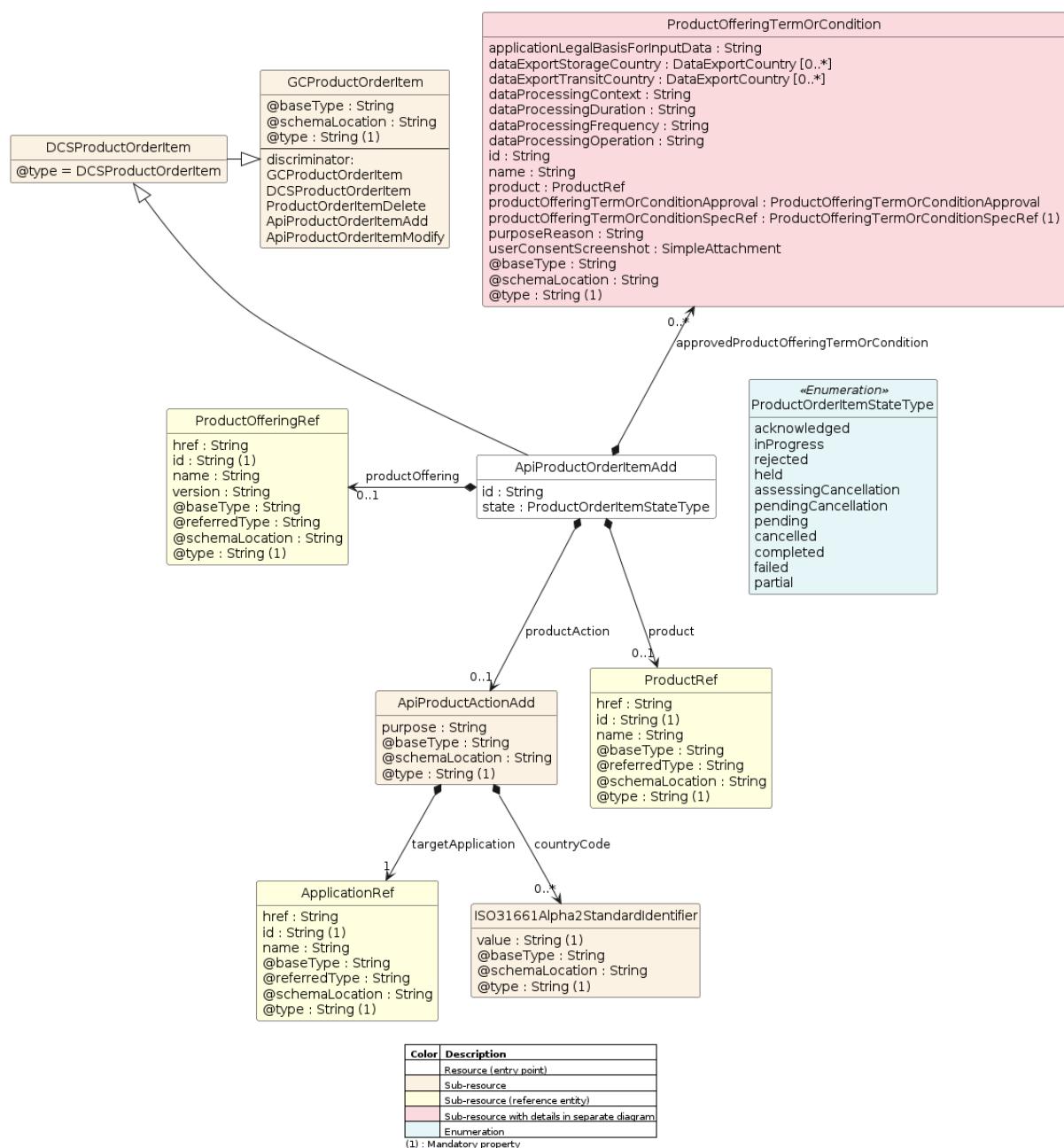
        "operationalState": "enable",
        "digitalIdentity": {
            "@type": "ApiDigitalIdentity",
            "clientId": "evolve_quest_channelPartner15"
        },
        "applicationOwner": {
            "@type": "PartyRoleRef",
            "id": "31"
        }
    },
    "response": {
        "statusCode": "201",
        "body": {
            "@type": "Application",
            "@baseType": "LogicalResource",
            "id": "101",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
            "name": "Evolve Quest",
            "commercialName": "Evolve Quest",
            "description": "Evolve Quest mobile application",
            "redirectUrl": [
                "https://evolvequest.com/redirect"
            ],
            "jwksUri": "https://evolvequest.com/jwk",
            "category": "games",
            "operationalState": "enable",
            "approvalStatus": "approved",
            "digitalIdentity": {
                "@type": "ApiDigitalIdentity",
                "clientId": "evolve_quest_channelPartner15"
            },
            "applicationOwner": {
                "@type": "PartyRoleRef",
                "id": "31"
            },
            "channelPartner": {
                "@type": "PartyRoleRef",
                "id": "15"
            }
        },
        "sourceHref": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101"
    }
}

```

## ApiProductOrderItemAdd resource

An ApiProductOrderItemAdd is a specialization of a ProductOrderItem, for GSMA Open GW context for action to add a product. An identified part of the order. A product order is decomposed into one or more order items.

### Resource model

Figure 9 - `ApiProductOrderItemAdd`

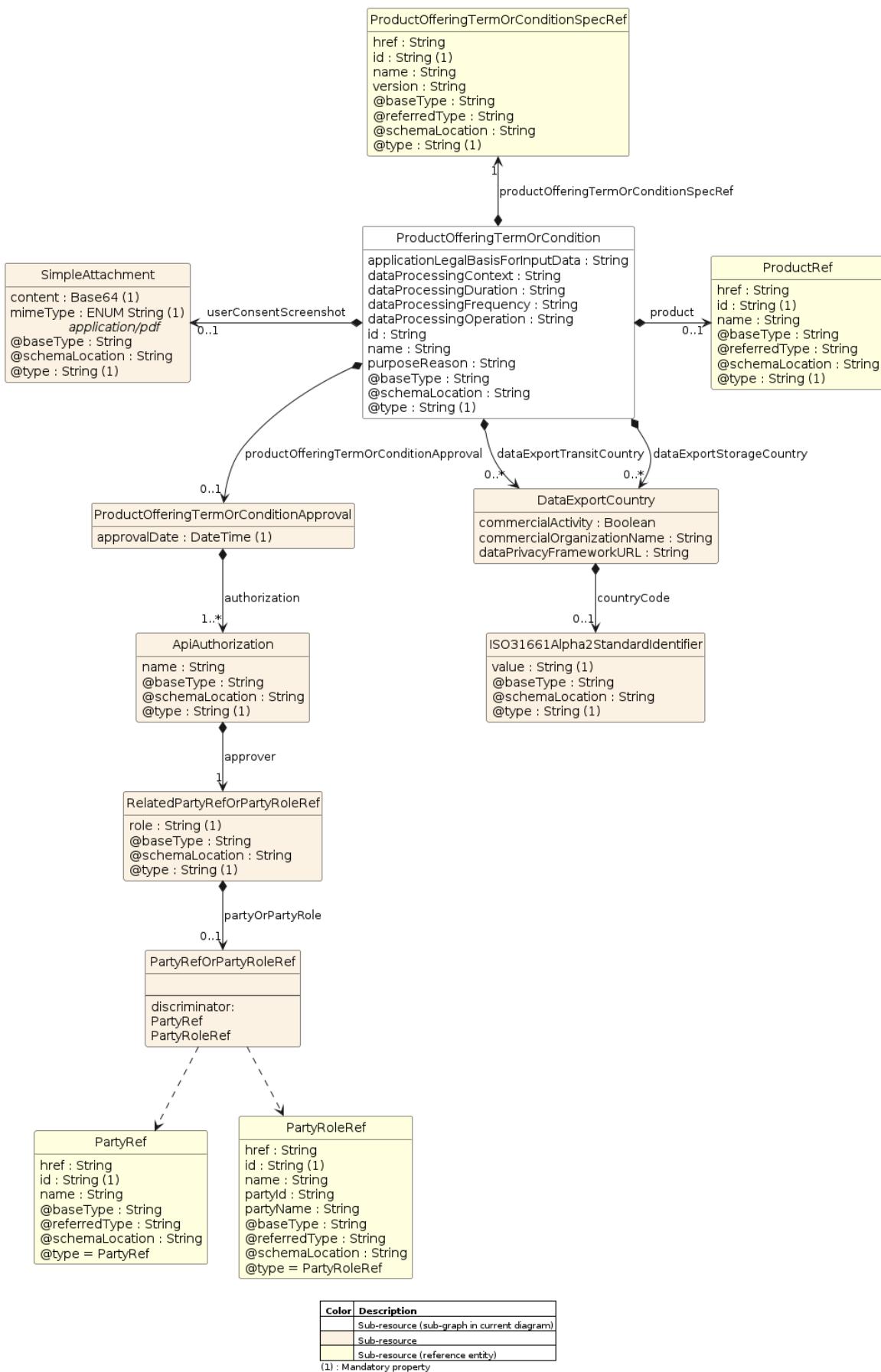
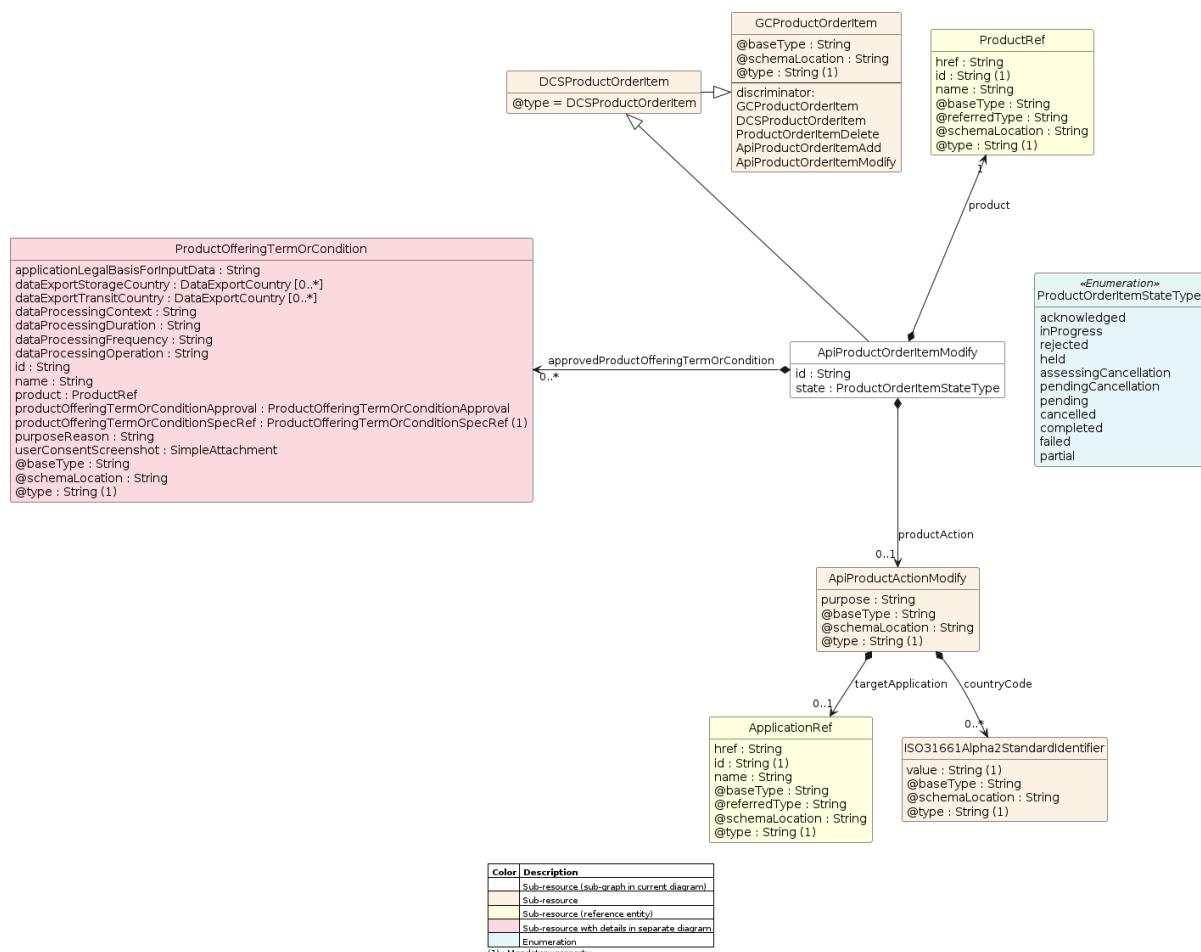


Figure 10 - ProductOfferingTermOrCondition

Figure 11 - `ApiProductOrderItemModify`

## Field descriptions

### ApiProductOrderItemAdd fields

approvedProductOfferingTermOrCondition	A <code>ProductOfferingTermOrCondition</code> . Approved Terms or Conditions of the <code>ProductOffering</code> .
id	A String. Identifier of the <code>ProductOrder</code> item (generally it is a sequence number 01, 02, 03, ...).
product	A <code>ProductRef</code> . A Product reference.
productAction	An <code>ApiProductActionAdd</code> . An <code>ApiProductActionAdd</code> is a specialization of a <code>ProductAction</code> , for GSMA Open GW context for action to add a product.
productOffering	A <code>ProductOfferingRef</code> . <code>ProductOffering</code> reference. A product offering represents entities that are orderable from the provider of the catalog, this resource includes pricing information.

state	A ProductOrderItemStateType. Possible values for the state of the product order item. ENUMERATED with values: * acknowledged * rejected * pending * held * inProgress * cancelled * completed * failed * partial * assessingCancellation * pendingCancellation
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
version	A String. Version of the product offering.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiProductActionAdd sub-resource fields

countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.
-------------	---

purpose	A String. Purpose for the use of the API. Value must be one of the W3C list : <a href="https://w3c.github.io/cg-reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-purpose">https://w3c.github.io/cg-reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-purpose</a> , as stated in the API ProductSpecification. All the possibilities are defined on ApiPurposeType. Examples: "AcademicResearch" "AccountManagement" "Advertising" "AntiTerrorismOperations" "CommercialResearch" "CommunicationForCustomerCare" "CommunicationManagement" "CounterMoneyLaundering" "CreditChecking" "CustomerCare" ...
targetApplication	An ApplicationRef. Reference to an Application.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingTermOrCondition sub-resource fields

applicationLegalBasisForInputData	A String. One or several legal basis for product order use. For instance, it applies on personal data that is contained in the Application API call (body, query param, header, ...). Value that should be used are defined in DpvLegalBasisType. Examples as given by W3C: "Consent" "LegitimateInterest" "DataTransferLegalBasis" "LegalObligation" "PublicInterest" "VitalInterest" "OfficialAuthorityOfController".
dataExportStorageCountry	A DataExportCountry. This schema permits to declare the countries and context where some data has been stored or has transited.
dataExportTransitCountry	A DataExportCountry. This schema permits to declare the countries and context where some data has been stored or has transited.
dataProcessingContext	A String. Context classes of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvContextClassesType.
dataProcessingDuration	A String. Duration of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvDurationType.
dataProcessingFrequency	A String. Frequency of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvFrequencyType.
dataProcessingOperation	A String. Operations of the data processing of the API. Value should be one of the enumerated string defined in the schema DpvProcessingOperationType.
id	A String. Identifier of the ProductOfferingTermOrCondition.
name	A String. Identifier of the ProductOfferingTermOrCondition.
product	A ProductRef. A Product reference.

productOfferingTermOrConditionApproval	A ProductOfferingTermOrConditionApproval. Approval entity for the ProductOfferingTermOrCondition. Exists when Terms or Conditions are approved.
productOfferingTermOrConditionSpecRef	A ProductOfferingTermOrConditionSpecRef. Reference to the ProductOfferingTermOrCondition specification.
purposeReason	A String. Explain the reason justifying the purpose, indicating specifically which is the reason why the API is employed as part of the application's use case.
userConsentScreenshot	A SimpleAttachment. Complements the description of an element (for instance a product) through video, pictures...
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ApplicationRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ISO31661Alpha2StandardIdentifier sub-resource fields

value	A String. The value of the resource in the ISO 3166-1 Alpha 2 standard.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingTermOrConditionApproval sub-resource fields

approvalDate	A DateTime. Date of the approval.
authorization	DEPRECATED An ApiAuthorization. DEPRECATED not possible yet to have the ID of the individual that made the approval.

### SimpleAttachment sub-resource fields

content	A Base64. The actual contents of the attachment object, if embedded, encoded as base64.
contentType	A String. A technical characterization of the attachment content format using IETF Mime Types. ENUMERATED with values: * application/pdf
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### ProductOfferingTermOrConditionSpecRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
version	A String. Version of the ProductOfferingTermOrCondition specification.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### DataExportCountry sub-resource fields

commercialActivity	A Boolean. Flag to indicate if commercial activity applies to these data management.
commercialOrganizationName	A String. Organization who is managing the data.
countryCode	An ISO31661Alpha2StandardIdentifier. The corresponding identification of the resource in different standard, regulatory definitions. The standard specification identifier (e.g., ISO 3166-1 Alpha-2) and the corresponding value (e.g., BE) relevant to a particular resource.
dataPrivacyFrameworkURL	A String. URL to the organization or governmental data privacy framework if applies.

### ApiAuthorization sub-resource fields

approver	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
name	A String. Name of the required authorization.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### RelatedPartyRefOrPartyRoleRef sub-resource fields

partyOrPartyRole	A PartyRefOrPartyRoleRef.
role	A String. Role played by the related party or party role in the context of the specific entity it is linked to. Such as 'initiator', 'customer', 'salesAgent', 'user'.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.

@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### PartyRoleRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
partyId	A String. The identifier of the engaged party that is linked to the PartyRole object.
partyName	A String. The name of the engaged party that is linked to the PartyRole object.
@baseType	A String. When sub-classing, this defines the super-class.
@referredType	A String. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### GCPProductOrderItem sub-resource fields

@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	GCPProductOrderItem can be instanciated as * DCSProductOrderItem

### DCSProductOrderItem sub-resource fields

@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	DCSProductOrderItem can be instanciated as * ApiProductOrderItemAdd
approvedProductOfferingTermOr Condition	This property is present in subclasses

<code>id</code>	This property is present in subclasses
<code>product</code>	This property is present in subclasses
<code>productAction</code>	This property is present in subclasses
<code>productOffering</code>	This property is present in subclasses
<code>state</code>	This property is present in subclasses

### ProductOrderItemDelete sub-resource fields

<code>id</code>	A String. Identifier of the ProductOrder item (generally it is a sequence number 01, 02, 03, ....).
<code>product</code>	A ProductRef. A Product reference.
<code>state</code>	A ProductOrderItemStateType. Possible values for the state of the product order item. ENUMERATED with values: * acknowledged * rejected * pending * held * inProgress * cancelled * completed * failed * partial * assessingCancellation * pendingCancellation
<code>@baseType</code>	A String. When sub-classing, this defines the super-class.
<code>@schemaLocation</code>	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
<code>@type</code>	A String. When sub-classing, this defines the sub-class Extensible name.

### ApiProductOrderItemModify sub-resource fields

<code>approvedProductOfferingTermOrCondition</code>	A ProductOfferingTermOrCondition. Approved Terms or Conditions of the ProductOffering.
<code>id</code>	A String. Identifier of the ProductOrder item (generally it is a sequence number 01, 02, 03, ....).
<code>product</code>	A ProductRef. A Product reference.
<code>productAction</code>	An ApiProductActionModify. An ApiProductActionModify is a specialization of a ProductAction, for GSMA Open GW context for action to modify a product. The values in the schema shall override the values in the Product; it means if the purpose values were [A,B] then if in the modify productAction the purpose values are [A,C] it means the purpose B will be removed and purpose C will be added.

state	A ProductOrderItemStateType. Possible values for the state of the product order item. ENUMERATED with values: * acknowledged * rejected * pending * held * inProgress * cancelled * completed * failed * partial * assessingCancellation * pendingCancellation
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

### Json representation sample(s)

We provide below a JSON representation as example of the 'ApiProductOrderItemAdd' resource object.

