ProductInventory

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Introduction

The following document is the specification of the Async API for Product Inventory Management. It includes the model definition as well as all available operations. Possible actions are creating, updating and retrieving Product. The Product API provides a standardized mechanism to retrieve product inventory information. The API consists of a simple set of operations that interact with Inventory systems in a consistent manner. Usually, a product is created and modified consequently to product order bit could be also ‘directly’ modified for administrative reason.

Product API manages product resource : a Product represents an instance of a product offering subscribed to by a party, such as a customer, the place where the product is in use, as well as configuration characteristics, such as assigned telephone numbers and internet addresses. The Product also tracks the services and/or resources through which the product is realized.

Product API performs the following operations on Product :

- Retrieval of a product or a collection of product depending on filter criteria
- Partial update of a product (including updating rules) (for administration purposes)
- Creation of a product (including default values and creation rules) (for administration purposes)
- Deletion of product (for administration purposes)
- Notification of events on product
    - Product creation
    - Product removal
    - Product status change
    - Product value change used to notify that any data in a product has just changed

The following assumptions were considered in the development of this document :

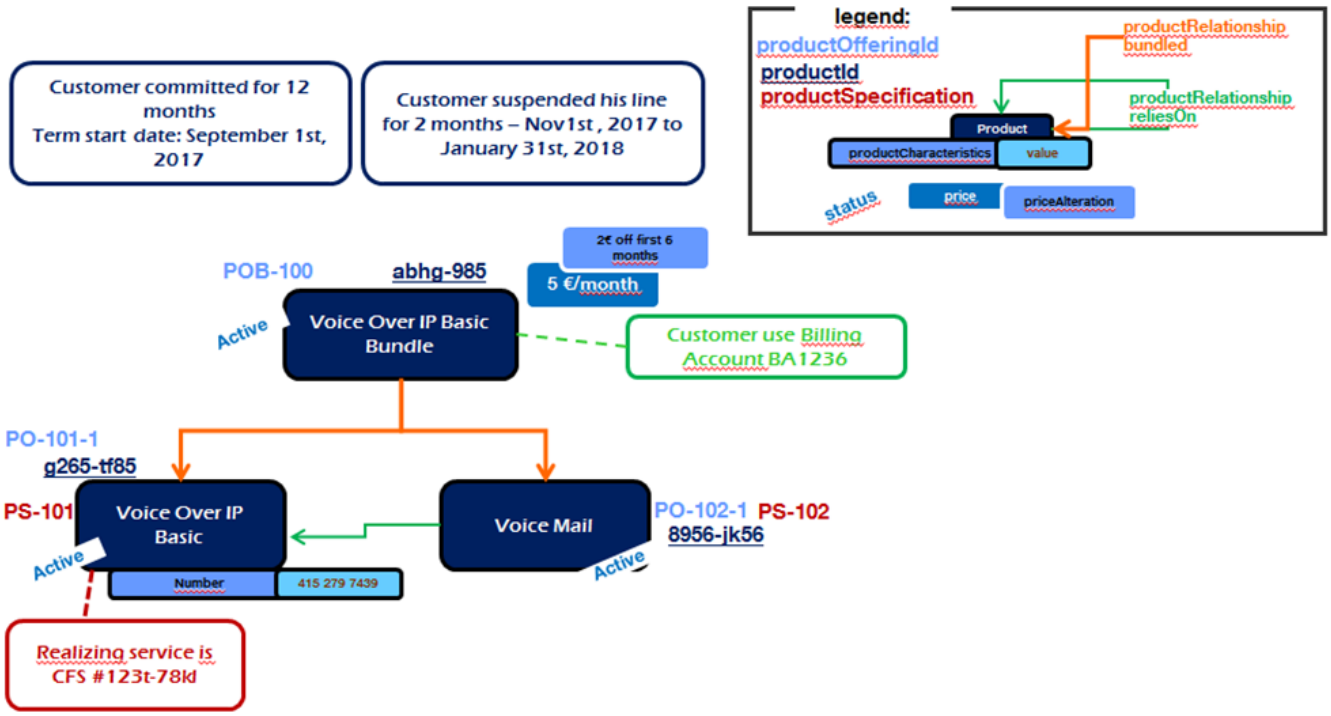
- The Product Inventory Management system has access to the commercial catalog system.
- Product Inventory creation and update should be consistently managed with architecture rules. This specification describe product operations but do not defineusage UC

Sample Use Cases

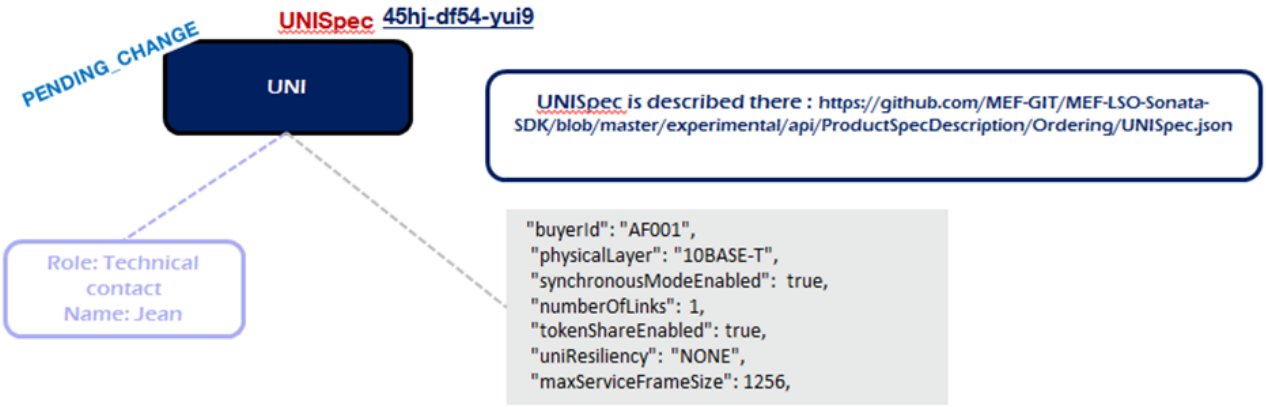
Reader will find example of use cases using Usage API in “Open Digital Business Scenarios and Use Cases” document.

In order to illustrate JSON we’ll use the 2 following examples. These examples are only for illustration purpose and they must not be considered as product modeling guideline.

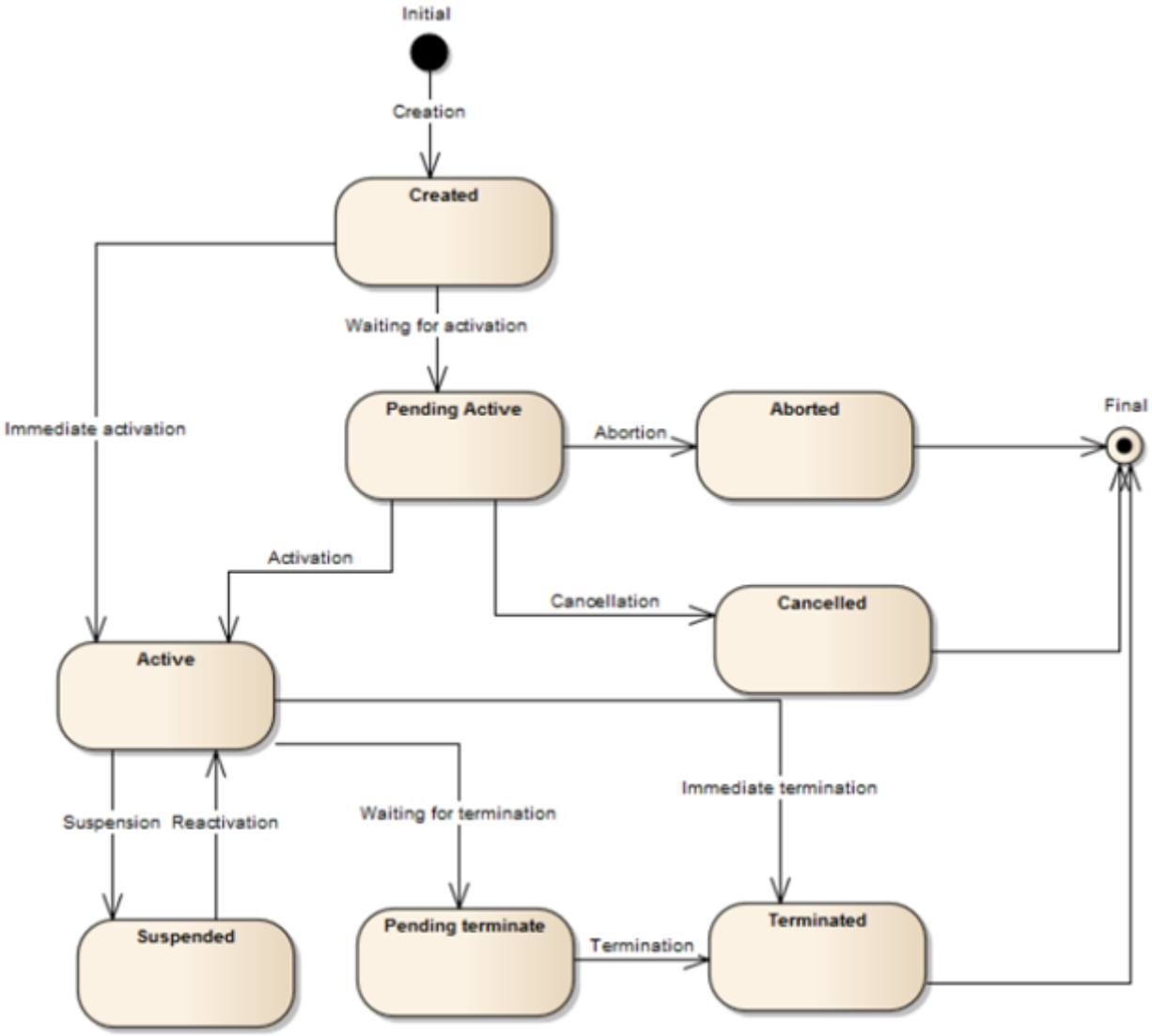
Example 1 – Voice over bundle Basic bundle:



Example 2 : UNI Ethernet access



Life cycle



State	Definition
Created	The product instance has been created but not yet activated.
Pending Active	The product is in activation phase. Not yes 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
Suspended	The product is suspended – it could be an outcome from a customer request or provider decision.
Pending Terminate	The product is still active but a termination process is in progress. It will soon be terminated.
Terminated	The product is not anymore active.

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 v3.0 Part 2 document.

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

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).