```
{
  "id": "6552f9e5-0316",
  "@type": "ApiProductOrderItemAdd",
  "state": "inProgress",
  "targetApplication": {
    "id": "98cf2450-c893"
  },
  "product": {
    "id": "bc529b0b-b304",
    "version": "1.0",
    "creationDate": "2023-11-10T12:30:00Z",
    "lastUpdateDate": "2023-11-10T14:00:00Z",
    "startDate": "2023-11-15T00:00:00Z",
    "terminationDate": "2024-11-15T00:00:00Z",
    "description": "This is a sample API product description.",
    "name": "Sample API Product",
    "orderDate": "2023-11-08T15:45:00Z",
    "productOffering": {
      "id": "243f96ba-61a0",
      "name": "Sample Product Offering",
      "description": "This is a sample product offering description."
    },
    "productOrderItem": {
      "orderId": "cf1933fc-dd5a",
      "orderItemId": "682acec7-5a5d",
      "orderItemAction": "add"
    },
    "productSpecification": {
      "id": "d4ad7d3f-caed",
      "name": "Sample Product Specification",
      "description": "This is a sample product specification description."
    },
  }
}
```

```

        "status": "created"
    }
}

```

We provide below a JSON representation as example of the 'ApiProductOrderItemAdd' resource object.

```

{
    "id": "6552f9e5-0316",
    "@type": "ApiProductOrderItemAdd",
    "state": "inProgress",
    "targetApplication": {
        "id": "98cf2450-c893"
    },
    "applicationLegalBasisForInputData": "LegitimateInterest",
    "dataProcessingDuration": "EndlessDuration",
    "dataProcessingFrequency": "ContinuousFrequency",
    "dataProcessingContext": "AutomationOfProcessing",
    "dataProcessingOperation": "Use",
    "product": {
        "id": "bc529b0b-b304",
        "version": "1.0",
        "creationDate": "2023-11-10T12:30:00Z",
        "lastUpdateDate": "2023-11-10T14:00:00Z",
        "startDate": "2023-11-15T00:00:00Z",
        "terminationDate": "2024-11-15T00:00:00Z",
        "description": "This is a sample API product description.",
        "name": "Sample API Product",
        "orderDate": "2023-11-08T15:45:00Z",
        "productOffering": {
            "id": "243f96ba-61a0",
            "name": "Sample Product Offering",
            "description": "This is a sample product offering description."
        },
        "productOrderItem": {
            "orderId": "cf1933fc-dd5a",
            "orderItemId": "682acec7-5a5d",
            "orderItemAction": "add"
        },
        "productSpecification": {
            "id": "d4ad7d3f-caed",
            "name": "Sample Product Specification",
            "description": "This is a sample product specification description."
        },
        "status": "created"
    }
}

```

## Notification Resource Models

10 notifications are defined for this API.

Notifications related to ApiProductOrder:

- Create Event
- Attribute Value Change Event

- State Change Event

Notifications related to Application:

- Create Event
- Attribute Value Change Event
- Approval Status Change Event

Notifications related to ApplicationOwner:

- Create Event
- Attribute Value Change Event
- Approval Status Change Event

Notifications related to Monitor:

- State Change Event

The notification structure for all notifications in this API follow the pattern depicted by the figure below. A notification event resource (depicted by "SpecificEvent" placeholder) is a sub class of a generic Event structure containing at least an id of the event occurrence (eventId), an event timestamp (eventTime), and the name of the resource (eventType). This notification structure owns an event payload structure ("SpecificEventPayload" placeholder) linked to the resource concerned by the notification using the resource name as access field ("resourceName" placeholder).

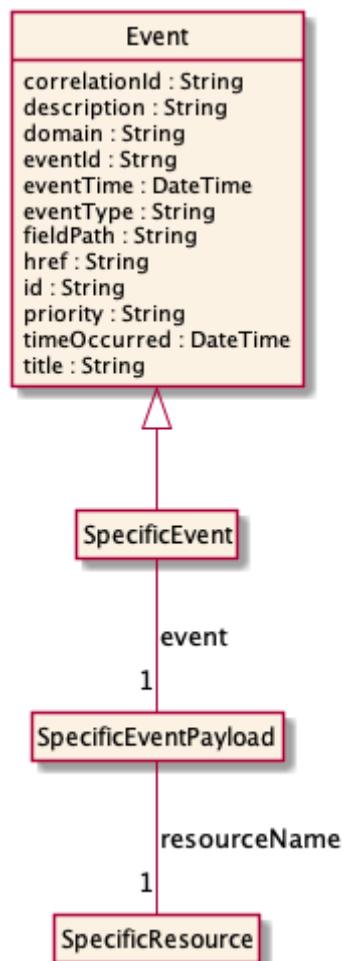


Figure 12 Notification Pattern

## ApiProductOrder

### Create Event

Message example for an ApiProductOrderCreateEvent event

```

Content-Type: application/json

{
  "correlationId": "126-54f",
  "description": "Event for a productOrder creation.",
  "domain": "Open Gateway Onboarding",
  "eventId": "125",
  "eventTime": "2023-09-27T07:43:59.059Z",
  "eventType": "ApiProductOrderCreateEvent",
  "priority": "1",
  "timeOccurred": "2023-09-27T07:43:59.059Z",
  "title": "ApiProductOrderCreateEvent",
  "event": {
    "productOrder": {
      "@type": "ApiProductOrder",
      "@baseType": "DCSProductOrder",
      "id": "322",
      "href": "/tmf-
  
```

```

api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
  "state": "completed",
  "creationDate": "2023-11-21T23:20:50.52Z",
  "completionDate": "2023-10-21T23:21:50.52Z",
  "externalId": [
    {
      "@type": "ExternalIdentifier",
      "externalIdentifierType": "ApplicationOwnerCustomerOrder",
      "id": "2232342",
      "owner": "ChannelPartner"
    }
  ],
  "description": "Camara API order for an Application Owner",
  "productOrderItem": [
    {
      "@type": "ApiProductOrderItemAdd",
      "@baseType": "ProductOrderItem",
      "id": "1",
      "state": "completed",
      "productOffering": {
        "@type": "ProductOfferingRef",
        "id": "202",
        "name": "areocloud_device_location_verification"
      },
      "product": {
        "@type": "ProductRef",
        "id": "122"
      },
      "productAction": {
        "@type": "ApiProductActionAddDeviceLocationVerification",
        "@baseType": "ApiProductActionAdd",
        "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Customer/ApiProductActionAddDeviceLocationVerification.schema.json",
        "purpose": "FraudPreventionAndDetection",
        "bestAccuracy": "500",
        "targetApplication": [
          {
            "@type": "ApplicationRef",
            "id": "101"
          }
        ]
      },
      "approvedProductOfferingTermOrCondition": [
        {
          "@type": "ProductOfferingTermOrCondition",
          "name": "Device Location Term or Condition",
          "productOfferingTermOrConditionSpec": {
            "id": "22332",
            "name": "device_location_verification_terms",
            "version": "1.1"
          },
          "productOfferingTermOrConditionApproval": {
            "@type": "ProductOfferingTermOrConditionApproval",
            "approvalDate": "2023-11-20T00:00",
            "authorization": [
              {
                "@type": "ApiAuthorization",
                "name": "Application Owner representative",
                "approver": {
                  "@type": "RelatedPartyRefOrPartyRoleRef",
                  "role": "applicationOwner",
                  "partyOrPartyRole": {
                    "@type": "PartyRoleRef"
                  }
                }
              }
            ]
          }
        }
      ]
    }
  ]
}

```

```

                "id": "31"
            }
        }
    ]
}
],
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
},
"@baseType": "Event",
"@type": "ApiProductOrderCreateEvent"
}

```

## Attribute Value Change Event

Message example for an ApiProductOrderAttributeValueChangeEvent event

```

Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a productOrder attribute value change.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApiProductOrderAttributeValueChangeEvent",
    "priority": "1",
    "timeOccurred": "2023-09-27T07:43:59.059Z",
    "title": "ApiProductOrderAttributeValueChangeEvent",
    "event": {
        "productOrder": {
            "@type": "ApiProductOrder",
            "id": "322",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
            "state": "completed",
            "completionDate": "2023-10-21T23:21:50.52Z"
        }
    },
    "@baseType": "Event",
    "@type": "ApiProductOrderAttributeValueChangeEvent"
}

```

## State Change Event

Message example for an ApiProductOrderStateChangeEvent event

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

```
{
}
```

```

"correlationId": "126-54f",
"description": "Event for a productOrder state change.",
"domain": "Open Gateway Onboarding",
"eventId": "125",
"eventTime": "2023-09-27T07:43:59.059Z",
"eventType": "ApiProductOrderStateChangeEvent",
"priority": "1",
"timeOcurred": "2023-09-27T07:43:59.059Z",
"title": "ApiProductOrderStateChangeEvent",
"event": {
    "productOrder": {
        "@type": "ApiProductOrder",
        "id": "322",
        "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
        "state": "cancelled"
    }
},
"@baseType": "Event",
"@type": "ApiProductOrderStateChangeEvent"
}

```

## Application

### Create Event

Message example for an ApplicationCreateEvent event

```

Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a application creation.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApplicationCreateEvent",
    "priority": "1",
    "timeOcurred": "2023-09-27T07:43:59.059Z",
    "title": "ApplicationCreateEvent",
    "event": {
        "application": {
            "@type": "Application",
            "@baseType": "LogicalResource",
            "id": "101",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
            "name": "Evolve Quest",
            "commercialName": "Evolve Quest",
            "description": "Evolve Quest mobile application",
            "redirectUrl": [
                "https://evolvequest.com/redirect"
            ],
            "jwksUri": "https://evolvequest.com/jwk",
            "category": "games",
            "operationalState": "enable",
            "approvalStatus": "approved",
            "digitalIdentity": {
                "@type": "ApiDigitalIdentity",

```

```

        "clientId": "evolve_quest_channelPartner15"
    },
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "privacyRightsRequestContact": [
        {
            "@type": "WebFormContactMedium",
            "id": "1",
            "preferred": false,
            "contactType": "contact web form",
            "validFor": {
                "startDateTime": "2024-04-12T23:20:50.52Z",
                "endDateTime": "2026-04-12T23:20:50.52Z"
            },
            "url": "https://contact.evolvequest.com"
        },
        {
            "@type": "EmailContactMedium",
            "id": "2",
            "preferred": true,
            "contactType": "corporate email",
            "validFor": {
                "startDateTime": "2020-04-12T23:20:50.52Z",
                "endDateTime": "2028-04-12T23:20:50.52Z"
            },
            "emailAddress": "contact@evolvequest.com"
        }
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
},
"@baseType": "Event",
"@type": "ApplicationCreateEvent"
}

```

## Attribute Value Change Event

Message example for an ApplicationAttributeValueChangeEvent event

```

Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a application attribute value change.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApplicationAttributeValueChangeEvent",
    "priority": "1",
    "timeOccurred": "2023-09-27T07:43:59.059Z",
    "title": "ApplicationAttributeValueChangeEvent",
    "event": {
        "application": {
            "@type": "Application",
            "id": "101",

```

```

        "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/101",
        "description": "Evolve Quest awarded mobile application."
    }
},
"@baseType": "Event",
"@type": "ApplicationAttributeValueChangeEvent"
}

```

## Approval Status Change Event

Message example for an ApplicationApprovalStatusChangeEvent event

```

Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a application approvalStatus change.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApplicationApprovalStatusChangeEvent",
    "priority": "1",
    "timeOcurred": "2023-09-27T07:43:59.059Z",
    "title": "ApplicationApprovalStatusChangeEvent",
    "event": {
        "application": {
            "@type": "Application",
            "id": "101",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
            "approvalStatus": "approved"
        }
    },
    "@baseType": "Event",
    "@type": "ApplicationApprovalStatusChangeEvent"
}

```

## ApplicationOwner

### Create Event

Message example for an ApplicationOwnerCreateEvent event

```

Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a applicationOwner creation.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApplicationOwnerCreateEvent",
    "priority": "1",
    "timeOcurred": "2023-09-27T07:43:59.059Z",
    "title": "ApplicationOwnerCreateEvent",
}

```

```

"event": {
    "applicationOwner": {
        "@type": "ApplicationOwner",
        "@baseType": "PartyRole",
        "id": "31",
        "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
        "name": "Funtastic Games application owner role",
        "description": "Application owner role in the Open Gateway context",
        "engagedParty": {
            "@type": "ApplicationOwnerOrganization",
            "@baseType": "Organization",
            "name": "Funtastic Games SA",
            "tradingName": "Funtastic Games",
            "isLegalEntity": true,
            "organizationType": "ForProfitOrganisation",
            "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
            "taxNumber": "00.623.904/0001-73",
            "organizationIdentification": [
                {
                    "@type": "organizationIdentification",
                    "identificationType": "CNPJ",
                    "identificationId": "00.623.904/0001-73",
                    "issuingAuthority": "Receita Federal"
                }
            ],
            "externalReference": [
                {
                    "@type": "ExternalReference",
                    "id": "funtastic_games_asp",
                    "externalReferenceType": "organization name in channel
partner IT"
                }
            ],
            "registeredGeographicAddress": {
                "@type": "LightGeographicAddress",
                "@baseType": "GeographicAddress",
                "streetNr": "123",
                "streetName": "Avenida Paulista",
                "locality": "Para?so",
                "city": "S?o Paulo",
                "stateOrProvince": "S?o Paulo",
                "countryCode": {
                    "@type": "ISO31661Alpha2StandardIdentifier",
                    "@baseType": "StandardIdentifier",
                    "value": "BR"
                },
                "postcode": "01311-000",
                "geographicSubAddress": {
                    "@type": "LightGeographicSubAddress",
                    "@baseType": "GeographicSubAddress",
                    "buildingName": "Fogo",
                    "levelNumber": "Planta 4"
                }
            },
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "emailAddress": "contact@funtasticgames.com"
                }
            ]
        }
    }
}

```

```
        ],
        "legalRepresentative": {
            "@type": "ApplicationOwnerRelatedIndividual",
            "familyName": "OConnor",
            "givenName": "Jane",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "jane@funtasticgames.com"
                }
            ]
        },
        "dataProtectionOfficer": {
            "@type": "ApplicationOwnerRelatedOrganization",
            "name": "DPO Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "dpo@funtasticgames.com"
                }
            ]
        },
        "privacyManager": {
            "@type": "ApplicationOwnerRelatedOrganization",
            "name": "Privacy Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "privacy@funtasticgames.com"
                }
            ]
        },
        "localRepresentative": [
            {
                "@type": "ApplicationOwnerRelatedLocalRepresentative",
                "countryCode": {
                    "@type": "ISO31661Alpha2StandardIdentifier",
                    "value": "EU"
                },
                "representative": {
                    "@type": "ApplicationOwnerRelatedIndividual",
                    "familyName": "Juan",
                    "givenName": "Garc?a",
                    "contactMedium": [
                        {
                            "@type": "EmailContactMedium",
                            "id": "jgarcia",
                            "preferred": true,
                            "contactType": "email",
                            "emailAddress": "jgarcia@funtasticgames.com"
                        }
                    ]
                }
            }
        ]
    }
}
```

```

        ],
        "dataProtectionRights": {
            "@type": "ApplicationOwnerRelatedOrganization",
            "name": "Data Protection Rights",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "rights@funtasticgames.com"
                }
            ]
        },
        "status": "active",
        "approvalStatus": "pendingApproval",
        "channelPartner": {
            "@type": "PartyRoleRef",
            "id": "15"
        }
    }
},
"@baseType": "Event",
"@type": "ApplicationOwnerCreateEvent"
}

```

## Attribute Value Change Event

Message example for an ApplicationOwnerAttributeValueChangeEvent event

```

Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a applicationOwner attribute value change.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApplicationOwnerAttributeValueChangeEvent",
    "priority": "1",
    "timeOcurred": "2023-09-27T07:43:59.059Z",
    "title": "ApplicationOwnerAttributeValueChangeEvent",
    "event": {
        "applicationOwner": {
            "@type": "ApplicationOwner",
            "id": "31",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
            "description": "Application owner role in the GSMA Open Gateway
context."
        }
    },
    "@baseType": "Event",
    "@type": "ApplicationOwnerAttributeValueChangeEvent"
}

```

## Approval Status Change Event

Message example for an ApplicationOwnerApprovalStatusChangeEvent event

```
Content-Type: application/json

{
    "correlationId": "126-54f",
    "description": "Event for a applicationOwner approvalStatus change.",
    "domain": "Open Gateway Onboarding",
    "eventId": "125",
    "eventTime": "2023-09-27T07:43:59.059Z",
    "eventType": "ApplicationOwnerApprovalStatusChangeEvent",
    "priority": "1",
    "timeOcurred": "2023-09-27T07:43:59.059Z",
    "title": "ApplicationOwnerApprovalStatusChangeEvent",
    "event": {
        "applicationOwner": {
            "@type": "ApplicationOwner",
            "id": "31",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
            "approvalStatus": "approved"
        }
    },
    "@baseType": "Event",
    "@type": "ApplicationOwnerApprovalStatusChangeEvent"
}
```

## Monitor

### State Change Event

Message example for an MonitorStateChangeEvent event

```
Content-Type: application/json

{
    "correlationId": "987-46i",
    "description": "Event for a monitor state change.",
    "domain": "Open Gateway Onboarding",
    "eventId": "987",
    "eventTime": "2023-10-27T07:43:59.059Z",
    "eventType": "MonitorStateChangeEvent",
    "priority": "1",
    "timeOcurred": "2023-10-27T07:43:59.059Z",
    "title": "MonitorStateChangeEvent",
    "event": {
        "monitor": {
            "@type": "Monitor",
            "id": "987654",
            "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987654",
            "state": "Completed"
        }
    },
    "@baseType": "Event",
    "@type": "MonitorStateChangeEvent"
}
```

}

# API OPERATIONS

Remember the following Uniform Contract:

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

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

Monitor pattern, as described in TMF REST Design Guidelines, SHALL be used when supporting Async requests. A Monitor resource is created for each async operation. For example, in a resource creation operation HTTP POST, the returned 202 Accept response shall have a Link header referencing the monitor created to check the operation status:

Link: </monitor/987654>;rel=related;title=monitor

Notifications are also described in a subsequent section.

## Operations on ApiProductOrder

### List or find ApiProductOrder objects

`GET /apiProductOrder?fields=...`

#### Description

This operation list ApiProductOrder entities. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

#### Usage samples

Retrieve a list of API Orders

#### Request

```
GET /apiProductOrder
```

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

## Response

```
200
[
  {
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "id": "322",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
      {
        "@type": "ExternalIdentifier",
        "externalIdentifierType": "ApplicationOwnerCustomerOrder",
        "id": "2232342",
        "owner": "ChannelPartner"
      }
    ],
    "description": "Camara API order for an Application Owner",
    "productOrderItem": [
      {
        "@type": "ApiProductOrderItemAdd",
        "@baseType": "ProductOrderItem",
        "id": "1",
        "state": "completed",
        "productOffering": {
          "@type": "ProductOfferingRef",
          "id": "202",
          "name": "areocloud_device_location_verification"
        },
        "product": {
          "@type": "ProductRef",
          "id": "122"
        },
        "productAction": {
          "@type": "ApiProductActionAddDeviceLocationVerification",
          "@baseType": "ApiProductAction",
          "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Customer/ApiProductActionAddDeviceLocationVerification.schema.json",
          "purpose": "FraudPreventionAndDetection",
          "bestAccuracy": "100000",
          "targetApplication": {
            "@type": "ApplicationRef",
            "id": "101"
          }
        }
      },
      "approvedProductOfferingTermOrCondition": [
        {
          "@type": "ProductOfferingTermOrCondition",
          "name": "Device Location Term or Condition",
          "productOfferingTermOrConditionSpec": {
            "id": "22332",
            "name": "Device Location Term or Condition"
          }
        }
      ]
    ]
  }
]
```

```

        "name": "device_location_verification_terms",
        "version": "1.1"
    },
    "productOfferingTermOrConditionApproval": {
        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00",
        "authorization": [
            {
                "@type": "ApiAuthorization",
                "name": "Application Owner representative",
                "approver": {
                    "@type": "RelatedPartyRefOrPartyRoleRef",
                    "role": "applicationOwner",
                    "partyOrPartyRole": {
                        "@type": "PartyRoleRef",
                        "id": "31"
                    }
                }
            }
        ]
    }
},
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
},
{
    "@type": "ApiProductOrder",
    "@baseType": "ProductOrder",
    "id": "323",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/323",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API Unsubscription for an Application Owner",
    "productOrderItem": [
        {
            "@type": "ProductOrderItemDelete",
            "@baseType": "ProductOrderItem",
            "id": "1",
            "state": "completed",
            "product": {
                "@type": "ProductRef",
                "id": "122",
                "name": "device_location_verification"
            }
        }
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}
]
}

```

```
        "id": "15"
    }
]
```

Retrieve a list of API Product Order with filter selection.

## Request

```
GET /apiProductOrder?state=completed&fields=state
Content-Type: application/json
```

## Response

```
200
[
{
    "@type": "ApiProductOrder",
    "id": "322",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
    "state": "completed"
},
{
    "@type": "ApiProductOrder",
    "id": "323",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/323",
    "state": "completed"
}
]
```

## Retrieves a ApiProductOrder by ID

```
GET /apiProductOrder/{id}?fields=...
```

### Description

This operation retrieves an ApiProductOrder entity. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

### Usage samples

Retrieve an API Product Order already created from its identifier.

## Request

```
GET /apiProductOrder/323
Content-Type: application/json
```

## Response

```

200

{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "id": "322",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API order for an Application Owner",
    "productOrderItem": [
        {
            "@type": "ApiProductOrderItemAdd",
            "@baseType": "ProductOrderItem",
            "id": "1",
            "state": "completed",
            "productOffering": {
                "@type": "ProductOfferingRef",
                "id": "202",
                "name": "areocloud_device_location_verification"
            },
            "product": {
                "@type": "ProductRef",
                "id": "122"
            },
            "productAction": {
                "@type": "ApiProductActionAddDeviceLocationVerification",
                "@baseType": "ApiProductAction",
                "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Customer/ApiProductActionAddDeviceLocationVerification.schema.json",
                "purpose": "FraudPreventionAndDetection",
                "bestAccuracy": "100000",
                "targetApplication": {
                    "@type": "ApplicationRef",
                    "id": "101"
                }
            }
        },
        "approvedProductOfferingTermOrCondition": [
            {
                "@type": "ProductOfferingTermOrCondition",
                "name": "Device Location Term or Condition",
                "productOfferingTermOrConditionSpec": {
                    "id": "22332",
                    "name": "device_location_verification_terms",
                    "version": "1.1"
                },
                "productOfferingTermOrConditionApproval": {

```

```

        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00",
        "authorization": [
            {
                "@type": "ApiAuthorization",
                "name": "Application Owner representative",
                "approver": {
                    "@type": "RelatedPartyRefOrPartyRoleRef",
                    "role": "applicationOwner",
                    "partyOrPartyRole": {
                        "@type": "PartyRoleRef",
                        "id": "31"
                    }
                }
            }
        ]
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}

```

Retrieve an API Product Order already created from its identifier.

## Request

```

GET /apiProductOrder/323
Content-Type: application/json

```

## Response

```

200

{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "id": "323",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/323",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API Unsubscription for an Application Owner",
    "productOrderItem": [

```

```
{
    "@type": "ProductOrderItemDelete",
    "@baseType": "ProductOrderItem",
    "id": "1",
    "state": "completed",
    "product": {
        "@type": "ProductRef",
        "id": "122",
        "name": "device_location_verification"
    }
},
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
```

## Creates a ApiProductOrder

**POST /apiProductOrder?fields=...**

### Description

This operation creates an ApiProductOrder entity.

### Mandatory Attributes

Mandatory Attributes	Rule
productOrderItem	
productOrderItem.product	
@type	

### Usage samples

Create a API Product Order for ordering (subscribe) a new product.

### Request