Managed Entity and Task Resource Models

Product 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

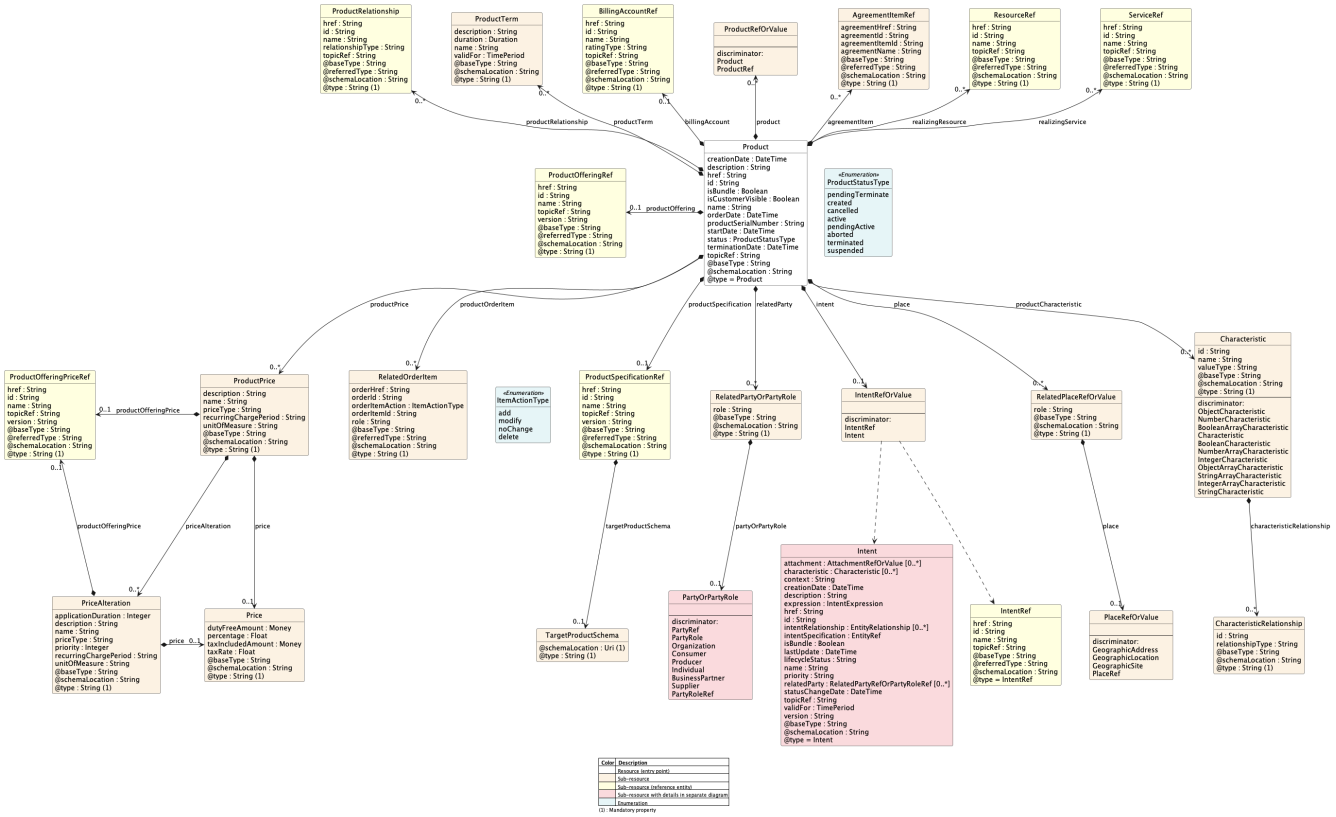


Figure 1 - Product

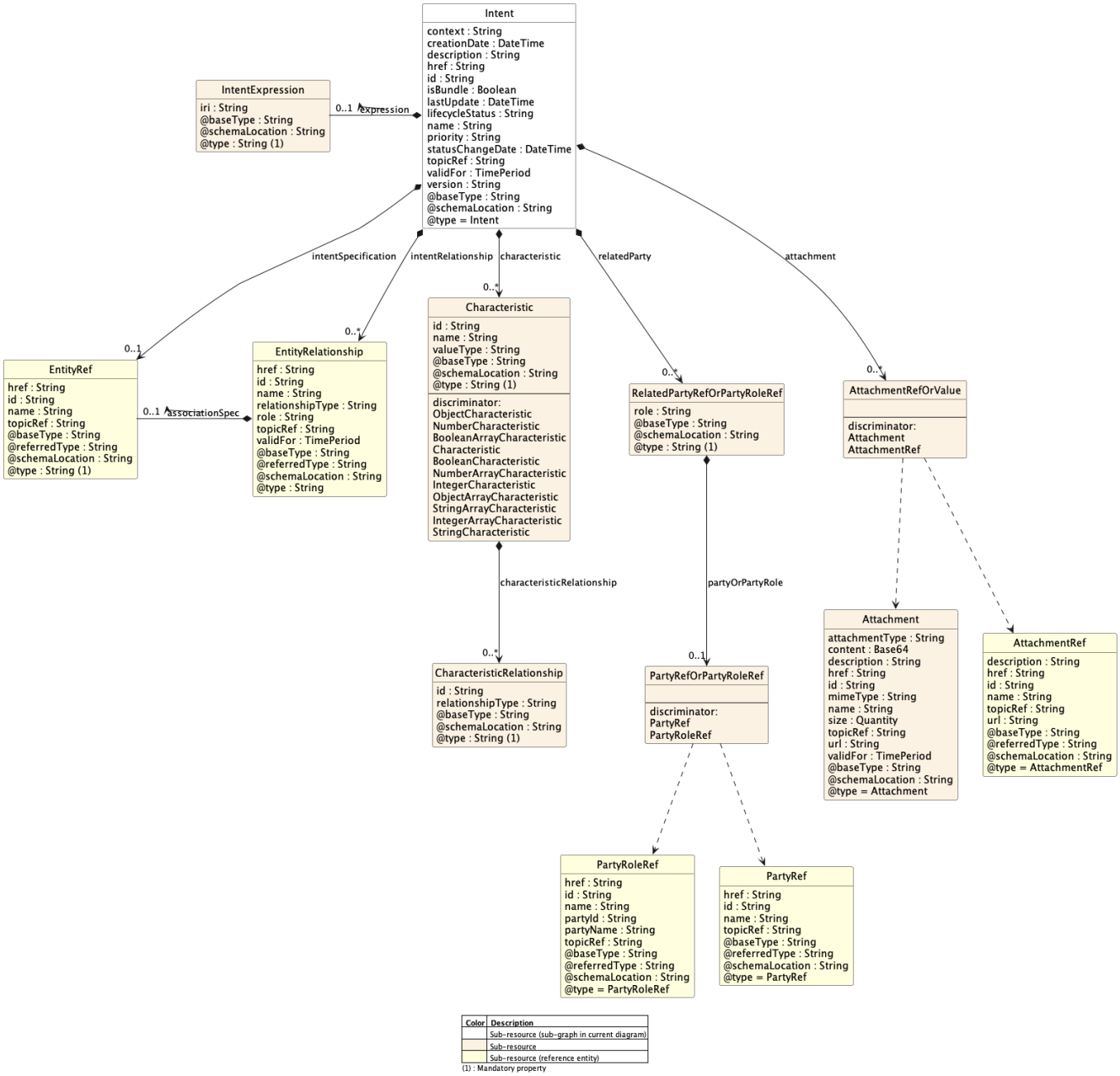


Figure 2 - Intent

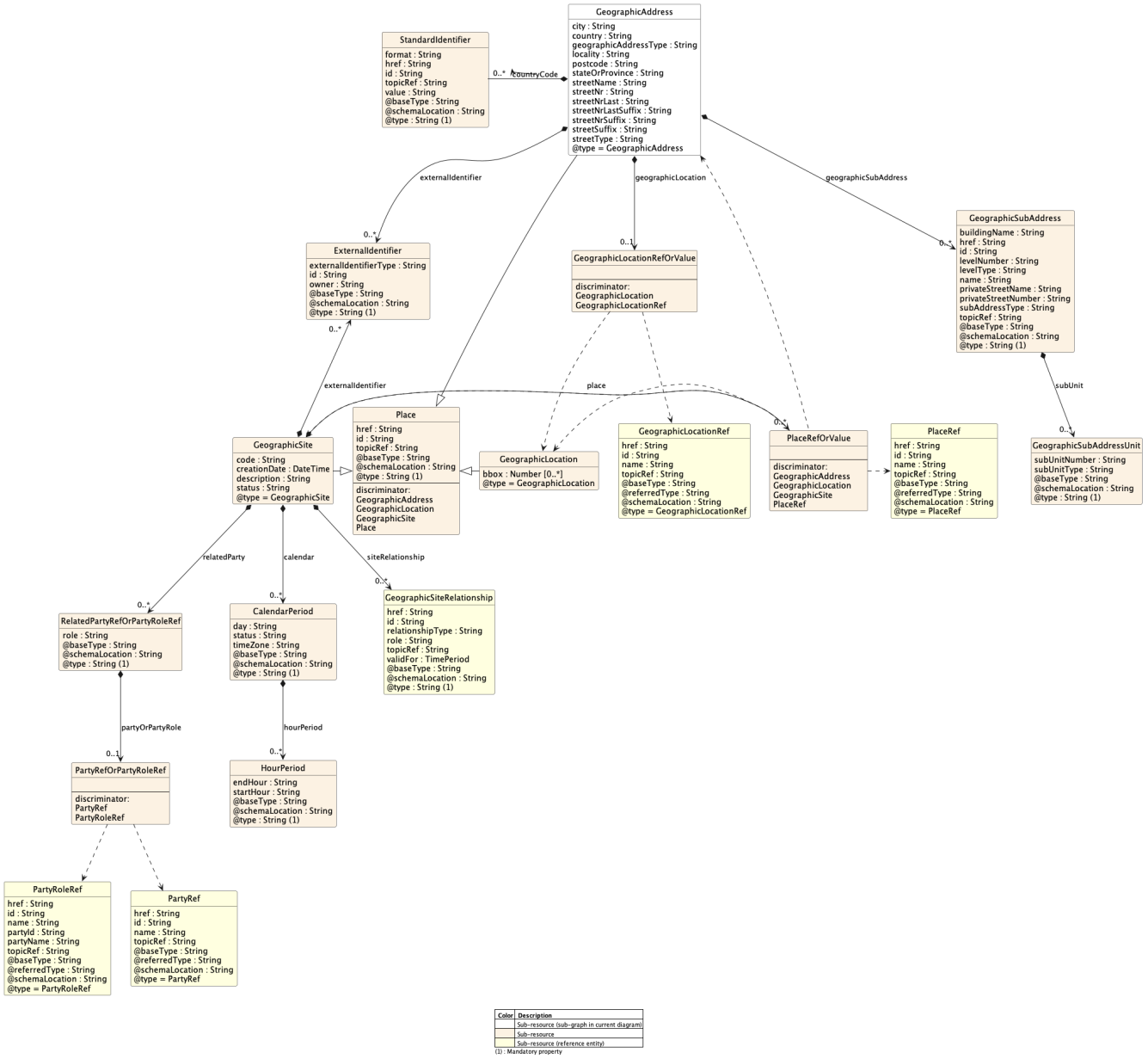


Figure 3 - GeographicAddress

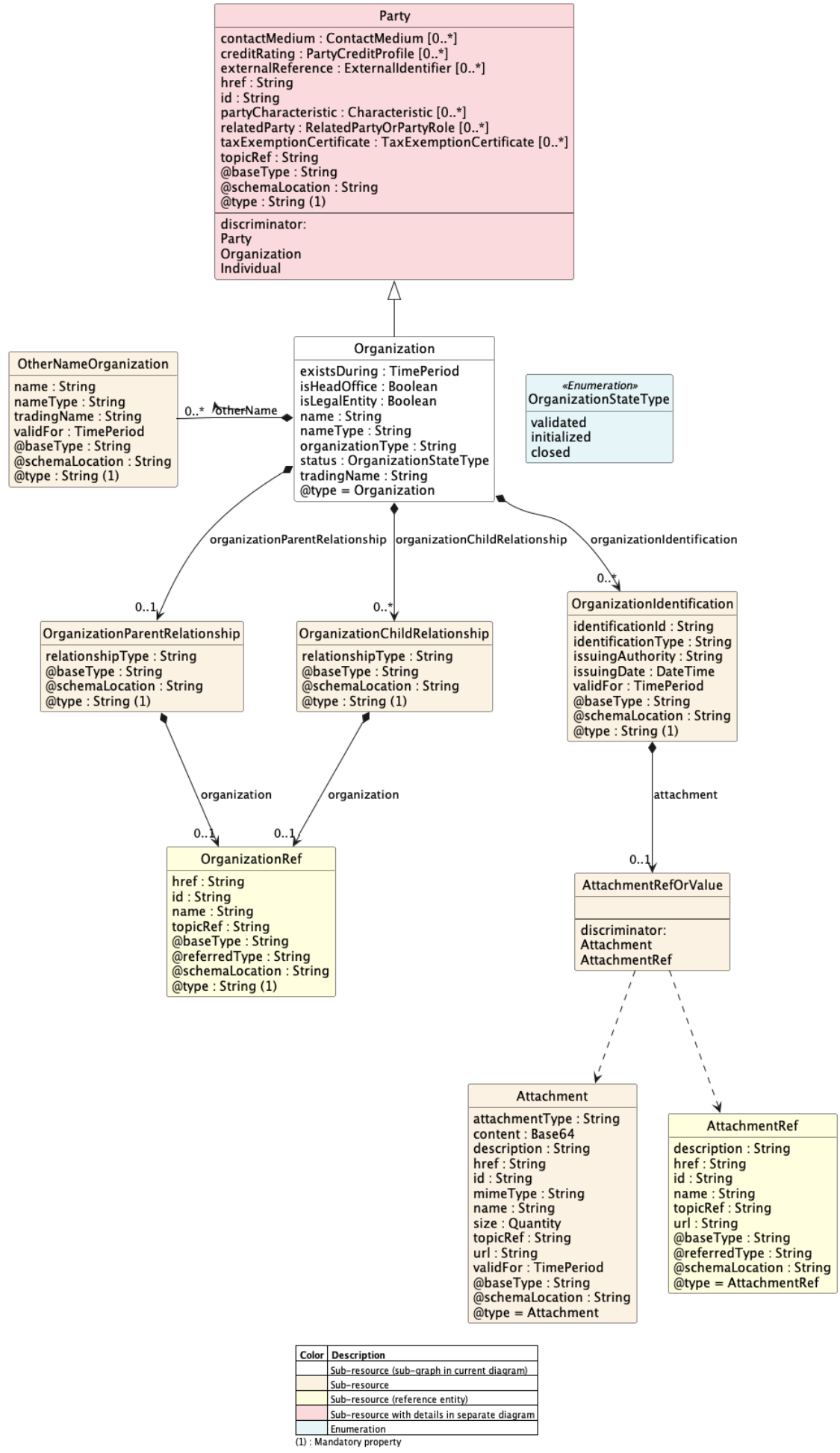


Figure 4 - Organization

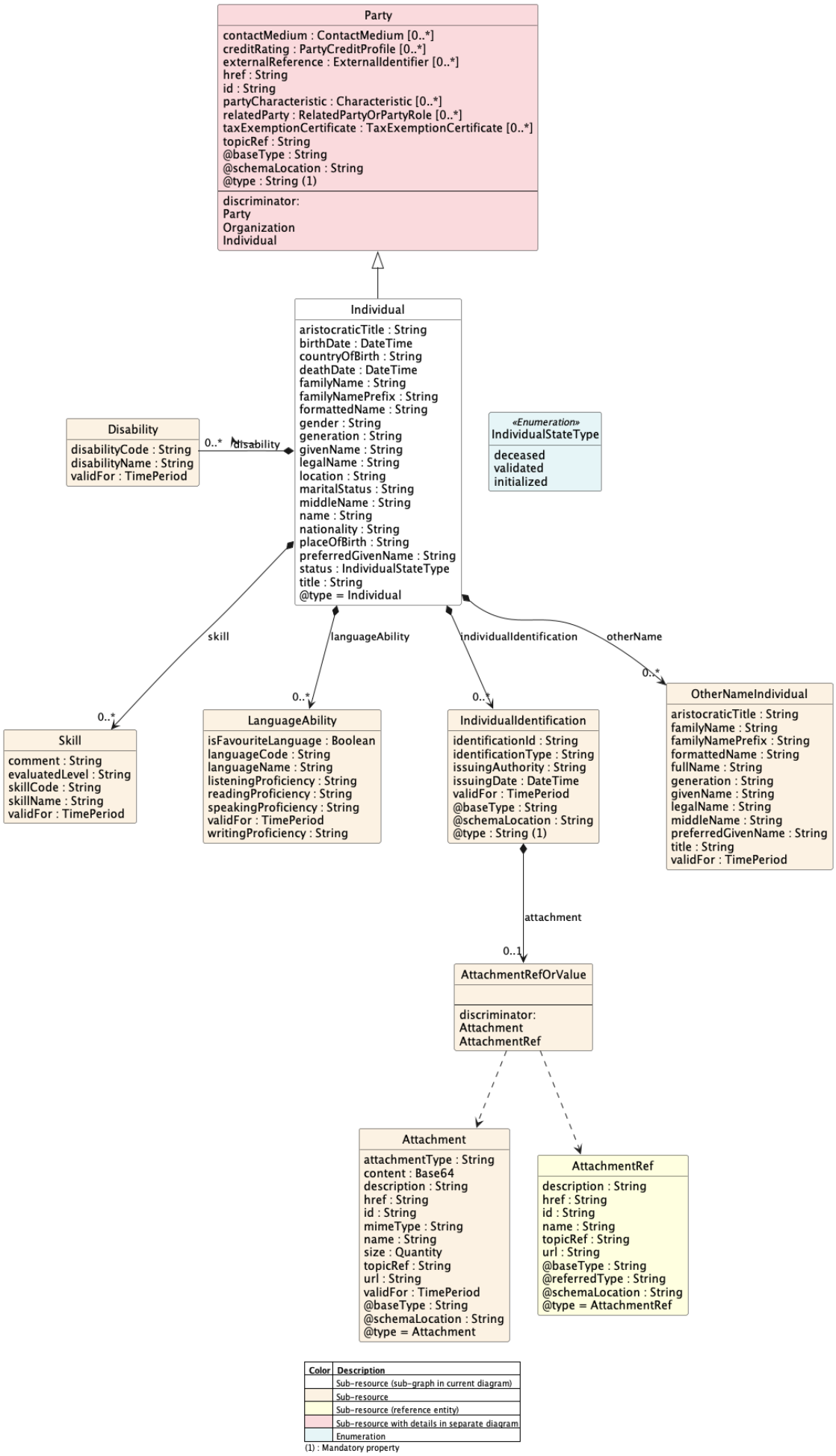


Figure 5 - Individual

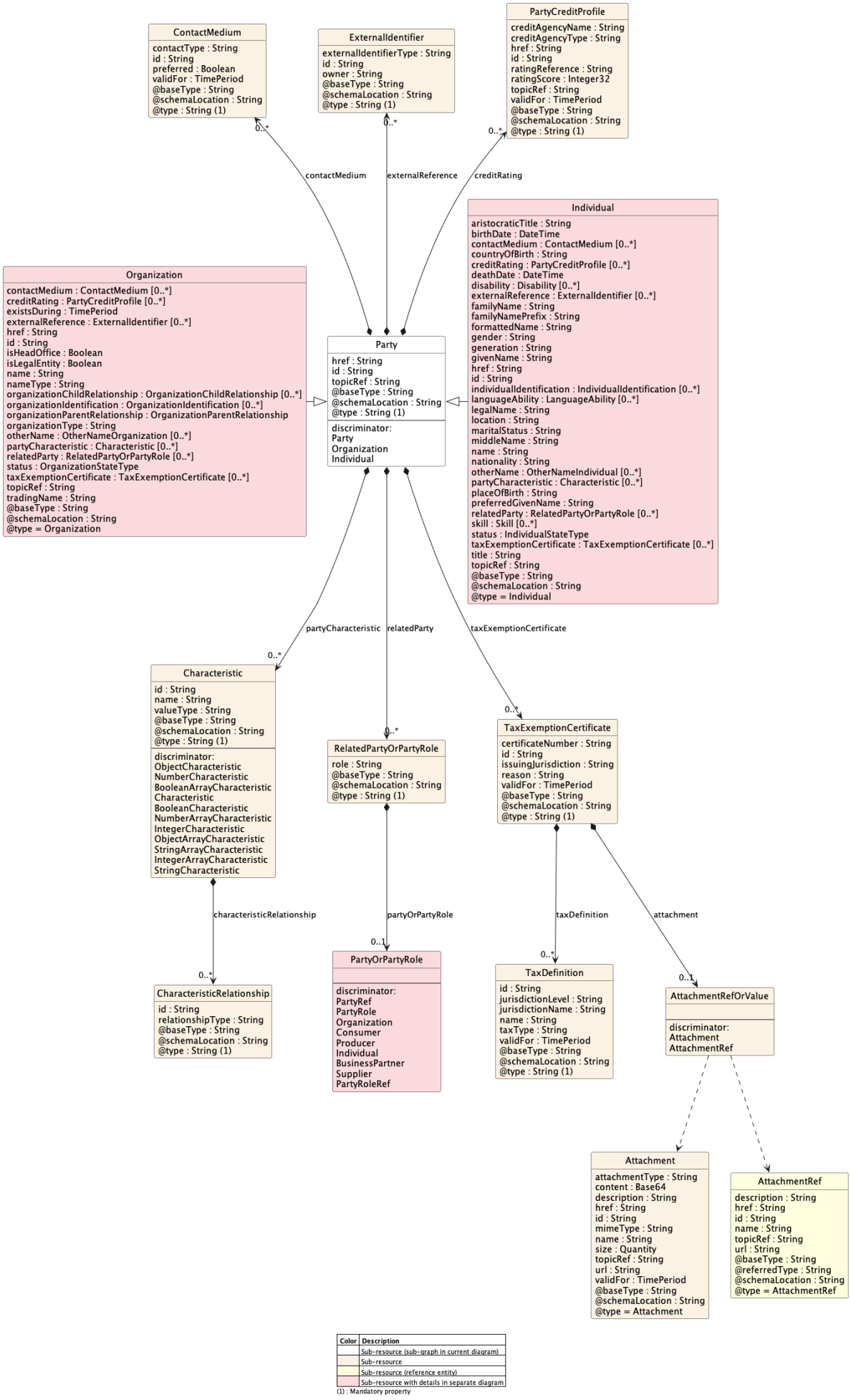


Figure 6 - Party

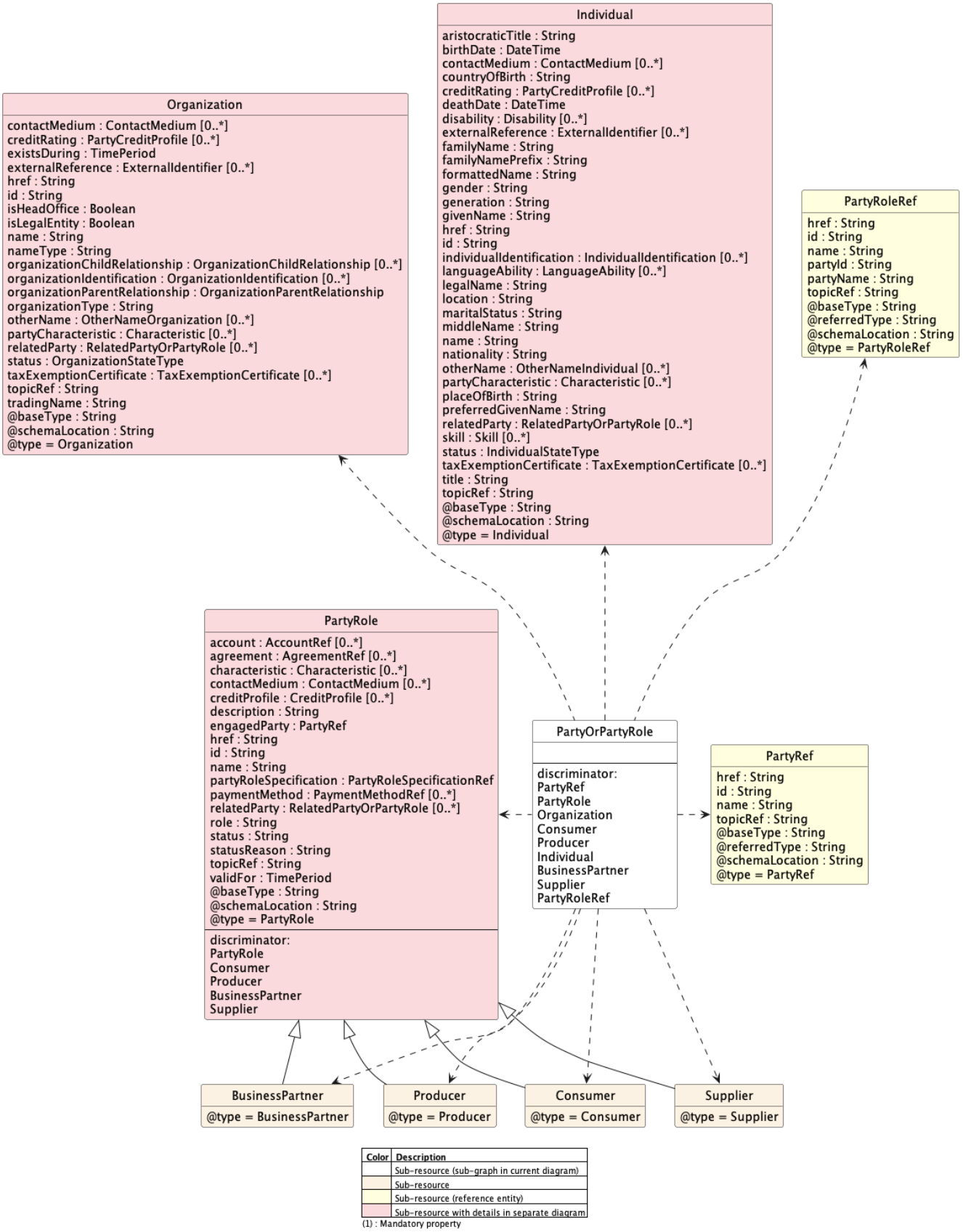


Figure 7 - PartyOrPartyRole

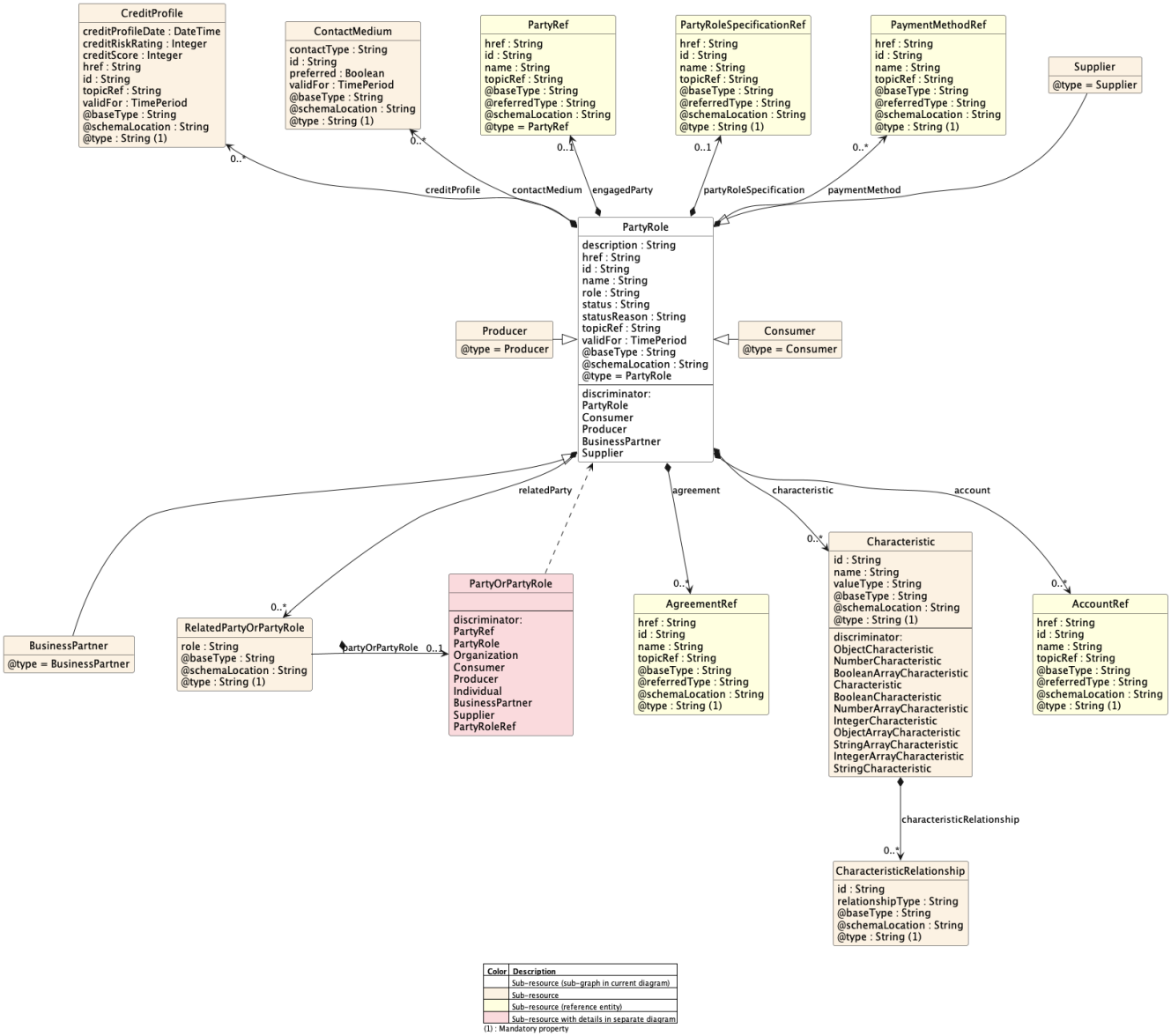


Figure 8 - PartyRole

Field descriptions

Product fields

agreementItem	An AgreementItemRef. It's a Agreement item that has been executed previously.
billingAccount	A BillingAccountRef. BillingAccount reference. A BillingAccount is a detailed description of a bill structure.
creationDate	A DateTime. Date and time when the product was created.
description	A String. Is the description of the product. It could be copied from the description of the Product Offering.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
intent	An IntentRefOrValue. Intent Ref (if Intent already exists) or Value (if Intent be created or its details be presented).

isBundle	A Boolean. If true, the product is a ProductBundle which is an instantiation of a BundledProductOffering. If false, the product is a ProductComponent which is an instantiation of a SimpleProductOffering.
isCustomerVisible	A Boolean. If true, the product is visible by the customer.
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.
place	A RelatedPlaceRefOrValue. Entity reference. The polymorphic attributes @type, @schemaLocation & @referredType are related to the RelatedPlace entity and not the RelatedPlaceRefOrValue class itself.
product	A ProductRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Product entity and not the ProductRefOrValue class itself.
productCharacteristic	A Characteristic. Describes a given characteristic of an object or entity through a name/value pair. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : StringCharacteristic, ObjectCharacteristic, FloatCharacteristic, BooleanCharacteristic, NumberCharacteristic, IntegerCharacteristic, StringArrayCharacteristic, ObjectArrayCharacteristic, BooleanArrayCharacteristic, NumberArrayCharacteristic, IntegerArrayCharacteristic...
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.
productPrice	A ProductPrice. Description of price and discount awarded.
productRelationship	A ProductRelationship. Used to describe relationship between product.
productSerialNumber	A String. Is the serial number for the product. This is typically applicable to tangible products e.g. Broadband Router.
productSpecification	A ProductSpecificationRef. ProductSpecification reference. A product Specification represents entities that are orderable from the provider of the catalog.
productTerm	A ProductTerm. Description of a productTerm linked to this product. This represent a commitment with a duration.