```
POST /apiProductOrder
Content-Type: application/json

{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API order for an Application Owner",
    "productOrderItem": [

```

```
{
  "@type": "ApiProductOrderItemAdd",
  "@baseType": "ProductOrderItem",
  "id": "1",
  "productOffering": {
    "@type": "ProductOfferingRef",
    "id": "202",
    "name": "areocloud_device_location_verification"
  },
  "productAction": {
    "@type": "ApiProductActionAddDeviceLocationVerification",
    "@baseType": "ApiProductActionAdd",
    "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Customer/ApiProductActionAddDeviceLocationVerification.schema.json",
    "purpose": "FraudPreventionAndDetection",
    "bestAccuracy": "500",
    "targetApplication":
      {
        "@type": "ApplicationRef",
        "id": "101"
      }
  },
  "approvedProductOfferingTermOrCondition": [
    {
      "@type": "ProductOfferingTermOrCondition",
      "name": "Device Location Term or Condition",
      "productOfferingTermOrConditionSpec": {
        "id": "22332",
        "name": "device_location_verification_terms",
        "version": "1.1"
      },
      "productOfferingTermOrConditionApproval": {
        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00",
        "authorization": [
          {
            "@type": "ApiAuthorization",
            "name": "Application Owner representative",
            "approver": {
              "@type": "RelatedPartyRefOrPartyRoleRef",
              "role": "applicationOwner",
              "partyOrPartyRole": {
                "@type": "PartyRoleRef",
                "id": "31"
              }
            }
          }
        ]
      }
    }
  ]
}
```

## Response

201

```
{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "id": "322",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/322",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API order for an Application Owner",
    "productOrderItem": [
        {
            "@type": "ApiProductOrderItemAdd",
            "@baseType": "ProductOrderItem",
            "id": "1",
            "state": "completed",
            "productOffering": {
                "@type": "ProductOfferingRef",
                "id": "202",
                "name": "areocloud_device_location_verification"
            },
            "product": {
                "@type": "ProductRef",
                "id": "122"
            },
            "productAction": {
                "@type": "ApiProductActionAddDeviceLocationVerification",
                "@baseType": "ApiProductActionAdd",
                "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Customer/ApiProductActionAddDeviceLocationVerification.schema.json",
                "purpose": "FraudPreventionAndDetection",
                "bestAccuracy": "500",
                "targetApplication": [
                    {
                        "@type": "ApplicationRef",
                        "id": "101"
                    }
                ]
            },
            "approvedProductOfferingTermOrCondition": [
                {
                    "@type": "ProductOfferingTermOrCondition",
                    "name": "Device Location Term or Condition",
                    "productOfferingTermOrConditionSpec": {
                        "id": "22332",
                        "name": "device_location_verification_terms",
                        "version": "1.1"
                    },
                    "productOfferingTermOrConditionApproval": {
                        "@type": "ProductOfferingTermOrConditionApproval",
                        "approvalDate": "2023-11-20T00:00",
                        "authorization": [
                            {
                                "@type": "ApiAuthorization",
                                "name": "Application Owner representative",
                                "id": "101"
                            }
                        ]
                    }
                }
            ]
        }
    ]
}
```

```

        "approver": [
            "@type": "RelatedPartyRefOrPartyRoleRef",
            "role": "applicationOwner",
            "partyOrPartyRole": [
                "@type": "PartyRoleRef",
                "id": "31"
            ]
        }
    ],
    "channelPartner": [
        "@type": "PartyRoleRef",
        "id": "15"
    ]
}
]

```

Create a API Product Order for ordering (unsubscribe) the removal of an existing product.

## Request

```

POST /apiProductOrder
Content-Type: application/json

{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API Unsubscription for an Application Owner",
    "productOrderItem": [
        {
            "@type": "ProductOrderItemDelete",
            "@baseType": "ProductOrderItem",
            "id": "1",
            "product": {
                "@type": "ProductRef",
                "id": "122",
                "name": "device_location_verification"
            }
        }
    ]
}

```

## Response

201

```
{
    "@type": "ApiProductOrder",
    "@baseType": "DCSProductOrder",
    "id": "323",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProductOrder/323",
    "state": "completed",
    "creationDate": "2023-11-21T23:20:50.52Z",
    "completionDate": "2023-10-21T23:21:50.52Z",
    "externalId": [
        {
            "@type": "ExternalIdentifier",
            "externalIdentifierType": "ApplicationOwnerCustomerOrder",
            "id": "2232342",
            "owner": "ChannelPartner"
        }
    ],
    "description": "Camara API Unsubscription for an Application Owner",
    "productOrderItem": [
        {
            "@type": "ProductOrderItemDelete",
            "@baseType": "ProductOrderItem",
            "id": "1",
            "state": "completed",
            "product": {
                "@type": "ProductRef",
                "id": "122",
                "name": "device_location_verification"
            }
        }
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}
```

## Operations on ApiProduct

### Retrieves a ApiProduct by ID

**GET /apiProduct/{id}?fields=...**

#### Description

This operation retrieves an ApiProduct entity. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

#### Usage samples

Retrieve an API Product already created from its identifier.

#### Request

```
GET /apiProduct/122
```

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

## Response

```
200

{
    "@type": "ApiProductDeviceLocationVerification",
    "@baseType": "ApiProduct",
    "@schemaLocation": "https://mycsp.com:8080/tmf-
api/schema/Product/ApiProductDeviceLocationVerification.schema.json",
    "id": "122",
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProduct/122",
    "name": "device_location_verification",
    "description": "Open Gateway Device Location Verify",
    "creationDate": "2023-10-21T23:20:50.52Z",
    "startDate": "2023-10-21T23:20:50.52Z",
    "status": "active",
    "productOffering": {
        "@type": "ProductOfferingRef",
        "id": "202",
        "name": "areocloud_device_location_verification"
    },
    "productOrderItem": [
        {
            "@type": "RelatedProductOrderItem",
            "orderId": "322",
            "orderItemId": "1",
            "orderItemAction": "add"
        },
        {
            "@type": "RelatedProductOrderItem",
            "orderId": "323",
            "orderItemId": "1",
            "orderItemAction": "modify"
        }
    ],
    "productSpecification": {
        "@type": "ProductSpecificationRef",
        "id": "533",
        "name": "device_location_verification",
        "version": "1.0"
    },
    "apiName": "LocationVerification",
    "apiVersionDetails": [
        {
            "@type": "ApiVersionDetails",
            "apiMajorVersion": 0,
            "basePath": "location-verification",
            "apiGrantInformation" : [
                {
                    "@type": "ApiGrantInformation",
                    "purpose": "FraudPreventionAndDetection",
                    "scope": [
                        "location-verification:verify"
                    ],
                    "grantType": [
                        "urn:openid:params:grant-type:ciba",
                        "authorization_code"
                    ]
                }
            ]
        }
    ]
}
```

```

        "legalBasis": "Consent"
    },
    {
        "@type": "ApiGrantInformation",
        "scope": [
            "location-verification:read"
        ],
        "grantType": [
            "client_credentials"
        ]
    }
]
],
"bestAccuracy": "500",
"approvedProductOfferingTermOrCondition": [
{
    "@type": "ProductOfferingTermOrCondition",
    "name": "Device Location Term or Condition",
    "productOfferingTermOrConditionSpec": {
        "@type": "ProductOfferingTermOrConditionSpec",
        "id": "22332",
        "name": "device_location_verification_terms",
        "version": "1.1"
    },
    "productOfferingTermOrConditionApproval": {
        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00:00.000Z",
        "authorization": [
            {
                "@type": "Authorization",
                "name": "Application Owner representative",
                "approver": {
                    "@type": "RelatedPartyRefOrPartyRoleRef",
                    "role": "applicationOwner",
                    "partyOrPartyRole": {
                        "@type": "PartyRoleRef",
                        "id": "31"
                    }
                }
            }
        ]
    }
},
{
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}
]

```

## List or find ApiProduct objects

**GET /apiProduct?fields=...**

### Description

This operation list ApiProduct entities. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

## Usage samples

Retrieve a list of API

### Request

```
GET /apiProduct  
Content-Type: application/json
```

### Response

```
200  
  
[  
  {  
    "@type": "ApiProductDeviceLocationVerification",  
    "@baseType": "ApiProduct",  
    "@schemaLocation": "https://mycsp.com:8080/tmf-  
api/schema/Product/ApiProductDeviceLocationVerification.schema.json",  
    "id": "122",  
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProduct/122",  
    "name": "device_location_verification",  
    "description": "Open Gateway Device Location Verify",  
    "creationDate": "2023-10-21T23:20:50.52Z",  
    "startDate": "2023-10-21T23:20:50.52Z",  
    "status": "active",  
    "productOffering": {  
      "@type": "ProductOfferingRef",  
      "id": "202",  
      "name": "areocloud_device_location_verification"  
    },  
    "productOrderItem": [  
      {  
        "@type": "RelatedProductOrderItem",  
        "orderId": "322",  
        "orderItemId": "1",  
        "orderItemAction": "add"  
      },  
      {  
        "@type": "RelatedProductOrderItem",  
        "orderId": "323",  
        "orderItemId": "1",  
        "orderItemAction": "modify"  
      }  
    ],  
    "productSpecification": {  
      "@type": "ProductSpecificationRef",  
      "id": "533",  
      "name": "device_location_verification",  
      "version": "1.0"  
    },  
    "apiName": "LocationVerification",  
    "apiVersionDetails": [  
      {  
        "@type": "ApiVersionDetails",  
        "apiMajorVersion": 0,  
        "basePath": "location-verification",  
        "apiGrantInformation" : [  
          {  
            "grantId": "1",  
            "grantType": "Read",  
            "resourcePath": "device-location-verification/  
          }  
        ]  
      }  
    ]  
  }  
]
```

```
{
    "@type": "ApiGrantInformation",
    "purpose": "FraudPreventionAndDetection",
    "scope": [
        "location-verification:verify"
    ],
    "grantType": [
        "urn:openid:params:grant-type:ciba",
        "authorization_code"
    ],
    "legalBasis": "Consent"
},
{
    "@type": "ApiGrantInformation",
    "scope": [
        "location-verification:read"
    ],
    "grantType": [
        "client_credentials"
    ]
}
],
"bestAccuracy": "100000",
"approvedProductOfferingTermOrCondition": [
{
    "@type": "ProductOfferingTermOrCondition",
    "name": "Device Location Term or Condition",
    "productOfferingTermOrConditionSpec": {
        "@type": "ProductOfferingTermOrConditionSpec",
        "id": "22332",
        "name": "device_location_verification_terms",
        "version": "1.1"
    },
    "productOfferingTermOrConditionApproval": {
        "@type": "ProductOfferingTermOrConditionApproval",
        "approvalDate": "2023-11-20T00:00:00.000Z",
        "authorization": [
{
            "@type": "Authorization",
            "name": "Application Owner representative",
            "approver": {
                "@type": "RelatedPartyRefOrPartyRoleRef",
                "role": "applicationOwner",
                "partyOrPartyRole": {
                    "@type": "PartyRoleRef",
                    "id": "31"
                }
            }
        ]
    }
},
{
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}
]
```

Retrieve a list of API Product with filter selection.

### Request

```
GET /apiProduct?status=active&fields=status  
Content-Type: application/json
```

### Response

```
200  
[  
  {  
    "@type": "ApiProductDeviceLocationVerification",  
    "id": "122",  
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/apiProduct/122",  
    "status": "active"  
  }  
]
```

## Operations on Application

### List or find Application objects

**GET /application?fields=...**

#### Description

This operation list Application entities. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

#### Usage samples

Retrieve a list of Application

### Request

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

### Response

```
200  
[  
  {  
    "@type": "Application",  
    "@baseType": "LogicalResource",  
    "id": "101",  
    "href": "/tmf-
```

```
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
  "name": "Evolve Quest",
  "commercialName": "Evole Quest",
  "description": "Evolve Quest mobile application",
  "redirectUrl": [
    "https://evolvequest.com/redirect"
  ],
  "jwksUri": "https://evolvequest.com/jwk",
  "category": "games",
  "operationalState": "enable",
  "approvalStatus": "approved",
  "digitalIdentity": {
    "@type": "ApiDigitalIdentity",
    "clientId": "evolve_quest_channelPartner15"
  },
  "applicationOwner": {
    "@type": "PartyRoleRef",
    "id": "31"
  },
  "externalIdentifier": [
    {
      "@type": "ExternalIdentifier",
      "id": "1234",
      "owner": "ChannelPartner",
      "externalIdentifierType": "ApplicationIdFromCP"
    }
  ],
  "privacyRightsRequestContact": [
    {
      "@type": "WebFormContactMedium",
      "id": "1",
      "preferred": false,
      "contactType": "contact web form",
      "validFor": {
        "startDateTime": "2024-04-12T23:20:50.52Z",
        "endDateTime": "2026-04-12T23:20:50.52Z"
      },
      "url": "https://contact.evolvequest.com"
    },
    {
      "@type": "EmailContactMedium",
      "id": "2",
      "preferred": true,
      "contactType": "corporate email",
      "validFor": {
        "startDateTime": "2020-04-12T23:20:50.52Z",
        "endDateTime": "2028-04-12T23:20:50.52Z"
      },
      "emailAddress": "contact@evolvequest.com"
    }
  ],
  "channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
  }
},
{
  "@type": "Application",
  "@baseType": "LogicalResource",
  "id": "102",
  "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/102",
  "name": "Evolve West",
  "commercialName": "Evole West",
  "description": "Evolve West mobile application",
```

```

"redirectUrl": [
    "https://evolvewest.com/redirect"
],
"jwksUri": "https://evolvewest.com/jwk",
"category": "games",
"operationalState": "enable",
"approvalStatus": "approved",
"digitalIdentity": {
    "@type": "ApiDigitalIdentity",
    "clientId": "evolve_quest_channelPartner15"
},
"apiConsumerRole": [
{
    "@type": "LogicalResourceRole",
    "@baseType": "EntityRole",
    "name": "Evolve Quest application API consumer",
    "grantedPermissionSet": [
        {
            "@type": "ApiPermissionSet",
            "@baseType": "PermissionSet",
            "creationDate": "2023-10-21T23:20:50.52Z",
            "id": "09128",
            "apiConsumerPermissionManagedAssetGroup": {
                "@type": "ApiListAssetGroup",
                "@baseType": "AssetGroup",
                "apiProduct": [
                    {
                        "@type": "ProductRef",
                        "id": "123"
                    }
                ]
            }
        }
    ]
},
"applicationOwner": {
    "@type": "PartyRoleRef",
    "id": "31"
},
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
]
]

```

Retrieve a list of Application with filter selection.

## Request