realizingResource	A ResourceRef. Resource reference, for when Resource is used by other entities.

realizingService	A ServiceRef. Service reference, for when Service is used by other entities.
relatedParty	A RelatedPartyOrPartyRole. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
startDate	A DateTime. Is the date from which the product starts.
status	A ProductStatusType. Possible values for the status of the product.
terminationDate	A DateTime. Is the date when the product was terminated.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

AccountRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

AgreementRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

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.
mimeType	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.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.

BillingAccountRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
ratingType	A String. Indicates whether the account follows a specific payment option such as prepaid or postpaid.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

BooleanArrayCharacteristic sub-resource fields

value	A Boolean. A characteristic which value is an array of Boolean(s).
@type	A String. When sub-classing, this defines the sub-class Extensible name.

BooleanCharacteristic sub-resource fields

value	A Boolean. Value of the characteristic.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

BusinessPartner sub-resource fields

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

CalendarPeriod sub-resource fields

day	A String. Day where the calendar status applies (e.g.: monday, mon-to-fri, weekdays, weekend, all week, ...).
hourPeriod	A HourPeriod. Hour interval.
status	A String. Indication of the availability of the calendar period (e.g.: available, booked, etc.).
timeZone	A String. Indication of the timezone applicable to the calendar information (e.g.: Paris, GMT+1).
@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.

Characteristic sub-resource fields

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
valueType	A String. Data type of the value of the characteristic.

@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.

CharacteristicRelationship sub-resource fields

id	A String. Unique identifier of the characteristic.
relationshipType	A String. The type of relationship.
@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.

Consumer sub-resource fields

@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.

CreditProfile sub-resource fields

creditProfileDate	A DateTime. The date the profile was established.
creditRiskRating	An Integer. This is an integer whose value is used to rate the risk.

creditScore	An Integer. A measure of a person or organizations creditworthiness calculated on the basis of a combination of factors such as their income and credit history.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.

Disability sub-resource fields

disabilityCode	A String. Code of the disability.
disabilityName	A String. Name of the disability.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.

EntityRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

EntityRelationship sub-resource fields

associationSpec	An EntityRef. Entity reference schema to be use for all entityRef class.

href	A String.
id	A String.
name	A String.
relationshipType	A String. Type of relationship such as migration, substitution, dependency, exclusivity.
role	A String. The association role for this entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.
@referredType	A String.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String.

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.

GeographicAddress sub-resource fields

city	A String. City that the address is in.
country	A String. Country that the address is in.
countryCode	A StandardIdentifier. 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. It is anticipated that multiple standards can provide definitions for a single entity, e.g., a country identifier can be specified in various standards (e.g., "ISO 3166-1 Alpha 2", "ISO 3166-1 Alpha 3", "ISO 3166-1 Numeric").

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.
geographicAddressType	A String. Classification of the address, e.g., residential, industrial.
geographicLocation	A GeographicLocationRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the GeographicLocation entity and not the GeographicLocationRefOrValue class itself.
geographicSubAddress	A GeographicSubAddress. 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. [ANZLIC-STREET], or a suburb, a bounded locality within a city, town or shire principally of urban character [ANZLICSTREET].
postcode	A String. Descriptor for a postal delivery area, used to speed and simplify the delivery of mail (also know as zipcode).
stateOrProvince	A String. The State or Province that the address is in.
streetName	A String. Name of the street or other street type.
streetNr	A String. Number identifying a specific property on a public street. It may be combined with streetNrLast for ranged addresses.
streetNrLast	A String. Last number in a range of street numbers allocated to a property.
streetNrLastSuffix	A String. Last street number suffix for a ranged address.
streetNrSuffix	A String. The first street number suffix.
streetSuffix	A String. A modifier denoting a relative direction.

streetType	A String. Alley, avenue, boulevard, brae, crescent, drive, highway, lane, terrace, parade, place, tarn, way, wharf.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

GeographicLocation sub-resource fields

bbox	A Number. A bounding box array that contains the geometry. The axes order follows the axes order of the geometry.
href	A String. An URI used to access to the geographic location resource.
id	A String. Unique identifier of the geographic location.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@type	A String. The name of the GeoJSON structure used in the geometry attribute.

GeographicLocationRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

GeographicSite sub-resource fields

calendar	A CalendarPeriod. Calendar period.
code	A String. A code that may be used for some addressing schemes eg: [ANSI T1.253-1999].
creationDate	A DateTime. Date and time when the GeographicSite was created.
description	A String. Text describing additional information regarding the site.

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.
place	A PlaceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Place entity and not the PlaceRefOrValue class itself.
relatedParty	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
siteRelationship	A GeographicSiteRelationship. Details of geographic site relationship.
status	A String. The condition of the GeographicSite, such as planned, underConstruction, cancelled, active, inactive, former.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

GeographicSiteRelationship sub-resource fields

href	A String. Reference of the related geographic site.
id	A String. Unique identifier of the related site entity within the server.
relationshipType	A String. Type of relationship.
role	A String. Role of the related site in the relationship.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.

GeographicSubAddress sub-resource fields

buildingName	A String. Allows for buildings that have well-known names.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
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.
name	A String. Name of the subAddress to identify it with a meaningful identification.
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.
subAddressType	A String. Type of subAddress : it can be a subunit or a private street.
subUnit	A GeographicSubAddressUnit. Representation of a SubUnit. It is used for describing subunit within a subAddress e.g. BERTH, FLAT, PIER, SUITE, SHOP, TOWER, UNIT, WHARF.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

GeographicSubAddressUnit sub-resource fields

subUnitNumber	A String. The discriminator used for the subunit, often just a simple number but may also be a range.
subUnitType	A String. The type of subunit e.g.BERTH, FLAT, PIER, SUITE, SHOP, TOWER, UNIT, WHARF, RACK.
@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.

HourPeriod sub-resource fields

endHour	A String. The time when the status ends applying.

startHour	A String. The time when the status starts applying.
@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.

Individual sub-resource fields

aristocraticTitle	A String. E.g. Baron, Graf, Earl.
birthDate	A DateTime. Birth date.
countryOfBirth	A String. Country where the individual was born.
deathDate	A DateTime. Date of death.
disability	A Disability. Lack or inadequate strength or ability.
familyName	A String. Contains the non-chosen or inherited name. Also known as last name in the Western context.
familyNamePrefix	A String. Family name prefix.
formattedName	A String. A fully formatted name in one string with all of its pieces in their proper place and all of the necessary punctuation. Useful for specific contexts (Chinese, Japanese, Korean).
gender	A String. Gender.
generation	A String. E.g.. Sr, Jr, III (the third).
givenName	A String. First name of the individual.
individualIdentification	An IndividualIdentification. Represents our registration of information used as proof of identity by an individual (passport, national identity card, drivers license, social security number, birth certificate).
languageAbility	A LanguageAbility. Ability of an individual to understand or converse in a language.
legalName	A String. Legal name or birth name (name one has for official purposes).
location	A String. Temporary current location of the individual (may be used if the individual has approved its sharing).
maritalStatus	A String. Marital status (married, divorced, widow ...).
middleName	A String. Middles name or initial.
name	A String. Full name flatten (first, middle, and last names) - this is the name that is expected to be presented in reference data types such as PartyRef, RelatedParty, etc. that refer to Individual.

nationality	A String. Nationality.
otherName	An OtherNameIndividual. Keeps track of other names, for example the old name of a woman before marriage or an artist name.
placeOfBirth	A String. Reference to the place where the individual was born.
preferredGivenName	A String. Contains the chosen name by which the individual prefers to be addressed. Note: This name may be a name other than a given name, such as a nickname.
skill	A Skill. Skills evaluated for an individual with a level and possibly with a limited validity when an obsolescence is defined (Ex: the first-aid certificate first level is limited to one year and an update training is required each year to keep the level).
status	An IndividualStateType. Valid values for the lifecycle state of the individual.
title	A String. Useful for titles (aristocratic, social,...) Pr, Dr, Sir, ...
@type	A String. When sub-classing, this defines the sub-class Extensible name.

IndividualIdentification 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. Identification type (passport, national identity card, drivers license, social security number, birth certificate).
issuingAuthority	A String. Authority which has issued the identifier, such as: social security, town hall.
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.

IntegerArrayCharacteristic sub-resource fields

value	An Integer. A characteristic which value is an array of Integer(s).
@type	A String. When sub-classing, this defines the sub-class Extensible name.

IntegerCharacteristic sub-resource fields

value	An Integer. Value of the characteristic.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

Intent sub-resource fields

attachment	An AttachmentRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Attachment entity and not the AttachmentRefOrValue class itself.
characteristic	A Characteristic. Describes a given characteristic of an object or entity through a name/value pair. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : StringCharacteristic, ObjectCharacteristic, FloatCharacteristic, BooleanCharacteristic, NumberCharacteristic, IntegerCharacteristic, StringArrayCharacteristic, ObjectArrayCharacteristic, BooleanArrayCharacteristic, NumberArrayCharacteristic, IntegerArrayCharacteristic...
context	A String. A string used to give a context to the intent.
creationDate	A DateTime. Date and time of the creation of this REST resource.
description	A String. The description of the intent.
expression	An IntentExpression. An Intent expression.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
intentRelationship	An EntityRelationship. A uni-directional relationship from this entity to a target entity instance.
intentSpecification	An EntityRef. Entity reference schema to be use for all entityRef class.
isBundle	A Boolean. IsBundle determines whether an intent represents a single intent (false), or a bundle of intents(true).
lastUpdate	A DateTime. Date and time of the last update of this REST resource.
lifecycleStatus	A String. Used to indicate the current lifecycle status of this intent.

name	A String. The name of the intent.
priority	A String. Can be used by intent owner to prioritize intents in an intent management system.
relatedParty	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
statusChangeDate	A DateTime. A date time(DateTime). The date that the entity status changed to the current one.
topicRef	A String. A reference to the topic from which this entity can be fetched.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
version	A String. A field that identifies the specific version of an instance of an intent.
@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.

IntentExpression sub-resource fields

iri	A String. Internationalized Resource Identifier of the intent Expression.
@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.

IntentRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

LanguageAbility sub-resource fields

isFavouriteLanguage	A Boolean. A “true” value specifies whether the language is considered by the individual as his favourite one.
languageCode	A String. Language code (RFC 5646).
languageName	A String. Language name.
listeningProficiency	A String. Listening proficiency evaluated for this language.
readingProficiency	A String. Reading proficiency evaluated for this language.
speakingProficiency	A String. Speaking proficiency evaluated for this language.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
writingProficiency	A String. Writing proficiency evaluated for this language.

NumberArrayCharacteristic sub-resource fields

value	A Number. A characteristic which value is an array of Number(s).
@type	A String. When sub-classing, this defines the sub-class Extensible name.

NumberCharacteristic sub-resource fields

value	A Number. Value of the characteristic.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

ObjectArrayCharacteristic sub-resource fields

value	An object. Collection of characteristic values.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

ObjectCharacteristic sub-resource fields

value	An object. Value of the characteristic.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

Organization sub-resource fields

existsDuring	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
isHeadOffice	A Boolean. If value is true, the organization is the head office.
isLegalEntity	A Boolean. If value is true, the organization is a legal entity known by a national referential.
name	A String. Organization name (department name for example).
nameType	A String. Type of the name : Co, Inc, Ltd, etc.
organizationChildRelationship	An OrganizationChildRelationship. Child references of an organization in a structure of organizations.
organizationIdentification	An OrganizationIdentification. Represents our registration of information used as proof of identity by an organization.
organizationParentRelationship	An OrganizationParentRelationship. Parent references of an organization in a structure of organizations.
organizationType	A String. Type of Organization (company, department…).
otherName	An OtherNameOrganization. Keeps track of other names, for example the old name of an organization.
status	An OrganizationStateType. Valid values for the lifecycle state of the organization.
tradingName	A String. Name that the organization (unit) trades under.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

OrganizationChildRelationship sub-resource fields

organization	An OrganizationRef.
relationshipType	A String. Type of the relationship. Could be juridical, hierarchical, geographical, functional for example.
@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.

OrganizationParentRelationship sub-resource fields

organization	An OrganizationRef.
relationshipType	A String. Type of the relationship. Could be juridical, hierarchical, geographical, functional for example.
@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.

OrganizationRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

OtherNameIndividual sub-resource fields

aristocraticTitle	A String. E.g. Baron, Graf, Earl, etc.
familyName	A String. Contains the non-chosen or inherited name. Also known as last name in the Western context.
familyNamePrefix	A String. Family name prefix.
formattedName	A String. . A fully formatted name in one string with all of its pieces in their proper place and all of the necessary punctuation. Useful for specific contexts (Chinese, Japanese, Korean, etc.).
fullName	A String. Full name flatten (first, middle, and last names).
generation	A String. E.g. Sr, Jr, etc.
givenName	A String. First name.
legalName	A String. Legal name or birth name (name one has for official purposes).
middleName	A String. Middle name or initial.
preferredGivenName	A String. Contains the chosen name by which the person prefers to be addressed. Note: This name may be a name other than a given name, such as a nickname.
title	A String. Use for titles (aristrocatic, social, ...): Pr, Dr, Sir,....
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.

OtherNameOrganization sub-resource fields

name	A String. Organization name (department name for example).
nameType	A String. Co. , Inc. , Ltd. , Pty Ltd. , Plc; , Gmbh.
tradingName	A String. The name that the organization trades under.
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.

Party 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…
creditRating	A PartyCreditProfile. An individual might be evaluated for its worthiness and this evaluation might be based on a credit rating given by a credit agency.
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.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
partyCharacteristic	A Characteristic. Describes a given characteristic of an object or entity through a name/value pair. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : StringCharacteristic, ObjectCharacteristic, FloatCharacteristic, BooleanCharacteristic, NumberCharacteristic, IntegerCharacteristic, StringArrayCharacteristic, ObjectArrayCharacteristic, BooleanArrayCharacteristic, NumberArrayCharacteristic, IntegerArrayCharacteristic…
relatedParty	A RelatedPartyOrPartyRole. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
taxExemptionCertificate	A TaxExemptionCertificate. A tax exemption certificate represents a tax exemption granted to a party (individual or organization) by a tax jurisdiction which may be a city, state, country,… An exemption has a certificate identifier (received from the jurisdiction that levied the tax) and a validity period. An exemption is per tax types and determines for each type of tax what portion of the tax is exempted (partial by percentage or complete) via the tax definition.
topicRef	A String. A reference to the topic from which this entity can be fetched.

@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.

PartyCreditProfile sub-resource fields

creditAgencyName	A String. Name of the credit agency giving the score.
creditAgencyType	A String. Type of the credit agency giving the score.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
ratingReference	A String. Reference corresponding to the credit rating.
ratingScore	An Integer32. A measure of a party's creditworthiness calculated on the basis of a combination of factors such as their income and credit history.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.

PartyRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

PartyRole sub-resource fields

account	An AccountRef. Account reference. A account may be a party account or a financial account.
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.
characteristic	A Characteristic. Describes a given characteristic of an object or entity through a name/value pair. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : StringCharacteristic, ObjectCharacteristic, FloatCharacteristic, BooleanCharacteristic, NumberCharacteristic, IntegerCharacteristic, StringArrayCharacteristic, ObjectArrayCharacteristic, BooleanArrayCharacteristic, NumberArrayCharacteristic, IntegerArrayCharacteristic…
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…
creditProfile	A CreditProfile. Credit profile for the party (containing credit scoring, …). By default only the current credit profile is retrieved. It can be used as a list to give the party credit profiles history, the first one in the list will be the current one.
description	A String. A description of the PartyRole.
engagedParty	A PartyRef. A Party reference.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. A word, term, or phrase by which the PartyRole is known and distinguished from other PartyRoles. It's the name of the PartyRole unique entity.
partyRoleSpecification	A PartyRoleSpecificationRef. Party role specification reference. A party role specification gives additional details on the part played by a party in a given context.
paymentMethod	A PaymentMethodRef. PaymentMethod reference. A payment method defines a specific mean of payment (e.g direct debit).
relatedParty	A RelatedPartyOrPartyRole. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.

role	A String. Role played by the engagedParty in this context. As role is defined by partyRoleSpecification, this role attribute can be used to precise the role defined by partyRoleSpecification, or it can be used to define the role in case there is no partyRoleSpecification.
status	A String. Used to track the lifecycle status of the party role.
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.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

PartyRoleSpecificationRef sub-resource fields

href	A String. Hyperlink reference.

id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

PaymentMethodRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

Place sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

PlaceRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

Price sub-resource fields

dutyFreeAmount	A Money. A base / value business entity used to represent money.
percentage	A Float. Percentage to apply for ProdOfferPriceAlteration.
taxIncludedAmount	A Money. A base / value business entity used to represent money.
taxRate	A Float. Tax rate.
@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.

PriceAlteration sub-resource fields

applicationDuration	An Integer. Duration during which the alteration applies on the order item price (for instance 2 months free of charge for the recurring charge).
description	A String. A narrative that explains in detail the semantics of this order item price alteration.
name	A String. Name of the order item price alteration.
price	A Price. Provides all amounts (tax included, duty free, tax rate), used currency and percentage to apply for Price and Price Alteration.
priceType	A String. A category that describes the price such as recurring, one time and usage.

priority	An Integer. Priority level for applying this alteration among all the defined alterations on the order item price.
productOfferingPrice	A ProductOfferingPriceRef. ProductPriceOffering reference. An amount, usually of money, that is asked for or allowed when a ProductOffering is bought, rented, or leased.
recurringChargePeriod	A String. Could be month, week…
unitOfMeasure	A String. Could be minutes, GB…
@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.

Producer sub-resource fields

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

ProductOfferingPriceRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
version	A String. Version of the product offering price.
@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.

ProductOfferingRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.

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.

ProductPrice sub-resource fields

description	A String. Description of the Product price.
name	A String. Name of the Product price.
price	A Price. Provides all amounts (tax included, duty free, tax rate), used currency and percentage to apply for Price and Price Alteration.
priceAlteration	A PriceAlteration. Is an amount, usually of money, that modifies the price charged for an order item.
priceType	A String. Indicate if the price is for recurrent or no-recurrent charge.
productOfferingPrice	A ProductOfferingPriceRef. ProductPriceOffering reference. An amount, usually of money, that is asked for or allowed when a ProductOffering is bought, rented, or leased.
recurringChargePeriod	A String. Used for recurring charge to indicate period (month, week, etc..).
unitOfMeasure	A String. Unit of Measure if price depending on it (Gb, SMS volume, etc..).
@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.

ProductRelationship sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
relationshipType	A String. Relationship type as relies on, bundles, etc…

topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.
topicRef	A String. A reference to the topic from which this entity can be fetched.
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.

ProductTerm sub-resource fields

description	A String. Description of the productTerm.
duration	A Duration. A time interval in a given unit of time.
name	A String. Name of the productTerm.
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.

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.
orderItemId	A String. Id of an item of a product order.
role	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.

RelatedPartyOrPartyRole sub-resource fields

partyOrPartyRole	A PartyOrPartyRole.
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.

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.

RelatedPlaceRefOrValue sub-resource fields

place	A PlaceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Place entity and not the PlaceRefOrValue class itself.
role	A String.
@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.

ResourceRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

ServiceRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
topicRef	A String. A reference to the topic from which this entity can be fetched.
@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.

Skill sub-resource fields

comment	A String. A free text comment linked to the evaluation done.
evaluatedLevel	A String. Level of expertise in a skill evaluated for an individual.
skillCode	A String. Code of the skill.
skillName	A String. Name of the skill, such as Java language.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.

StandardIdentifier sub-resource fields

format	A String. Standard/Regulatory definition identifier. e.g., ISO 3166-1.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
topicRef	A String. A reference to the topic from which this entity can be fetched.
value	A String. The value of the resource in the corresponding standard.e.g., a country code value.
@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.

StringArrayCharacteristic sub-resource fields

value	A String. Collection of string characteristics.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

StringCharacteristic sub-resource fields

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

Supplier sub-resource fields

@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.

TaxDefinition sub-resource fields

id	A String. Unique identifier of the tax.
jurisdictionLevel	A String. Level of the jurisdiction that levies the tax.
jurisdictionName	A String. Name of the jurisdiction that levies the tax.
name	A String. Tax name.
taxType	A String. Type of the tax.
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.

TaxExemptionCertificate sub-resource fields

attachment	An AttachmentRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Attachment entity and not the AttachmentRefOrValue class itself.
certificateNumber	A String. Identifier of a document that shows proof of exemption from taxes for the taxing jurisdiction.
id	A String. Identifier of the tax exemption within list of the exemptions.
issuingJurisdiction	A String. Name of the jurisdiction that issued the exemption.
reason	A String. Reason for the tax exemption.

taxDefinition	A TaxDefinition. Reference of a tax definition. A tax is levied by an authorized tax jurisdiction. For example, there are many different types of tax (Federal Tax levied by the US Government, State Tax levied by the State of California, City Tax levied by the City of Los Angeles, etc.).
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.

Json representation sample(s)

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

```
[{
  "isBundle": false,
  "productSpecification": {
    "@referredType": "ProductSpecification",
    "@type": "ProductSpecificationRef",
    "id": "PS-101",
    "href": "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "version": "1"
  },
  "productOffering": {
    "@referredType": "ProductOffering",
    "@type": "ProductOfferingRef",
    "name": "Voice Over IP Basic",
    "id": "PO-101-1",
    "href": "https://host:port/productCatalogManagement/v5/productOffering/PO-101-1"
  },
  "@type": "Product",
  "productCharacteristic": [{
    "@type": "StringCharacteristic",
    "valueType": "string",
    "name": "Number",
    "value": "415 279 7439"
  }],
  "description": "product description",
  "productOrderItem": [
    {
      "@referredType": "ProductOrder",
      "role": "Install order",
      "orderId": "1023-98gh",
      "orderItemId": "2",
```

```
      "@type": "RelatedOrderItem",
      "orderderHref": "https...",
      "orderItemAction": "add"
    },
    {
      "@referredType": "ProductOrder",
      "role": "change management order",
      "orderId": "df65-gh12",
      "orderItemId": "2",
      "@type": "RelatedOrderItem",
      "orderderHref": "https...",
      "orderItemAction": "change"
    },
    {
      "@referredType": "ProductOrder",
      "role": "change management order",
      "orderId": "5ghh-sd12",
      "orderItemId": "3",
      "@type": "RelatedOrderItem",
      "orderderHref": "https...",
      "orderItemAction": "change"
    }
  ],
  "relatedParty": [{
    "partyOrPartyRole": {
      "@referredType": "Individual",
      "@type": "PartyRef",
      "name": "Jean",
      "id": "45hj-8888",
      "href": "https://host:port/partyManagement/v5/individual/45hj-8888"
    },
    "role": "User",
    "@type": "RelatedPartyOrPartyRole"
  }],
  "realizingService": [{
    "@referredType": "Service",
    "@type": "ServiceRef",
    "id": "123t-78k",
    "href": "https://host:port/serviceInventory/v5/service/123t-78k"
  }],
  "productSerialNumber": "N/A",
  "@baseType": "Product",
  "name": "Voice Over IP Basic instance for Jean",
  "id": "g265-tf85",
  "href": "https://host:port/productInventory/v5/product/g265-tf85",
  "isCustomerVisible": true,
  "@schemaLocation": "https:://host:port/standardProduct.json",
  "startDate": "2017-11-01T09:37:29.961Z",
  "status": "active"
}]
```

Notification Resource Models

5 notifications are defined for this API.

Notifications related to Product:

- Product Batch Event
- Product Create Event
- Product Delete Event
- Product Attribute Value Change Event
- Product 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).

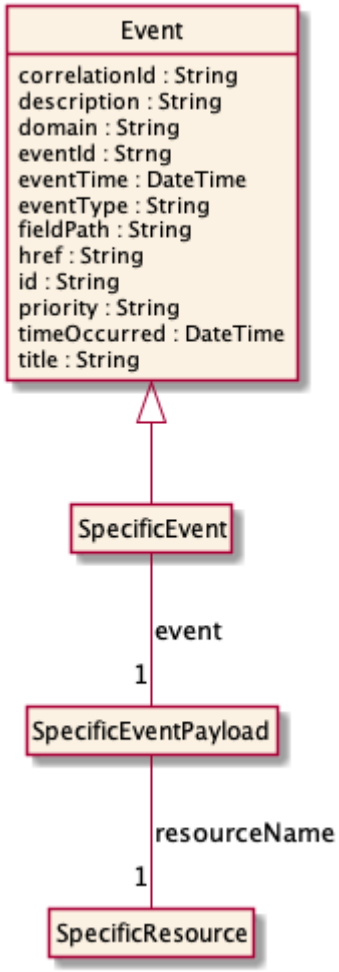


Figure 9 Notification Pattern

Product Batch Event

Message example for ProductBatchEvent event

```
Content-Type: application/json

{
  "correlationId": "126-54f",
  "description": "ProductCreateEvent illustration",
  "domain": "Commercial",
  "eventId": "125",
  "eventTime": "2021-09-27T07:43:59.059Z",
  "eventType": "ProductCreateEvent",
  "priority": "1",
  "timeOcurred": "2021-09-27T07:43:59.059Z",
  "title": "ProductCreateEvent",
  "event": {
    "product": [
     {
       "id": "g265-tf85",
       "href": "https://host:port/productInventory/v5/product/g265-tf85",
       "description": "This product is an Product Specification instance",
       "isBundle": false,
       "isCustomerVisible": false,
       "name": "Voice Over IP Basic instance for Jean",
       "creationDate": "2021-04-12T23:59:59.52Z",
       "status": "created",
       "@type": "Product",
       "productCharacteristic": [
         {
           "id": "Char1",
           "name": "FixedIP",
           "valueType": "boolean",
           "value": false,
           "@type": "BooleanCharacteristic"
         },
         {
           "@type": "ObjectCharacteristic",
           "id": "Char5",
           "name": "FiberSpeed",
           "valueType": "object",
           "value": {
             "@type": "Speed",
             "volume": 90,
             "unit": "Mbps"
           }
         }
       ],
       "place": [
         {
```

```
            "role": "installationAddress",
            "place": {
              "id": "9912",
              "href":
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
              "@referredType": "GeographicAddress",
              "@type": "PlaceRef"
            },
            "@type": "RelatedPlaceRefOrValue"
          }
        ],
        "realizingService": [
          {
            "id": "7854",
            "href": "https://host:port/serviceInventoryManagement/v5/service/7854",
            "@referredType": "Service",
            "@type": "ServiceRef"
          }
        ],
        "productSpecification": {
          "id": "PS-101",
          "href":
"https://host:port/productCatalogManagement/v5/productSpecification/PS-101",
          "@referredType": "ProductSpecification",
          "@type": "ProductSpecificationRef",
          "version": "1"
        },
        "relatedParty": [
          {
            "role": "User",
            "partyOrPartyRole": {
              "id": "45hj-999",
              "href": "https://host:port/partyManagement/v5/individual/45hj-999",
              "name": "Louise",
              "@type": "PartyRef",
              "@referredType": "Individual"
            },
            "@type": "RelatedPartyOrPartyRole"
          }
        ]
      }
    ],
    "relatedParty": [
      {
        "role": "Issuer",
        "partyOrPartyRole": {
          "id": "56d",
          "href": "https://host:port/partyManagement/v5/organization/56d",
          "@type": "PartyRef",
          "@referredType": "Individual"
        },
```

```
        "@type": "RelatedPartyOrPartyRole"
      }
    ],
    "reportingSystem": {
      "id": "123",
      "name": "CRM app",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "source": {
      "id": "123",
      "name": "CRM app",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    }
  },
  "@baseType": "Event",
  "@type": "ProductCreateEvent"
}
```