```

GET /application?approvalStatus=approved&fields=approvalStatus
Content-Type: application/json

```

## Response

```

200

```

```
[  
  {  
    "@type": "Application",  
    "id": "101",  
    "href": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",  
    "approvalStatus": "approved"  
  },  
  {  
    "@type": "Application",  
    "id": "102",  
    "href": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/102",  
    "approvalStatus": "approved"  
  }  
]
```

## Retrieves a Application by ID

**GET /application/{id}?fields=...**

### Description

This operation retrieves an Application entity. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

### Usage samples

Retrieve a completed Application from its identifier

#### Request

```
GET /application/101  
Content-Type: application/json
```

#### Response

```
200  
  
{  
  "@type": "Application",  
  "@baseType": "LogicalResource",  
  "id": "101",  
  "href": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",  
  "name": "Evolve Quest",  
  "commercialName": "Evolve Quest",  
  "description": "Evolve Quest mobile application",  
  "redirectUrl": [  
    "https://evolvequest.com/redirect"  
  ],  
  "jwksUri": "https://evolvequest.com/jwk",  
  "category": "games",  
}
```

```

    "operationalState": "enable",
    "approvalStatus": "approved",
    "digitalIdentity": {
        "@type": "ApiDigitalIdentity",
        "clientId": "evolve_quest_channelPartner15"
    },
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "privacyRightsRequestContact": [
        {
            "@type": "WebFormContactMedium",
            "id": "1",
            "preferred": false,
            "contactType": "contact web form",
            "validFor": {
                "startDateTime": "2024-04-12T23:20:50.52Z",
                "endDateTime": "2026-04-12T23:20:50.52Z"
            },
            "url": "https://contact.evolvequest.com"
        },
        {
            "@type": "EmailContactMedium",
            "id": "2",
            "preferred": true,
            "contactType": "corporate email",
            "validFor": {
                "startDateTime": "2020-04-12T23:20:50.52Z",
                "endDateTime": "2028-04-12T23:20:50.52Z"
            },
            "emailAddress": "contact@evolvequest.com"
        }
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}

```

Retrieve a completed Application from its identifier

## Request

```

GET /application/102
Content-Type: application/json

```

## Response

```

200
{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "id": "102",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/102",
    "name": "Evolve West",
    "commercialName": "Evolve West",
}

```

```
"description": "Evolve West mobile application",
"redirectUrl": [
    "https://evolvewest.com/redirect"
],
"jwksUri": "https://evolvewest.com/jwk",
"category": "games",
"operationalState": "enable",
"approvalStatus": "approved",
"digitalIdentity": {
    "@type": "ApiDigitalIdentity",
    "clientId": "evolve_quest_channelPartner15"
},
"apiConsumerRole": [
    {
        "@type": "LogicalResourceRole",
        "@baseType": "EntityRole",
        "name": "Evolve Quest application API consumer",
        "grantedPermissionSet": [
            {
                "@type": "ApiPermissionSet",
                "@baseType": "PermissionSet",
                "creationDate": "2023-10-21T23:20:50.52Z",
                "permission": {
                    "@type": "ApiConsumerPermission",
                    "@baseType": "Permission",
                    "managedAssetGroup": {
                        "@type": "ApiListAssetGroup",
                        "@baseType": "AssetGroup",
                        "apiProduct": [
                            {
                                "@type": "ProductRef",
                                "id": "123"
                            }
                        ]
                    }
                }
            }
        ]
    }
],
"applicationOwner": {
    "@type": "PartyRoleRef",
    "id": "31"
},
"privacyRightsRequestContact": [
{
    "@type": "WebFormContactMedium",
    "id": "1",
    "preferred": false,
    "contactType": "contact web form",
    "validFor": {
        "startDateTime": "2024-04-12T23:20:50.52Z",
        "endDateTime": "2026-04-12T23:20:50.52Z"
    },
    "url": "https://contact.evolvequest.com"
},
{
    "@type": "EmailContactMedium",
    "id": "2",
    "preferred": true,
    "contactType": "corporate email",
    "validFor": {
        "startDateTime": "2020-04-12T23:20:50.52Z",
        "endDateTime": "2028-04-12T23:20:50.52Z"
    }
}
```

```

        },
        "emailAddress": "contact@evolvequest.com"
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}

```

Retrieve a completed Application from its identifier

## Request

```

GET /application/103
Content-Type: application/json

```

## Response

```

200
{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "id": "103",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/103",
    "name": "Evolve East",
    "commercialName": "Evolve East",
    "description": "Evolve East mobile application",
    "category": "games",
    "operationalState": "enable",
    "approvalStatus": "approved",
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "externalIdentifier": [
        {
            "@type": "ExternalIdentifier",
            "id": "1234",
            "owner": "ChannelPartner",
            "externalIdentifierType": "ApplicationIdFromCP"
        }
    ],
    "privacyRightsRequestContact": [
        {
            "@type": "WebFormContactMedium",
            "id": "1",
            "preferred": false,
            "contactType": "contact web form",
            "validFor": {
                "startDateTime": "2024-04-12T23:20:50.52Z",
                "endDateTime": "2026-04-12T23:20:50.52Z"
            },
            "url": "https://contact.evolvequest.com"
        },
        {
            "@type": "EmailContactMedium",

```

```

        "id": "2",
        "preferred": true,
        "contactType": "corporate email",
        "validFor": {
            "startDateTime": "2020-04-12T23:20:50.52Z",
            "endDateTime": "2028-04-12T23:20:50.52Z"
        },
        "emailAddress": "contact@evolvequest.com"
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}

```

## Creates a Application

**POST /application?fields=...**

### Description

This operation creates an Application entity.

### Mandatory Attributes

Mandatory Attributes	Rule
applicationOwner	
applicationOwner.@type	
commercialName	
description	
name	
@type	

### Usage samples

Create an Application

### Request

```

POST /application
Content-Type: application/json

{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "name": "Evolve Quest",
    "commercialName": "Evolve Quest",
    "description": "Evolve Quest mobile application",
    "redirectUrl": [
        "https://evolvequest.com/redirect"
    ],
    "jwksUri": "https://evolvequest.com/jwk",
}

```

```

    "category": "games",
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "externalIdentifier": [
        {
            "@type": "ExternalIdentifier",
            "id": "1234",
            "owner": "Developer",
            "externalIdentifierType": "ApplicationIdFromDeveloper"
        }
    ]
}

```

## Response

201

```

{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "id": "101",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
    "name": "Evolve Quest",
    "commercialName": "Evolve Quest",
    "description": "Evolve Quest mobile application",
    "redirectUrl": [
        "https://evolvequest.com/redirect"
    ],
    "jwksUri": "https://evolvequest.com/jwk",
    "category": "games",
    "operationalState": "enable",
    "approvalStatus": "approved",
    "digitalIdentity": {
        "@type": "ApiDigitalIdentity",
        "clientId": "evolve_quest_channelPartner15"
    },
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "privacyRightsRequestContact": [
        {
            "@type": "WebFormContactMedium",
            "id": "1",
            "preferred": false,
            "contactType": "contact web form",
            "validFor": {
                "startDateTime": "2024-04-12T23:20:50.52Z",
                "endDateTime": "2026-04-12T23:20:50.52Z"
            },
            "url": "https://contact.evolvequest.com"
        },
        {
            "@type": "EmailContactMedium",
            "id": "2",
            "preferred": true,
            "contactType": "corporate email",

```

```

        "validFor": [
            "startDateTime": "2020-04-12T23:20:50.52Z",
            "endDateTime": "2028-04-12T23:20:50.52Z"
        ],
        "emailAddress": "contact@evolvequest.com"
    }
],
"externalIdentifier": [
    {
        "@type": "ExternalIdentifier",
        "id": "1234",
        "owner": "Developer",
        "externalIdentifierType": "ApplicationIdFromDeveloper"
    }
],
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
}

```

## Updates partially a Application

**PATCH /application/{id}?fields=...**

### Description

This operation allows partial updates of an Application entity. Support of json/merge (<https://tools.ietf.org/html/rfc7396>) is mandatory, support of json/patch (<http://tools.ietf.org/html/rfc5789>) is optional. Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

### Patchable and Non Patchable Attributes

Non Patchable Attributes	Rule
apiConsumerRole	
applicationOwner	
approvalStatus	
channelPartner	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable
@type	@type is immutable

Patchable Attributes	Rule
approvalStatusReason	
category	
commercialName	

Patchable Attributes	Rule
description	
digitalIdentity	
externalIdentifier	
href	
id	
jwksUri	
logoUrl	
name	
operationalState	
privacyPolicyURL	
privacyRightsRequestContact	
redirectUrl	
resourceVersion	

## Usage samples

An example of patching an Application (Patch merge format with application/json content type).

### Request

```
PATCH /application/101
Content-Type: application/json

{
    "@type": "ApplicationOwner",
    "operationalState": "disable"
}
```

### Response

```
200

{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "id": "101",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
    "name": "Evolve Quest",
    "commercialName": "Evolve Quest",
    "description": "Evolve Quest mobile application",
    "redirectUrl": [
        "https://evolvequest.com/redirect"
    ],
    "jwksUri": "https://evolvequest.com/jwk",
```

```

    "category": "games",
    "operationalState": "disable",
    "approvalStatus": "approved",
    "digitalIdentity": {
        "@type": "ApiDigitalIdentity",
        "clientId": "evolve_quest_channelPartner15"
    },
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "privacyRightsRequestContact": [
        {
            "@type": "WebFormContactMedium",
            "id": "1",
            "preferred": false,
            "contactType": "contact web form",
            "validFor": {
                "startDateTime": "2024-04-12T23:20:50.52Z",
                "endDateTime": "2026-04-12T23:20:50.52Z"
            },
            "url": "https://contact.evolvequest.com"
        },
        {
            "@type": "EmailContactMedium",
            "id": "2",
            "preferred": true,
            "contactType": "corporate email",
            "validFor": {
                "startDateTime": "2020-04-12T23:20:50.52Z",
                "endDateTime": "2028-04-12T23:20:50.52Z"
            },
            "emailAddress": "contact@evolvequest.com"
        }
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}

```

An example of patching an Application (Patch merge format with application/merge-patch+json content type).

## Request

```

PATCH /application/101
Content-Type: application/merge-patch+json

{
    "@type": "ApplicationOwner",
    "operationalState": "disable"
}

```

## Response

```
200
```

```
{
```

```

"@type": "Application",
"@baseType": "LogicalResource",
"id": "101",
"href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
"name": "Evolve Quest",
"commercialName": "Evolve Quest",
"description": "Evolve Quest mobile application",
"redirectUrl": [
    "https://evolvequest.com/redirect"
],
"jwksUri": "https://evolvequest.com/jwk",
"category": "games",
"operationalState": "enable",
"approvalStatus": "approved",
"digitalIdentity": {
    "@type": "ApiDigitalIdentity",
    "clientId": "evolve_quest_channelPartner15"
},
"applicationOwner": {
    "@type": "PartyRoleRef",
    "id": "31"
},
"privacyRightsRequestContact": [
{
    "@type": "WebFormContactMedium",
    "id": "1",
    "preferred": false,
    "contactType": "contact web form",
    "validFor": {
        "startDateTime": "2024-04-12T23:20:50.52Z",
        "endDateTime": "2026-04-12T23:20:50.52Z"
    },
    "url": "https://contact.evolvequest.com"
},
{
    "@type": "EmailContactMedium",
    "id": "2",
    "preferred": true,
    "contactType": "corporate email",
    "validFor": {
        "startDateTime": "2020-04-12T23:20:50.52Z",
        "endDateTime": "2028-04-12T23:20:50.52Z"
    },
    "emailAddress": "contact@evolvequest.com"
}],
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}

```

An example of patching an Application (Json patch format with application/json-patch+json content type).

## Request

```

PATCH /application/101
Content-Type: application/json-patch+json

```

```
[
```

```
{
    "op": "replace",
    "path": "/operationalState",
    "value": "disable"
}
]
```

## Response

```
200

{
    "@type": "Application",
    "@baseType": "LogicalResource",
    "id": "101",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
    "name": "Evolve Quest",
    "commercialName": "Evolve Quest",
    "description": "Evolve Quest mobile application",
    "redirectUrl": [
        "https://evolvequest.com/redirect"
    ],
    "jwksUri": "https://evolvequest.com/jwk",
    "category": "games",
    "operationalState": "disable",
    "approvalStatus": "approved",
    "digitalIdentity": {
        "@type": "ApiDigitalIdentity",
        "clientId": "evolve_quest_channelPartner15"
    },
    "applicationOwner": {
        "@type": "PartyRoleRef",
        "id": "31"
    },
    "privacyRightsRequestContact": [
        {
            "@type": "WebFormContactMedium",
            "id": "1",
            "preferred": false,
            "contactType": "contact web form",
            "validFor": {
                "startDateTime": "2024-04-12T23:20:50.52Z",
                "endDateTime": "2026-04-12T23:20:50.52Z"
            },
            "url": "https://contact.evolvequest.com"
        },
        {
            "@type": "EmailContactMedium",
            "id": "2",
            "preferred": true,
            "contactType": "corporate email",
            "validFor": {
                "startDateTime": "2020-04-12T23:20:50.52Z",
                "endDateTime": "2028-04-12T23:20:50.52Z"
            },
            "emailAddress": "contact@evolvequest.com"
        }
    ],
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}
```

```
    }  
}
```

An example of patching an Application (Json patch query format with application/json-patch-query+json content type).

## Request

```
PATCH /application/101  
Content-Type: application/json-patch-query+json  
  
[  
  {  
    "op": "replace",  
    "path": "/externalIdentifier?id=1234",  
    "value":  
    {  
      "@type": "ExternalIdentifier",  
      "id": "1234",  
      "owner": "ChannelPartner",  
      "externalIdentifierType": "ApplicationIdFromCP"  
    }  
  }  
]
```

## Response

```
200  
  
{  
  "@type": "Application",  
  "@baseType": "LogicalResource",  
  "id": "101",  
  "href": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",  
  "name": "Evolve Quest",  
  "commercialName": "Evolve Quest",  
  "description": "Evolve Quest mobile application",  
  "redirectUrl": [  
    "https://evolvequest.com/redirect"  
  ],  
  "jwksUri": "https://evolvequest.com/jwk",  
  "category": "games",  
  "operationalState": "disable",  
  "approvalStatus": "approved",  
  "digitalIdentity": {  
    "@type": "ApiDigitalIdentity",  
    "clientId": "evolve_quest_channelPartner15"  
  },  
  "applicationOwner": {  
    "@type": "PartyRoleRef",  
    "id": "31"  
  },  
  "privacyRightsRequestContact": [{  
    "@type": "WebFormContactMedium",  
    "id": "1",  
    "preferred": false,  
  }]
```

```

    "contactType": "contact web form",
    "validFor": {
        "startDateTime": "2024-04-12T23:20:50.52Z",
        "endDateTime": "2026-04-12T23:20:50.52Z"
    },
    "url": "https://contact.evolvequest.com"
},
{
    "@type": "EmailContactMedium",
    "id": "2",
    "preferred": true,
    "contactType": "corporate email",
    "validFor": {
        "startDateTime": "2020-04-12T23:20:50.52Z",
        "endDateTime": "2028-04-12T23:20:50.52Z"
    },
    "emailAddress": "contact@evolvequest.com"
} ],
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
}

```

## Operations on ApplicationOwner

### List or find ApplicationOwner objects

**GET /applicationOwner?fields=...**

#### Description

This operation list ApplicationOwner entities. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

#### Usage samples

Retrieve a list of ApplicationOwner

#### Request

```

GET /applicationOwner
Content-Type: application/json

```

#### Response

```

200
[
{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-

```

```

api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
  "name": "Funtastic Games application owner role",
  "description": "Application owner role in the Open Gateway context",
  "engagedParty": [
    {
      "@type": "ApplicationOwnerOrganization",
      "@baseType": "Organization",
      "name": "Funtastic Games SA",
      "tradingName": "Funtastic Games",
      "isLegalEntity": true,
      "organizationType": "ForProfitOrganisation",
      "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
      "taxNumber": "00.623.904/0001-73",
      "organizationIdentification": [
        {
          "@type": "OrganizationIdentification",
          "identificationType": "CNPJ",
          "identificationId": "00.623.904/0001-73",
          "issuingAuthority": "Receita Federal"
        }
      ],
      "externalReference": [
        {
          "@type": "ExternalReference",
          "id": "funtastic_games_asp",
          "externalReferenceType": "organization name in channel partner
IT"
        }
      ],
      "registeredGeographicAddress": {
        "@type": "LightGeographicAddress",
        "@baseType": "GeographicAddress",
        "streetNr": "123",
        "streetName": "Avenida Paulista",
        "locality": "Para?so",
        "city": "S?o Paulo",
        "stateOrProvince": "S?o Paulo",
        "countryCode": {
          "@type": "ISO31661Alpha2StandardIdentifier",
          "@baseType": "StandardIdentifier",
          "value": "BR"
        },
        "postcode": "01311-000",
        "geographicSubAddress": [
          {
            "@type": "LightGeographicSubAddress",
            "@baseType": "GeographicSubAddress",
            "buildingName": "Fogo",
            "levelNumber": "Planta 4"
          }
        ],
        "contactMedium": [
          {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "emailAddress": "contact@funtasticgames.com"
          }
        ],
        "legalRepresentative": {
          "@type": "Individual",
          "familyName": "OConnor",
          "givenName": "Jane",
          "contactMedium": [

```

```
{
    "@type": "EmailContactMedium",
    "id": "1",
    "preferred": true,
    "mediumType": "email",
    "emailAddress": "jane@funtasticgames.com"
}
]
},
"dataProtectionOfficer": {
    "@type": "Organization",
    "name": "DPO Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "dpo@funtasticgames.com"
        }
    ]
},
"privacyManager": {
    "@type": "Organization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "privacy@funtasticgames.com"
        }
    ]
},
"localRepresentative": [
{
    "@type": "ApplicationOwnerRelatedLocalRepresentative",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "value": "EU"
    },
    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Garc?a",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "jgarcia",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jgarcia@funtasticgames.com"
            }
        ]
    }
}],
"dataProtectionRights": {
    "@type": "Organization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [

```

```

        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
}
},
"status": "active",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
]
]

```

Retrieve a list of ApplicationOwner with filter selection.

## Request

```

GET /applicationOwner?approvalStatus=approved&fields=approvalStatus
Content-Type: application/json

```

## Response

```

200
[
    {
        "@type": "ApplicationOwner",
        "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
        "id": "31",
        "approvalStatus": "approved"
    }
]

```

## Retrieves a ApplicationOwner by ID

```
GET /applicationOwner/{id}?fields=...
```

### Description

This operation retrieves an ApplicationOwner entity. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

### Usage samples

Retrieve a completed ApplicationOwner from its identifier

## Request

```
GET /applicationOwner/31
Content-Type: application/json
```

## Response

```
200

{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games SA",
        "tradingName": "Funtastic Games",
        "isLegalEntity": true,
        "organizationType": "ForProfitOrganisation",
        "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
        "taxNumber": "00.623.904/0001-73",
        "organizationIdentification": [
            {
                "@type": "OrganizationIdentification",
                "identificationType": "CNPJ",
                "identificationId": "00.623.904/0001-73",
                "issuingAuthority": "Receita Federal"
            }
        ],
        "externalReference": [
            {
                "@type": "ExternalReference",
                "id": "funtastic_games_asp",
                "externalReferenceType": "organization name in channel partner IT"
            }
        ],
        "registeredGeographicAddress": {
            "@type": "LightGeographicAddress",
            "@baseType": "GeographicAddress",
            "streetNr": "123",
            "streetName": "Avenida Paulista",
            "locality": "Para?so",
            "city": "S?o Paulo",
            "stateOrProvince": "S?o Paulo",
            "countryCode": {
                "@type": "ISO31661Alpha2StandardIdentifier",
                "@baseType": "StandardIdentifier",
                "value": "BR"
            },
            "postcode": "01311-000",
            "geographicSubAddress": [
                {
                    "@type": "LightGeographicSubAddress",
                    "@baseType": "GeographicSubAddress",
                    "value": "Ap. 1001"
                }
            ]
        }
    }
}
```

```
        "buildingName": "Fogo",
        "levelNumber": "Planta 4"
    }
},
"contactMedium": [
{
    "@type": "EmailContactMedium",
    "id": "1",
    "preferred": true,
    "emailAddress": "contact@funtasticgames.com"
}
],
"legalRepresentative": {
    "@type": "Individual",
    "familyName": "OConnor",
    "givenName": "Jane",
    "contactMedium": [
    {
        "@type": "EmailContactMedium",
        "id": "1",
        "preferred": true,
        "mediumType": "email",
        "emailAddress": "jane@funtasticgames.com"
    }
]
},
"dataProtectionOfficer": {
    "@type": "Organization",
    "name": "DPO Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
    {
        "@type": "EmailContactMedium",
        "id": "1",
        "preferred": true,
        "mediumType": "email",
        "emailAddress": "dpo@funtasticgames.com"
    }
]
},
"privacyManager": {
    "@type": "Organization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
    {
        "@type": "EmailContactMedium",
        "id": "1",
        "preferred": true,
        "mediumType": "email",
        "emailAddress": "privacy@funtasticgames.com"
    }
]
},
"localRepresentative": [
{
    "@type": "ApplicationOwnerRelatedLocalRepresentative",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "value": "EU"
    },
    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Juan"
    }
}
]
```

```

    "givenName": "Garc?a",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "jgarcia",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "jgarcia@funtasticgames.com"
        }
    ]
},
"dataProtectionRights": {
    "@type": "Organization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
},
"status": "inactive",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
}

```

## Creates a ApplicationOwner

**POST /applicationOwner?fields=...**

### Description

This operation creates an ApplicationOwner entity.

### Mandatory Attributes

Mandatory Attributes	Rule
description	
engagedParty	
engagedParty.@type	
engagedParty.contactMedium	
engagedParty.contactMedium.@type	
engagedParty.contactMedium.url	

Mandatory Attributes	Rule
engagedParty.name	
engagedParty.organizationIdentification	
engagedParty.organizationIdentification.@type	
engagedParty.organizationIdentification.identificationId	
engagedParty.registeredGeographicAddress	
engagedParty.registeredGeographicAddress.@type	
engagedParty.registeredGeographicAddress.city	
engagedParty.registeredGeographicAddress.countryCode	
engagedParty.registeredGeographicAddress.countryCode.@type	
engagedParty.registeredGeographicAddress.countryCode.value	
engagedParty.taxNumber	
engagedParty.tradingName	
name	
@type	

## Usage samples

Create an ApplicationOwner

### Request

```
POST /applicationOwner
Content-Type: application/json

{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games SA",
        "tradingName": "Funtastic Games",
        "isLegalEntity": true,
        "organizationType": "ForProfitOrganisation",
        "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
        "taxNumber": "00.623.904/0001-73",
    }
}
```

```
"organizationIdentification": [
    {
        "@type": "OrganizationIdentification",
        "identificationType": "CNPJ",
        "identificationId": "00.623.904/0001-73",
        "issuingAuthority": "Receita Federal"
    }
],
"externalReference": [
    {
        "@type": "ExternalReference",
        "id": "funtastic_games_asp",
        "externalReferenceType": "organization name in channel partner IT"
    }
],
"registeredGeographicAddress": {
    "@type": "LightGeographicAddress",
    "@baseType": "GeographicAddress",
    "streetNr": "123",
    "streetName": "Avenida Paulista",
    "locality": "Para?so",
    "city": "S?o Paulo",
    "stateOrProvince": "S?o Paulo",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "@baseType": "StandardIdentifier",
        "value": "BR"
    },
    "postcode": "01311-000",
    "geographicSubAddress": [
        {
            "@type": "LightGeographicSubAddress",
            "@baseType": "GeographicSubAddress",
            "buildingName": "Fogo",
            "levelNumber": "Planta 4"
        }
    ],
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "emailAddress": "contact@funtasticgames.com"
        }
    ],
    "legalRepresentative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "OConnor",
        "givenName": "Jane",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jane@funtasticgames.com"
            }
        ]
    },
    "dataProtectionOfficer": {
        "@type": "ApplicationOwnerRelatedOrganization",
        "name": "DPO Office",
        "organizationType": "OrganisationalUnit",
        "externalReference": [
            {
                "id": "DPO_Office_asp",
                "externalReferenceType": "organization name in channel partner IT"
            }
        ]
    }
}
```

```
"contactMedium": [
    {
        "@type": "EmailContactMedium",
        "id": "1",
        "preferred": true,
        "contactType": "email",
        "emailAddress": "dpo@funtasticgames.com"
    }
],
},
"privacyManager": {
    "@type": "ApplicationOwnerRelatedOrganization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "privacy@funtasticgames.com"
        }
    ]
},
"localRepresentative": [
{
    "@type": "ApplicationOwnerRelatedLocalRepresentative",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "value": "EU"
    },
    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Garc?a",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "jgarcia",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jgarcia@funtasticgames.com"
            }
        ]
    }
},
],
"dataProtectionRights": {
    "@type": "ApplicationOwnerRelatedOrganization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
}
}
```

## Response

```
201

{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games SA",
        "tradingName": "Funtastic Games",
        "isLegalEntity": true,
        "organizationType": "ForProfitOrganisation",
        "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
        "taxNumber": "00.623.904/0001-73",
        "organizationIdentification": [
            {
                "@type": "organizationIdentification",
                "identificationType": "CNPJ",
                "identificationId": "00.623.904/0001-73",
                "issuingAuthority": "Receita Federal"
            }
        ],
        "externalReference": [
            {
                "@type": "ExternalReference",
                "id": "funtastic_games_asp",
                "externalReferenceType": "organization name in channel partner IT"
            }
        ],
        "registeredGeographicAddress": {
            "@type": "LightGeographicAddress",
            "@baseType": "GeographicAddress",
            "streetNr": "123",
            "streetName": "Avenida Paulista",
            "locality": "Para?so",
            "city": "S?o Paulo",
            "stateOrProvince": "S?o Paulo",
            "countryCode": {
                "@type": "ISO31661Alpha2StandardIdentifier",
                "@baseType": "StandardIdentifier",
                "value": "BR"
            },
            "postcode": "01311-000",
            "geographicSubAddress": {
                "@type": "LightGeographicSubAddress",
                "@baseType": "GeographicSubAddress",
                "buildingName": "Fogo",
                "levelNumber": "Planta 4"
            }
        },
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "email": "info@funtasticgames.com.br"
            }
        ]
    }
}
```

```
        "id": "1",
        "preferred": true,
        "emailAddress": "contact@funtasticgames.com"
    }
],
"legalRepresentative": {
    "@type": "Individual",
    "familyName": "OConnor",
    "givenName": "Jane",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "jane@funtasticgames.com"
        }
    ]
},
"dataProtectionOfficer": {
    "@type": "Organization",
    "name": "DPO Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "dpo@funtasticgames.com"
        }
    ]
},
"privacyManager": {
    "@type": "Organization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "privacy@funtasticgames.com"
        }
    ]
},
"localRepresentative": [
{
    "@type": "ApplicationOwnerRelatedLocalRepresentative",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "value": "EU"
    },
    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Garc?a",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "jgarcia",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jgarcia@funtasticgames.com"
            }
        ]
    }
}
]
```

```

        "emailAddress": "jgarcia@funtasticgames.com"
    }
]
}
},
"dataProtectionRights": {
    "@type": "Organization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
},
"status": "active",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
}

```

## Updates partially a ApplicationOwner

**PATCH /applicationOwner/{id}?fields=...**

### Description

This operation allows partial updates of an ApplicationOwner entity. Support of json/merge (<https://tools.ietf.org/html/rfc7396>) is mandatory, support of json/patch (<http://tools.ietf.org/html/rfc5789>) is optional. Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

### Patchable and Non Patchable Attributes

Non Patchable Attributes	Rule
approvalStatus	
approvalStatusReason	
channelPartner	
href	
id	
validFor	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable

Non Patchable Attributes	Rule
@type	@type is immutable

Patchable Attributes	Rule
description	
engagedParty	
name	
status	
statusReason	

## Usage samples

An example of patching an ApplicationOwner (Patch merge format with application/json content type).

### Request

```
PATCH /applicationOwner/31
Content-Type: application/json

{
    "@type": "ApplicationOwner",
    "status": "inactive"
}
```

### Response

```
200

{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games Worldwide SA",
        "tradingName": "Funtastic Games",
        "isLegalEntity": true,
        "organizationType": "ForProfitOrganisation",
        "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
        "taxNumber": "00.623.904/0001-73",
        "organizationIdentification": [
            {
                "@type": "OrganizationIdentification",
                "identificationType": "CNPJ",
                "identificationId": "00.623.904/0001-73",
                "issuingAuthority": "Receita Federal"
            }
        ]
    }
}
```