Product Create Event

Message example for ProductCreateEvent event

```
Content-Type: application/json

{
  "correlationId": "126-54f",
  "description": "ProductCreateEvent illustration",
  "domain": "Commercial",
  "eventId": "125",
  "eventTime": "2021-09-27T07:43:59.059Z",
  "eventType": "ProductCreateEvent",
  "priority": "1",
  "timeOcurred": "2021-09-27T07:43:59.059Z",
  "title": "ProductCreateEvent",
  "event": {
    "product": {
      "id": "g265-tf85",
      "href": "https://host:port/productInventory/v5/product/g265-tf85",
      "description": "This product is an Product Specification instance",
      "isBundle": false,
      "isCustomerVisible": false,
      "name": "Voice Over IP Basic instance for Jean",
      "creationDate": "2021-04-12T23:59:59.52Z",
      "status": "created",
      "@type": "Product",
      "productCharacteristic": [
        {
          "id": "Char1",
```

```
          "name": "FixedIP",
          "valueType": "boolean",
          "value": false,
          "@type": "BooleanCharacteristic"
        },
        {
          "@type": "ObjectCharacteristic",
          "id": "Char5",
          "name": "FiberSpeed",
          "valueType": "object",
          "value": {
            "@type": "Speed",
            "volume": 90,
            "unit": "Mbps"
          }
        }
      ],
      "place": [
        {
          "role": "installationAddress",
          "place": {
            "id": "9912",
            "href":
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
            "@referredType": "GeographicAddress",
            "@type": "PlaceRef"
          },
          "@type": "RelatedPlaceRefOrValue"
        }
      ],
      "realizingService": [
        {
          "id": "7854",
          "href": "https://host:port/serviceInventory/v5/service/7854",
          "@referredType": "Service",
          "@type": "ServiceRef"
        }
      ],
      "productSpecification": {
        "id": "PS-101",
        "href":
"https://host:port/productCatalogManagement/v5/productSpecification/PS-101",
        "@referredType": "ProductSpecification",
        "@type": "ProductSpecificationRef",
        "version": "1"
      },
      "relatedParty": [
        {
          "role": "User",
          "partyOrPartyRole": {
            "id": "45hj-999",
```

```
            "href": "https://host:port/partyManagement/v5/individual/45hj-999",
            "name": "Louise",
            "@type": "PartyRef",
            "@referredType": "Individual"
          },
          "@type": "RelatedPartyOrPartyRole"
        }
      ]
    },
    "relatedParty": [
      {
        "role": "Issuer",
        "partyOrPartyRole": {
          "id": "56d",
          "href": "https://host:port/partyManagement/v5/organization/56d",
          "@type": "PartyRef",
          "@referredType": "Individual"
        },
        "@type": "RelatedPartyOrPartyRole"
      }
    ],
    "reportingSystem": {
      "id": "123",
      "name": "CRM app",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "source": {
      "id": "123",
      "name": "CRM app",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    }
  },
  "@baseType": "Event",
  "@type": "ProductCreateEvent"
}
```

Product Delete Event

Message example for ProductDeleteEvent event

```
Content-Type: application/json

{
  "correlationId": "145d-8hh",
  "description": "ProductDeleteEvent illustration",
  "domain": "Commercial",
  "eventId": "523",
  "eventTime": "2021-09-27T07:43:59.059Z",
```

```
  "eventType": "ProductDeleteEvent",
  "priority": "3",
  "timeOcurred": "2021-09-27T07:43:59.059Z",
  "title": "ProductDeleteEvent",
  "event": {
    "product": {
      "id": "9693",
      "href": "https://host:port/productInventory/v5/product/9693",
      "@type": "ProductRef"
    }
  },
  "reportingSystem": {
    "id": "123",
    "name": "CRM app",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "123",
    "name": "CRM app",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "ProductDeleteEvent"
}
```


Product Attribute Value Change Event

Message example for ProductAttributeValueChangeEvent event


```
Content-Type: application/json

{
  "correlationId": "8a1d7f00-245b",
  "description": "ProductAttributeValueChangeEvent illustration",
  "domain": "Commercial",
  "eventId": "467c-937d-9afe827e85ee",
  "eventTime": "2022-09-14T12:14:28.774Z",
  "eventType": "ProductAttributeValueChangeEvent",
  "priority": "3",
  "timeOcurred": "2022-09-14T12:14:23.473Z",
  "title": "ProductAttributeValueChangeEvent",
  "event": {
    "product": {
      "href": "https://host:port/productInventory/v5/product/30001",
      "id": "30001",
      "@type": "Product",
      "relatedParty": [
        {
```

```
          "role": "Seller",
          "partyOrPartyRole": {
            "id": "456-dd-df45",
            "href": "https://host:port/partyManagement/v5/individual/456-dd-df45",
            "name": "Joe Doe",
            "@type": "PartyRef",
            "@referredType": "Individual"
          },
          "@type": "RelatedPartyOrPartyRole"
        },
        {
          "role": "Customer",
          "partyOrPartyRole": {
            "id": "ff55-hjy4",
            "href": "https://host:port/partyManagement/v5/individual/ff55-hjy4",
            "name": "Jean Pontus",
            "@type": "PartyRoleRef",
            "@referredType": "Customer"
          },
          "@type": "RelatedPartyOrPartyRole"
        }
      ]
    }
  },
  "reportingSystem": {
    "id": "533",
    "name": "APP-963",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "200",
    "name": "APP-893",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "ProductAttributeValueChangeEvent"
}
```

Product State Change Event

Message example for ProductStateChangeEvent event

```
Content-Type: application/json

{
  "correlationId": "dfr-455",
  "description": "ProductStateChangeEvent illustration",
  "domain": "Commercial",
```

```
  "eventId": "963",
  "eventTime": "2021-09-27T07:43:59.059Z",
  "eventType": "ProductStateChangeEvent",
  "priority": "1",
  "timeOcurred": "2021-09-27T07:43:59.059Z",
  "title": "ProductStateChangeEvent",
  "event": {
    "product": {
      "id": "9693",
      "href": "https://host:port/productInventory/v5/product/9693",
      "@type": "Product",
      "status": "suspended"
    }
  },
  "reportingSystem": {
    "id": "123",
    "name": "CRM app",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "123",
    "name": "CRM app",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "ProductStateChangeEvent"
}
```

API OPERATIONS

Every operation consists of two parts:

- REQUEST: Publish a message on a 'commandRequest' channel.
- RESPONSE: Subscribe to the corresponding 'commandReply' channel to receive the response.

Remember the following Async Uniform Contract:

Operation on Entities	Uniform Async API Operation	Description
Query One Entity	retrieveResource	retrieve must be used to retrieve a representation of a resource.
Query Entities	listResource	list must be used to retrieve a list of resources.
Create Entity	createResource	create must be used to create a new resource
Partial Update of an Entity	patchResource	patch must be used to partially update a resource
Remove an Entity	deleteResource	delete must be used to remove a resource

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

Notifications are also described in a subsequent section.

Operations on Product

List or find Product objects

Request topic: {prefix}.productInventory.v5.listProduct.commandRequest

Reply topic: {prefix}.productInventory.v5.listProduct.commandReply

Description

This operation list Product 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 Product from its identifier - instance of Product specification

Request Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
```

```
Reply-Channel: {prefix}.productInventory.v5.listProduct.commandReply
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.listProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "created",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 90,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
```

```
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventory/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventory.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "45hj-999",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-999",
      "name" : "Louise",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}
```


Retrieve a Product from its identifier - instance of Product offering

Request Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.listProduct.commandReply
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
```

```
X-Request-Channel: {prefix}.productInventory.v5.listProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf86",
  "href" : "https://host:port/productInventory/v5/product/g265-tf86",
  "description" : "This product is an Product Offering instance",
  "isBundle" : false,
  "isCustomerVisible" : true,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "created",
  "@type" : "Product",
  "productOffering" : {
    "id" : "PO-101-1",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/PO-101-1",
    "name" : "Voice Over IP Basic",
    "@type" : "ProductOfferingRef",
    "@referredType" : "ProductOffering",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "productRelationship" : [ {
    "id" : "g265-tf85",
    "href" : "https://host:port/productInventory/v5/product/g265-tf85",
    "@type" : "ProductRelationship",
    "relationshipType" : "sells",
    "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
  } ],
  "productPrice" : [ {
    "@type" : "ProductPrice",
    "productOfferingPrice" : {
      "id" : "POP1",
      "name" : "Fiber recurring fee",
      "href" :
"https://host:port/productCatalogManagement/v5/productOfferingPrice/POP1",
      "@referredType" : "ProductOfferingPrice",
      "@type" : "ProductOfferingPriceRef",
      "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOfferingPrice.comman
dRequest"
    },
    "recurringChargePeriod" : "month",
    "price" : {
      "@type" : "Price",
      "taxIncludedAmount" : {
        "unit" : "EUR",
```

```
        "value" : 29.99
      },
      "taxRate" : 15
    },
    "priceType" : "reccurring"
  } ],
  "productTerm" : [ {
    "@type" : "ProductTerm",
    "description" : "Fiber standard commitment",
    "duration" : {
      "amount" : 12,
      "units" : "month"
    },
    "validFor" : {
      "startDateTime" : "2021-04-12T23:59:59.52Z",
      "endDateTime" : "2022-04-11T00:00:00.52Z"
    },
    "name" : "12months commitment"
  } ],
  "relatedParty" : [ {
    "role" : "owner",
    "partyOrPartyRole" : {
      "id" : "45hj-8888",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-8888",
      "name" : "Jean",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}
```

Retrieve a list of Product(s).