```
        }
    ],
    "externalReference": [
        {
            "@type": "ExternalReference",
            "id": "funtastic_games_asp",
            "externalReferenceType": "organization name in channel partner IT"
        }
    ],
    "registeredGeographicAddress": {
        "@type": "LightGeographicAddress",
        "@baseType": "GeographicAddress",
        "streetNr": "123",
        "streetName": "Avenida Paulista",
        "locality": "Para?so",
        "city": "S?o Paulo",
        "stateOrProvince": "S?o Paulo",
        "countryCode": {
            "@type": "ISO31661Alpha2StandardIdentifier",
            "@baseType": "StandardIdentifier",
            "value": "BR"
        },
        "postcode": "01311-000",
        "geographicSubAddress": [
            {
                "@type": "LightGeographicSubAddress",
                "@baseType": "GeographicSubAddress",
                "buildingName": "Fogo",
                "levelNumber": "Planta 4"
            }
        ],
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "emailAddress": "contact@funtasticgames.com"
            }
        ],
        "legalRepresentative": {
            "@type": "Individual",
            "familyName": "OConnor",
            "givenName": "Jane",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "1",
                    "preferred": true,
                    "mediumType": "email",
                    "emailAddress": "jane@funtasticgames.com"
                }
            ]
        },
        "dataProtectionOfficer": {
            "@type": "Organization",
            "name": "DPO Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "preferred": true,
                    "mediumType": "email",
                    "emailAddress": "dpo@funtasticgames.com"
                }
            ]
        }
    }
]
```

```

        }
    ],
},
"privacyManager": {
    "@type": "Organization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "privacy@funtasticgames.com"
        }
    ]
},
"localRepresentative": [
    {
        "@type": "ApplicationOwnerRelatedLocalRepresentative",
        "countryCode": {
            "@type": "ISO31661Alpha2StandardIdentifier",
            "value": "EU"
        },
        "representative": {
            "@type": "ApplicationOwnerRelatedIndividual",
            "familyName": "Juan",
            "givenName": "Garc?a",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "jgarcia",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "jgarcia@funtasticgames.com"
                }
            ]
        }
    }
],
"dataProtectionRights": {
    "@type": "Organization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
},
"status": "inactive",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
}

```

An example of patching an ApplicationOwner (Patch merge format with application/merge-patch+json content type).

## Request

```
PATCH /applicationOwner/31
Content-Type: application/merge-patch+json

{
    "@type": "ApplicationOwner",
    "status": "inactive"
}
```

## Response

```
200

{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games Worldwide SA",
        "tradingName": "Funtastic Games",
        "isLegalEntity": true,
        "organizationType": "ForProfitOrganisation",
        "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
        "taxNumber": "00.623.904/0001-73",
        "organizationIdentification": [
            {
                "@type": "OrganizationIdentification",
                "identificationType": "CNPJ",
                "identificationId": "00.623.904/0001-73",
                "issuingAuthority": "Receita Federal"
            }
        ],
        "externalReference": [
            {
                "@type": "ExternalReference",
                "id": "funtastic_games_asp",
                "externalReferenceType": "organization name in channel partner IT"
            }
        ],
        "registeredGeographicAddress": {
            "@type": "LightGeographicAddress",
            "@baseType": "GeographicAddress",
            "streetNr": "123",
            "streetName": "Avenida Paulista",
            "locality": "Para?so",
            "city": "S?o Paulo",
            "stateOrProvince": "S?o Paulo",
            "countryCode": {
                "@type": "ISO31661Alpha2StandardIdentifier",
                "@baseType": "StandardIdentifier",
                "value": "BR"
            },
        }
    }
}
```

```
        "postcode": "01311-000",
        "geographicSubAddress":
        {
            "@type": "LightGeographicSubAddress",
            "@baseType": "GeographicSubAddress",
            "buildingName": "Fogo",
            "levelNumber": "Planta 4"
        }
    },
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "emailAddress": "contact@funtasticgames.com"
        }
    ],
    "legalRepresentative": {
        "@type": "Individual",
        "familyName": "OConnor",
        "givenName": "Jane",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "mediumType": "email",
                "emailAddress": "jane@funtasticgames.com"
            }
        ]
    },
    "dataProtectionOfficer": {
        "@type": "Organization",
        "name": "DPO Office",
        "organizationType": "OrganisationalUnit",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "preferred": true,
                "mediumType": "email",
                "emailAddress": "dpo@funtasticgames.com"
            }
        ]
    },
    "privacyManager": {
        "@type": "Organization",
        "name": "Privacy Office",
        "organizationType": "OrganisationalUnit",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "preferred": true,
                "mediumType": "email",
                "emailAddress": "privacy@funtasticgames.com"
            }
        ]
    },
    "localRepresentative": [
        {
            "@type": "ApplicationOwnerRelatedLocalRepresentative",
            "countryCode": {
                "@type": "ISO31661Alpha2StandardIdentifier",
                "value": "EU"
            }
        }
    ],
    "localAddress": [
        {
            "@type": "PhysicalAddress"
        }
    ]
}
```

```

    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Garc?a",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "jgarcia",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jgarcia@funtasticgames.com"
            }
        ]
    },
    "dataProtectionRights": {
        "@type": "Organization",
        "name": "Data Protection Rights",
        "organizationType": "OrganisationalUnit",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "preferred": true,
                "mediumType": "email",
                "emailAddress": "rights@funtasticgames.com"
            }
        ]
    }
},
"status": "inactive",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}
}

```

An example of patching an ApplicationOwner (Json patch format with application/json-patch+json content type).

## Request

```

PATCH /applicationOwner/31
Content-Type: application/json-patch+json

[
    {
        "op": "replace",
        "path": "/status",
        "value": "inactive"
    }
]

```

## Response

```
200
```

```
{  
    "@type": "ApplicationOwner",  
    "@baseType": "PartyRole",  
    "id": "31",  
    "href": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",  
    "name": "Funtastic Games application owner role",  
    "description": "Application owner role in the Open Gateway context",  
    "engagedParty": [  
        {"@type": "ApplicationOwnerOrganization",  
         "@baseType": "Organization",  
         "name": "Funtastic Games Worldwide SA",  
         "tradingName": "Funtastic Games",  
         "isLegalEntity": true,  
         "organizationType": "ForProfitOrganisation",  
         "privacyPolicyURL": "https://www.funtasticgames.com/privacy",  
         "taxNumber": "00.623.904/0001-73",  
         "organizationIdentification": [  
             {"@type": "OrganizationIdentification",  
              "identificationType": "CNPJ",  
              "identificationId": "00.623.904/0001-73",  
              "issuingAuthority": "Receita Federal"  
            },  
          ],  
          "externalReference": [  
              {"@type": "ExternalReference",  
               "id": "funtastic_games_asp",  
               "externalReferenceType": "organization name in channel partner IT"  
            }  
          ],  
          "registeredGeographicAddress": {  
              "@type": "LightGeographicAddress",  
              "@baseType": "GeographicAddress",  
              "streetNr": "123",  
              "streetName": "Avenida Paulista",  
              "locality": "Para?so",  
              "city": "S?o Paulo",  
              "stateOrProvince": "S?o Paulo",  
              "countryCode": {  
                  "@type": "ISO31661Alpha2StandardIdentifier",  
                  "@baseType": "StandardIdentifier",  
                  "value": "BR"  
                },  
              "postcode": "01311-000",  
              "geographicSubAddress": [  
                  {"@type": "LightGeographicSubAddress",  
                   "@baseType": "GeographicSubAddress",  
                   "buildingName": "Fogo",  
                   "levelNumber": "Planta 4"  
                 },  
              ],  
              "contactMedium": [  
                  {"@type": "EmailContactMedium",  
                   "id": "1",  
                   "preferred": true,  
                   "emailAddress": "contact@funtasticgames.com"  
                 }  
              ],  
              "legalRepresentative": {  
                }  
            }  
          ]  
        }  
      ]  
    }  
  ]  
}
```

```

    "@type": "Individual",
    "familyName": "OConnor",
    "givenName": "Jane",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "jane@funtasticgames.com"
        }
    ]
},
"dataProtectionOfficer": {
    "@type": "Organization",
    "name": "DPO Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "dpo@funtasticgames.com"
        }
    ]
},
"privacyManager": {
    "@type": "Organization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "privacy@funtasticgames.com"
        }
    ]
},
"localRepresentative": [
    {
        "@type": "ApplicationOwnerRelatedLocalRepresentative",
        "countryCode": {
            "@type": "ISO31661Alpha2StandardIdentifier",
            "value": "EU"
        },
        "representative": {
            "@type": "ApplicationOwnerRelatedIndividual",
            "familyName": "Juan",
            "givenName": "Garc?a",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "jgarcia",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "jgarcia@funtasticgames.com"
                }
            ]
        }
    ],
    "dataProtectionRights": {
        "@type": "Organization",
        "name": "Data Protection Rights",
        "organizationType": "OrganisationalUnit",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "dprights",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "dprights@funtasticgames.com"
            }
        ]
    }
]
}

```

```

    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "preferred": true,
            "mediumType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
},
"status": "inactive",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
}

```

An example of patching an ApplicationOwner (Json patch query format with application/json-patch-query+json content type).

## Request

```

PATCH /applicationOwner/31
Content-Type: application/json-patch-query+json

[
    {
        "op": "replace",
        "path": "/engagedParty/contactMedium?id=1",
        "value":
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "emailAddress": "newContact@funtasticgames.com"
        }
    }
]

```

## Response

```

200
{
    "@type": "ApplicationOwner",
    "@baseType": "PartyRole",
    "id": "31",
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
    "name": "Funtastic Games application owner role",
    "description": "Application owner role in the Open Gateway context",
    "engagedParty": {
        "@type": "ApplicationOwnerOrganization",
        "@baseType": "Organization",
        "name": "Funtastic Games Worldwide SA",
    }
}

```

```
"tradingName": "Funtastic Games",
"isLegalEntity": true,
"organizationType": "ForProfitOrganisation",
"privacyPolicyURL": "https://www.funtasticgames.com/privacy",
"taxNumber": "00.623.904/0001-73",
"organizationIdentification": [
    {
        "@type": "OrganizationIdentification",
        "identificationType": "CNPJ",
        "identificationId": "00.623.904/0001-73",
        "issuingAuthority": "Receita Federal"
    }
],
"externalReference": [
    {
        "@type": "ExternalReference",
        "id": "funtastic_games_asp",
        "externalReferenceType": "organization name in channel partner IT"
    }
],
"registeredGeographicAddress": {
    "@type": "LightGeographicAddress",
    "@baseType": "GeographicAddress",
    "streetNr": "123",
    "streetName": "Avenida Paulista",
    "locality": "Para?so",
    "city": "S?o Paulo",
    "stateOrProvince": "S?o Paulo",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "@baseType": "StandardIdentifier",
        "value": "BR"
    },
    "postcode": "01311-000",
    "geographicSubAddress": [
        {
            "@type": "LightGeographicSubAddress",
            "@baseType": "GeographicSubAddress",
            "buildingName": "Fogo",
            "levelNumber": "Planta 4"
        }
    ],
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "emailAddress": "contact@funtasticgames.com"
        }
    ],
    "legalRepresentative": {
        "@type": "Individual",
        "familyName": "OConnor",
        "givenName": "Jane",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "mediumType": "email",
                "emailAddress": "jane@funtasticgames.com"
            }
        ]
    }
]
```

```

        },
        "dataProtectionOfficer": {
            "@type": "Organization",
            "name": "DPO Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "preferred": true,
                    "mediumType": "email",
                    "emailAddress": "dpo@funtasticgames.com"
                }
            ]
        },
        "privacyManager": {
            "@type": "Organization",
            "name": "Privacy Office",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "preferred": true,
                    "mediumType": "email",
                    "emailAddress": "privacy@funtasticgames.com"
                }
            ]
        },
        "localRepresentative": [
            {
                "@type": "ApplicationOwnerRelatedLocalRepresentative",
                "countryCode": {
                    "@type": "ISO31661Alpha2StandardIdentifier",
                    "value": "EU"
                },
                "representative": {
                    "@type": "ApplicationOwnerRelatedIndividual",
                    "familyName": "Juan",
                    "givenName": "Garc?a",
                    "contactMedium": [
                        {
                            "@type": "EmailContactMedium",
                            "id": "jgarcia",
                            "preferred": true,
                            "contactType": "email",
                            "emailAddress": "jgarcia@funtasticgames.com"
                        }
                    ]
                }
            }
        ],
        "dataProtectionRights": {
            "@type": "Organization",
            "name": "Data Protection Rights",
            "organizationType": "OrganisationalUnit",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "preferred": true,
                    "mediumType": "email",
                    "emailAddress": "rights@funtasticgames.com"
                }
            ]
        },
        "status": "active",
    }
}

```

```

    "approvalStatus": "pendingApproval",
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}

```

## Operations on Monitor

### Retrieves a Monitor by ID

**GET /monitor/{id}?fields=...**

#### Description

This operation retrieves a Monitor entity. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

#### Usage samples

Retrieve a Monitor from its identifier

#### Request

```

GET /monitor/987654
Content-Type: application/json

```

#### Response

```

200
{
    "@type": "Monitor",
    "id": "987654",
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987654",
    "state": "Completed",
    "request": {
        "method": "POST",
        "to": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/application",
        "body": {
            "@type": "Application",
            "@baseType": "LogicalResource",
            "name": "Evolve Quest",
            "commercialName": "Evolve Quest",
            "description": "Evolve Quest mobile application",
            "redirectUrl": [
                "https://evolvequest.com/redirect"
            ],
            "jwksUri": "https://evolvequest.com/jwk",
            "category": "games",
            "operationalState": "enable",
            "digitalIdentity": {
                "@type": "ApiDigitalIdentity",
                "clientId": "evolve_quest_channelPartner15"
            }
        }
    }
}

```

```

        },
        "applicationOwner": {
            "@type": "PartyRoleRef",
            "id": "31"
        }
    }
},
"response": {
    "statusCode": "201",
    "body": {
        "@type": "Application",
        "@baseType": "LogicalResource",
        "id": "101",
        "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",
        "name": "Evolve Quest",
        "commercialName": "Evole Quest",
        "description": "Evolve Quest mobile application",
        "redirectUrl": [
            "https://evolvequest.com/redirect"
        ],
        "jwksUri": "https://evolvequest.com/jwk",
        "category": "games",
        "operationalState": "enable",
        "approvalStatus": "approved",
        "digitalIdentity": {
            "@type": "ApiDigitalIdentity",
            "clientId": "evolve_quest_channelPartner15"
        },
        "applicationOwner": {
            "@type": "PartyRoleRef",
            "id": "31"
        },
        "channelPartner": {
            "@type": "PartyRoleRef",
            "id": "15"
        }
    }
},
"sourceHref": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101"
}

```

## List or find Monitor objects

**GET /monitor?fields=...**

### Description

This operation list Monitor entities. Attribute selection is enabled for all first level attributes. Filtering may be available depending on the compliance level supported by an implementation.

### Usage samples

Retrieve a list of Monitor

### Request

```
GET /monitor  
Content-Type: application/json
```

## Response

```
200  
[  
  {  
    "@type": "Monitor",  
    "id": "987654",  
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987654",  
    "state": "Completed",  
    "request": {  
      "method": "POST",  
      "to": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/application",  
      "body": {  
        "@type": "Application",  
        "@baseType": "LogicalResource",  
        "name": "Evolve Quest",  
        "commercialName": "Evolve Quest",  
        "description": "Evolve Quest mobile application",  
        "redirectUrl": [  
          "https://evolvequest.com/redirect"  
        ],  
        "jwksUri": "https://evolvequest.com/jwk",  
        "category": "games",  
        "operationalState": "enable",  
        "digitalIdentity": {  
          "@type": "ApiDigitalIdentity",  
          "clientId": "evolve_quest_channelPartner15"  
        },  
        "applicationOwner": {  
          "@type": "PartyRoleRef",  
          "id": "31"  
        }  
      }  
    },  
    "response": {  
      "statusCode": "201",  
      "body": {  
        "@type": "Application",  
        "@baseType": "LogicalResource",  
        "id": "101",  
        "href": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101",  
        "name": "Evolve Quest",  
        "commercialName": "Evolve Quest",  
        "description": "Evolve Quest mobile application",  
        "redirectUrl": [  
          "https://evolvequest.com/redirect"  
        ],  
        "jwksUri": "https://evolvequest.com/jwk",  
        "category": "games",  
        "operationalState": "enable",  
        "approvalStatus": "approved",  
        "digitalIdentity": {  
          "@type": "ApiDigitalIdentity",  
          "clientId": "evolve_quest_channelPartner15"  
        }  
      }  
    }  
  }  
]
```

```
        },
        "applicationOwner": {
            "@type": "PartyRoleRef",
            "id": "31"
        },
        "channelPartner": {
            "@type": "PartyRoleRef",
            "id": "15"
        }
    }
},
"sourceHref": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101"
},
{
    "@type": "Monitor",
    "id": "987653",
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987653",
    "state": "Completed",
    "request": {
        "method": "POST",
        "to": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner",
        "body": {
            "@type": "ApplicationOwner",
            "@baseType": "PartyRole",
            "name": "Funtastic Games application owner role",
            "description": "Application owner role in the Open Gateway context",
            "engagedParty": {
                "@type": "ApplicationOwnerOrganization",
                "@baseType": "Organization",
                "name": "Funtastic Games SA",
                "tradingName": "Funtastic Games",
                "isLegalEntity": true,
                "organizationType": "ForProfitOrganisation",
                "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
                "taxNumber": "00.623.904/0001-73",
                "organizationIdentification": [
                    {
                        "@type": "OrganizationIdentification",
                        "identificationType": "CNPJ",
                        "identificationId": "00.623.904/0001-73",
                        "issuingAuthority": "Receita Federal"
                    }
                ],
                "externalReference": [
                    {
                        "@type": "ExternalReference",
                        "id": "funtastic_games_asp",
                        "externalReferenceType": "organization name in channel
partner IT"
                    }
                ],
                "registeredGeographicAddress": {
                    "@type": "LightGeographicAddress",
                    "@baseType": "GeographicAddress",
                    "streetNr": "123",
                    "streetName": "Avenida Paulista",
                    "locality": "Para?so",
                    "city": "S?o Paulo",
                    "stateOrProvince": "S?o Paulo",
                    "countryCode": {
                        "@type": "ISO31661Alpha2StandardIdentifier",

```

```
        "@baseType": "StandardIdentifier",
        "value": "BR"
    },
    "postcode": "01311-000",
    "geographicSubAddress":
    {
        "@type": "LightGeographicSubAddress",
        "@baseType": "GeographicSubAddress",
        "buildingName": "Fogo",
        "levelNumber": "Planta 4"
    }
},
"contactMedium": [
{
    "@type": "EmailContactMedium",
    "id": "1",
    "preferred": true,
    "emailAddress": "contact@funtasticgames.com"
}
],
"legalRepresentative": {
    "@type": "ApplicationOwnerRelatedIndividual",
    "familyName": "OConnor",
    "givenName": "Jane",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "jane@funtasticgames.com"
        }
    ]
},
"dataProtectionOfficer": {
    "@type": "ApplicationOwnerRelatedOrganization",
    "name": "DPO Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "dpo@funtasticgames.com"
        }
    ]
},
"privacyManager": {
    "@type": "ApplicationOwnerRelatedOrganization",
    "name": "Privacy Office",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "privacy@funtasticgames.com"
        }
    ]
},
"localRepresentative": [ {
```

```

        "@type": "ApplicationOwnerRelatedLocalRepresentative",
        "countryCode": {
            "@type": "ISO31661Alpha2StandardIdentifier",
            "value": "EU"
        },
        "representative": {
            "@type": "ApplicationOwnerRelatedIndividual",
            "familyName": "Juan",
            "givenName": "Garc?a",
            "contactMedium": [
                {
                    "@type": "EmailContactMedium",
                    "id": "jgarcia",
                    "preferred": true,
                    "contactType": "email",
                    "emailAddress": "jgarcia@funtasticgames.com"
                }
            ]
        }
    ],
    "status": "active",
    "channelPartner": {
        "@type": "PartyRoleRef",
        "id": "15"
    }
}
},
"response": {
    "statusCode": "201",
    "body": {
        "@type": "ApplicationOwner",
        "@baseType": "PartyRole",
        "id": "31",
        "href": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31",
        "name": "Funtastic Games application owner role",
        "description": "Application owner role in the Open Gateway context",
        "engagedParty": {
            "@type": "ApplicationOwnerOrganization",
            "@baseType": "Organization",
            "name": "Funtastic Games SA",
            "tradingName": "Funtastic Games",
            "isLegalEntity": true,
            "organizationType": "ForProfitOrganisation",
            "privacyPolicyURL": "https://www.funtasticgames.com/privacy",
            "taxNumber": "00.623.904/0001-73",
            "organizationIdentification": [
                {
                    "@type": "organizationIdentification",
                    "identificationType": "CNPJ",
                    "identificationId": "00.623.904/0001-73",
                    "issuingAuthority": "Receita Federal"
                }
            ],
            "externalReference": [
                {
                    "@type": "ExternalReference",
                    "id": "funtastic_games_asp",
                    "externalReferenceType": "organization name in channel
partner IT"
                }
            ]
        }
    }
}

```

```
"registeredGeographicAddress": {
    "@type": "LightGeographicAddress",
    "@baseType": "GeographicAddress",
    "streetNr": "123",
    "streetName": "Avenida Paulista",
    "locality": "Para?so",
    "city": "S?o Paulo",
    "stateOrProvince": "S?o Paulo",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "@baseType": "StandardIdentifier",
        "value": "BR"
    },
    "postcode": "01311-000",
    "geographicSubAddress": [
        {
            "@type": "LightGeographicSubAddress",
            "@baseType": "GeographicSubAddress",
            "buildingName": "Fogo",
            "levelNumber": "Planta 4"
        }
    ],
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "emailAddress": "contact@funtasticgames.com"
        }
    ],
    "legalRepresentative": {
        "@type": "Individual",
        "familyName": "OConnor",
        "givenName": "Jane",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jane@funtasticgames.com"
            }
        ]
    },
    "dataProtectionOfficer": {
        "@type": "Organization",
        "name": "DPO Office",
        "organizationType": "OrganisationalUnit",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "1",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "dpo@funtasticgames.com"
            }
        ]
    },
    "privacyManager": {
        "@type": "Organization",
        "name": "Privacy Office",
        "organizationType": "OrganisationalUnit",
        "contactMedium": [

```

```
{
    "@type": "EmailContactMedium",
    "id": "1",
    "preferred": true,
    "contactType": "email",
    "emailAddress": "privacy@funtasticgames.com"
}
],
},
"localRepresentative": [
    "@type": "ApplicationOwnerRelatedLocalRepresentative",
    "countryCode": {
        "@type": "ISO31661Alpha2StandardIdentifier",
        "value": "EU"
    },
    "representative": {
        "@type": "ApplicationOwnerRelatedIndividual",
        "familyName": "Juan",
        "givenName": "Garc?a",
        "contactMedium": [
            {
                "@type": "EmailContactMedium",
                "id": "jgarcia",
                "preferred": true,
                "contactType": "email",
                "emailAddress": "jgarcia@funtasticgames.com"
            }
        ]
    }
],
},
"dataProtectionRights": {
    "@type": "Organization",
    "name": "Data Protection Rights",
    "organizationType": "OrganisationalUnit",
    "contactMedium": [
        {
            "@type": "EmailContactMedium",
            "id": "1",
            "preferred": true,
            "contactType": "email",
            "emailAddress": "rights@funtasticgames.com"
        }
    ]
},
},
"status": "active",
"approvalStatus": "pendingApproval",
"channelPartner": {
    "@type": "PartyRoleRef",
    "id": "15"
}
},
},
"sourceHref": "/tmf-
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31"
}
]
```

Retrieve a list of Monitor with filter selection.

## Request

```
GET /monitor?state=Completed&fields=state,sourceHref  
Content-Type: application/json
```

## Response

```
200  
  
[  
  {  
    "@type": "Monitor",  
    "id": "987654",  
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987654",  
    "state": "Completed",  
    "sourceHref": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/application/101"  
  },  
  {  
    "@type": "Monitor",  
    "id": "987653",  
    "href": "/tmf-api/openGatewayOperateAPIOnboardingAndOrdering/v5/monitor/987653",  
    "state": "Completed",  
    "sourceHref": "/tmf-  
api/openGatewayOperateAPIOnboardingAndOrdering/v5/applicationOwner/31"  
  }  
]
```

# API NOTIFICATIONS

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

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

## Register listener

**POST /hub**

### Description

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

### Behavior

Returns HTTP/1.1 status code 201 if the request was successful.

### Usage Samples

Here's an example of a request for registering a listener.

#### Request

```
POST /api/hub  
Accept: application/json  
  
{  
    "callback": "http://in.listener.com"  
}
```

#### Response

```
201  
Content-Type: application/json  
Location: /api/hub/42  
  
{  
    "id": "42",  
    "callback": "http://in.listener.com",  
    "query": ""  
}
```

## Unregister listener

**DELETE /hub/{id}**

### Description

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

### Behavior

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

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

### Usage Samples

Here's an example of a request for un-registering a listener.

#### Request

```
DELETE /api/hub/42  
Accept: application/json
```

#### Response

```
204
```

## Publish Event to listener

**POST /client/listener**

### Description

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

Provides to a registered listener the description of the event that was raised. The /client/listener url is the callback url passed when registering the listener.

### Behavior

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

### Usage Samples

Here's an example of a notification received by the listener. In this example "EVENT TYPE" should be replaced by one of the notification types supported by this API (see Notification resources Models section) and EVENT BODY refers to the data structure of the given notification type.

#### Request

```
POST /client/listener

Accept: application/json

{
    "event": {
        EVENT BODY
    },
    "eventType": "EVENT_TYPE"
}
```

## Response

```
201
```

For detailed examples on the general TM Forum notification mechanism, see the TMF REST Design Guidelines.

# Acknowledgements

## Release History

Release Number	Date	Release led by:	Description
Version 5.1.0	August 2024	Olivier Arnaud (Orange) <a href="mailto:olivier.arnaud@orange.com">olivier.arnaud@orange.com</a>	
Version 5.0.0	February 2024	Olivier Arnaud (Orange) <a href="mailto:olivier.arnaud@orange.com">olivier.arnaud@orange.com</a>	First Release

## Release description v5.1.0

### End-point changes

#### Hub

Adding GET /hub/{id}

### Type changes

#### ApiDigitalIdentity

Marked as deprecated (as input and patchable property)

Marked as deprecated fields:

- clientId (as input property)
- redirectUrl (moved to Application type)
- jwksUri(moved to Application type)

#### ApiPermissionSet

Marked as deprecated fields:

- validFor

#### ApiProduct

Added properties to be aligned with future TMF936 Open Gateway Catalogue API:

- purpose (string)
- countryCode (array of ISO country codes of 2 letters: pattern '[A-Z]{2}')

#### Application

New properties:

- redirectUrl (moved from ApiDigitalIdentity type)
- jwksUri (moved from ApiDigitalIdentity type)

New GDPR required property :

- privacyRightsRequestContact (of ContactMedium type)

Marked as deprecated fields :

- approvalStatusReason (as patchable property)

## **ApplicationOwnerOrganization**

Updated property:

- organizationType should be in list of <https://www.w3.org/community/reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-entities-organisation>

New Properties:

- localRepresentative of type ApplicationOwnerRelatedLocalRepresentative

## **ApplicationOwnerRelatedOrganization**

Updated property:

- organizationType should be in list of <https://www.w3.org/community/reports/dpvcg/CG-FINAL-dpv-20221205/#vocab-entities-organisation>

## **DataExportCountry**

New type for GDPR required properties with :

- countryCode (ISO country codes of 2 letters: pattern '[A-Z]{2}')
- commercialActivity (boolean)
- commercialOrganizationName (string)
- dataPrivacyFrameworkURL (url) only for EU-USA data privacy agreement.

## **ProductOfferingTermOrCondition**

New property:

- product reference to ApiProduct (optional)

New GDPR properties (optional):

- applicationLegalBasisForInputData (string with recommended values in DpvLegalBasisType)
- dataExportTransitCountry (array of DataExportCountry)
- dataExportStorageCountry (array of DataExportCountry)

- dataProcessingDuration (string with values in DpvDurationType)
- dataProcessingFrequency (string with values in DpvFrequencyType)
- dataProcessingContext (string with values in DpvContextClassesType)
- dataProcessingOperation (string with values in DpvProcessingOperationType)
- purposeReason (string)
- userConsentScreenshot (pdf file attached of type SimpleAttachment)

### **ProductOfferingTermOrConditionApproval**

Marked as deprecated:

- authorization (it is not possible to get the id of the individual authorizing the order)

### **RelatedOrderItem**

Marked as deprecated:

- role

### **WebFormContactMedium**

New ContactMedium sub-type with property url.

## **Examples changes**

Some examples bug fixed (ApiProductOrder, ApplicationOwner, Application)

Some examples added according to new attributes in OAS.

## **User Guide changes**

New diagram for Use Case 1

Some minor fixes (wording, dates)

Extension of strongly typed schemas chapter with examples and schemas

## **Conformance Profile changes**

Added possibility of asynchronous responses with code 202 in addition of synchronous with code 201

Added chapter for specific rules on specific legislations (GDPR, Canada, USA, Germany...)

New attributes added (based on changes in the OAS)

Some minor fixes (wording, dates)

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