Request Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.listProduct.commandReply
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.listProduct.commandRequest
```

Response Payload


```
[ {
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "created",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 90,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventoryManagement/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventoryManagement.v5.retrieveService.commandRequest"
```

```
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "45hj-999",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-999",
      "name" : "Louise",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
} ]
```

Retrieve a list of Product(s) with filter selection.

Request Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.listProduct.commandReply
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.listProduct.commandRequest
```

Response Payload

```
[ {
  "id" : "9ffg-ze56-ed51",
  "href" : "https://host:port/productInventory/v5/product/9ffg-ze56-ed51",
  "status" : "suspended",
```

```
  "orderDate" : "2019-04-11T14:52:21.823Z",
  "productOffering" : {
    "id" : "sxcv-fg65",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/sxcv-
fg65",
    "@type" : "ProductOfferingRef",
    "@referredType" : "ProductOffering",
    "name" : "TMF 35 Bundle Plan",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "@type" : "Product",
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}, {
  "id" : "7412",
  "href" : "https://host:port/productInventory/v5/product/7412",
  "status" : "suspended",
  "orderDate" : "2019-04-18T14:21:31.325Z",
  "productOffering" : {
    "id" : "9d63-r8i9",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/9d63-
r8i9",
    "@type" : "ProductOfferingRef",
    "@referredType" : "ProductOffering",
    "name" : "TMF 45 Bundle Plan",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "@type" : "Product",
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}, {
  "id" : "3214",
  "href" : "https://host:port/productInventory/v5/product/3214",
  "status" : "suspended",
  "orderDate" : "2019-04-21T18:08:31.325Z",
  "productOffering" : {
    "id" : "sxcv-fg65",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/sxcv-
fg65",
    "@type" : "ProductOfferingRef",
    "@referredType" : "ProductOffering",
    "name" : "TMF 35 Bundle Plan",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "@type" : "Product",
```

```
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}, {
  "id" : "6547",
  "href" : "https://host:port/productInventory/v5/product/6547",
  "status" : "suspended",
  "orderDate" : "2019-04-29T10:48:28.325Z",
  "productOffering" : {
    "id" : "3bb2-e896",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/3bb2-
e896",
    "@type" : "ProductOfferingRef",
    "@referredType" : "ProductOffering",
    "name" : "TMF 75 Bundle Plan",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "@type" : "Product",
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
} ]
```

Creates a Product

Request topic: {prefix}.productInventory.v5.createProduct.commandRequest

Reply topic: {prefix}.productInventory.v5.createProduct.commandReply

Description

This operation creates a Product entity.

Usage samples

Creation of a new product with POST operation

Request Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.createProduct.commandReply
```

Request Payload

```
{
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
```

```
  "status" : "created",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 90,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventory/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventory.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
```

```
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "45hj-999",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-999",
      "name" : "Louise",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ]
}
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 201
X-Request-Channel: {prefix}.productInventory.v5.createProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "created",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 90,
      "unit" : "Mbps"
```

```
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventory/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventory.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "45hj-999",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-999",
      "name" : "Louise",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
```

```
}
```

Creation of a new product with intent with POST operation

Request Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.createProduct.commandReply
```

Request Payload

```
{
  "description" : "product description",
  "isBundle" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "@baseType" : "Product",
  "@type" : "Product",
  "@schemaLocation" : "https:://host:port/standardProduct.json",
  "productOffering" : {
    "id" : "PO-101-1",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/PO-101-1",
    "name" : "Voice Over IP Basic",
    "@type" : "ProductOfferingRef",
    "@referredType" : "ProductOffering",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "productCharacteristic" : [ {
    "name" : "Number",
    "@type" : "StringCharacteristic",
    "valueType" : "string",
    "value" : "415 279 7439"
  } ],
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "45hj-8888",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-8888",
      "name" : "Jean",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
```

```
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@type" : "ProductSpecificationRef",
    "@referredType" : "ProductSpecification",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "intent" : {
    "@type" : "Intent",
    "id" : "42",
    "description" : "Intent for ordering live broadcast service for an event",
    "validFor" : {
      "startDateTime" : "2022-10-23T00:30:00.00Z",
      "endDateTime" : "2022-10-19T23:30:00.00Z"
    },
    "isBundle" : true,
    "version" : "1.0.0",
    "intentSpecification" : {
      "@type" : "IntentSpecificationRef",
      "id" : "EventLiveBroadcast_IntentSpec",
      "name" : "EventLiveBroadcastIntentSpec",
      "@referredType" : "IntentSpecification",
      "@href" :
"https://host:port/intent/v5/IntentSpecification/EventLiveBroadcast_IntentSpec"
    },
    "name" : "EventLiveBroadcast",
    "expression" : {
      "@type" : "JsonLdExpression",
      "expressionValue" : {
        "@context" : {
          "icm" : "http://www.models.tmforum.org/tio/v1.0.0/IntentCommonModel#",
          "cat" : "http://www.operator.com/Catalog#",
          "idan" : "http://www.idan-tmforum-
catalyst.org/IntentDrivenAutonomousNetworks#",
          "xsd" : "http://www.w3.org/2001/XMLSchema#",
          "t" : "http://www.w3.org/2006/time#",
          "elb" : "http://www.operator.com/Catalog/EventWirelessAccess#",
          "app" : "http://www.operator.com/Catalog/StreamingApplication#",
          "geo" : "https://tmforum.org/2020/07/geographicPoint#"
        },
        "idan:EventLiveBroadcast000001" : {
          "@type" : "icm:Intent",
          "icm:intentOwner" : "idan:Salesforce",
          "icm:hasExpectation" : {
            "idan:Delivery_service" : {
              "@type" : "icm:DeliveryExpectation",
              "icm:target" : "_:service",
              "icm:params" : {
                "icm:targetDescription" : "cat:EventWirelessAccess"
```

```
      }
    },
    "idan:Delivery_app" : {
      "@type" : "icm:DeliveryExpectation",
      "icm:target" : "_:application",
      "icm:params" : {
        "icm:targetDescription" : "cat:StreamingApplication"
      }
    },
    "idan:Property_service" : {
      "@type" : "icm:PropertyExpectation",
      "icm:target" : "_:service",
      "icm:params" : {
        "elb:serviceQuality" : [ {
          "icm:value" : "4KUHD"
        } ],
        "elb:numberOfParticipants" : [ {
          "icm:atMost" : "200"
        } ],
        "elb:areaOfService" : [ {
          "geo:geographicPoints" : [ {
            "geo:longitude" : 90,
            "geo:latitude" : 44,
            "geo:altitude" : 84
          }, {
            "geo:longitude" : 84,
            "geo:latitude" : -12,
            "geo:altitude" : 24
          }, {
            "geo:longitude" : 131,
            "geo:latitude" : -36,
            "geo:altitude" : 29
          }, {
            "geo:longitude" : 7,
            "geo:latitude" : 81,
            "geo:altitude" : -42
          } ]
        } ]
      }
    },
    "idan:Property_app" : {
      "@type" : "icm:PropertyExpectation",
      "icm:target" : "_:application",
      "icm:params" : {
        "app:appType" : [ {
          "icm:value" : "AWS MediaLive"
        }, {
          "icm:value" : "Facebook Live"
        }, {
          "icm:value" : "YouTube"
        } ]
```

```
            }
          },
          "idan:Reporting" : {
            "@type" : "icm:ReportingExpectation",
            "icm:target" : "idan:EventLiveBroadcast",
            "icm:params" : {
              "icm:reportingInterval" : [ {
                "t:Duration" : [ {
                  "t:numbericDuration" : 10,
                  "t:temporalUnit" : "unitMinute"
                } ]
              } ],
              "icm:reportingEvent" : [ "icm:StateComplies", "icm:StateDegrades" ]
            }
          }
        }
      }
    },
    "lastUpdate" : "2023-03-09T08:42:33.044Z"
  }
}
```


Response Headers


```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 201
X-Request-Channel: {prefix}.productInventory.v5.createProduct.commandRequest
```


Response Payload


```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "product description",
  "isBundle" : false,
  "isCustomerVisible" : true,
  "name" : "Voice Over IP Basic instance for Jean",
  "productSerialNumber" : "N/A",
  "startDate" : "2017-11-01T09:37:29.961Z",
  "status" : "created",
  "@baseType" : "Product",
  "@type" : "Product",
  "@schemaLocation" : "https:://host:port/standardProduct.json",
  "productOffering" : {
    "id" : "PO-101-1",
    "href" : "https://host:port/productCatalogManagement/v5/productOffering/PO-101-1",
    "name" : "Voice Over IP Basic",
    "@type" : "ProductOfferingRef",
```

```
    "@referredType" : "ProductOffering",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductOffering.commandRequ
est"
  },
  "productCharacteristic" : [ {
    "name" : "Number",
    "@type" : "StringCharacteristic",
    "valueType" : "string",
    "value" : "415 279 7439"
  } ],
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "45hj-8888",
      "href" : "https://host:port/partyManagement/v5/individual/45hj-8888",
      "name" : "Jean",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@type" : "ProductSpecificationRef",
    "@referredType" : "ProductSpecification",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "intent" : {
    "@type" : "Intent",
    "id" : "42",
    "lifecycleStatus" : "created",
    "description" : "Intent for ordering live broadcast service for an event",
    "validFor" : {
      "startDateTime" : "2022-10-23T00:30:00.00Z",
      "endDateTime" : "2022-10-19T23:30:00.00Z"
    },
    "isBundle" : true,
    "version" : "1.0.0",
    "intentSpecification" : {
      "@type" : "IntentSpecificationRef",
      "id" : "EventLiveBroadcast_IntentSpec",
      "name" : "EventLiveBroadcastIntentSpec",
      "@referredType" : "IntentSpecification",
```

```
      "@href" :
"https://host:port/intent/v5/IntentSpecification/EventLiveBroadcast_IntentSpec"
    },
    "name" : "EventLiveBroadcast",
    "expression" : {
      "@type" : "JsonLdExpression",
      "expressionValue" : {
        "@context" : {
          "icm" : "http://www.models.tmforum.org/tio/v1.0.0/IntentCommonModel#",
          "cat" : "http://www.operator.com/Catalog#",
          "idan" : "http://www.idan-tmforum-
catalyst.org/IntentDrivenAutonomousNetworks#",
          "xsd" : "http://www.w3.org/2001/XMLSchema#",
          "t" : "http://www.w3.org/2006/time#",
          "elb" : "http://www.operator.com/Catalog/EventWirelessAccess#",
          "app" : "http://www.operator.com/Catalog/StreamingApplication#",
          "geo" : "https://tmforum.org/2020/07/geographicPoint#"
        },
        "idan:EventLiveBroadcast000001" : {
          "@type" : "icm:Intent",
          "icm:intentOwner" : "idan:Salesforce",
          "icm:hasExpectation" : {
            "idan:Delivery_service" : {
              "@type" : "icm:DeliveryExpectation",
              "icm:target" : "_:service",
              "icm:params" : {
                "icm:targetDescription" : "cat:EventWirelessAccess"
              }
            },
            "idan:Delivery_app" : {
              "@type" : "icm:DeliveryExpectation",
              "icm:target" : "_:application",
              "icm:params" : {
                "icm:targetDescription" : "cat:StreamingApplication"
              }
            },
            "idan:Property_service" : {
              "@type" : "icm:PropertyExpectation",
              "icm:target" : "_:service",
              "icm:params" : {
                "elb:serviceQuality" : [ {
                  "icm:value" : "4KUHD"
                } ],
                "elb:numberOfParticipants" : [ {
                  "icm:atMost" : "200"
                } ],
                "elb:areaOfService" : [ {
                  "geo:geographicPoints" : [ {
                    "geo:longitude" : 90,
                    "geo:latitude" : 44,
                    "geo:altitude" : 84
```

```
                }, {
                  "geo:longitude" : 84,
                  "geo:latitude" : -12,
                  "geo:altitude" : 24
                }, {
                  "geo:longitude" : 131,
                  "geo:latitude" : -36,
                  "geo:altitude" : 29
                }, {
                  "geo:longitude" : 7,
                  "geo:latitude" : 81,
                  "geo:altitude" : -42
                } ]
              } ]
            }
          },
          "idan:Property_app" : {
            "@type" : "icm:PropertyExpectation",
            "icm:target" : "_:application",
            "icm:params" : {
              "app:appType" : [ {
                "icm:value" : "AWS MediaLive"
              }, {
                "icm:value" : "Facebook Live"
              }, {
                "icm:value" : "YouTube"
              } ]
            }
          },
          "idan:Reporting" : {
            "@type" : "icm:ReportingExpectation",
            "icm:target" : "idan:EventLiveBroadcast",
            "icm:params" : {
              "icm:reportingInterval" : [ {
                "t:Duration" : [ {
                  "t:numbericDuration" : 10,
                  "t:temporalUnit" : "unitMinute"
                } ]
              } ],
              "icm:reportingEvent" : [ "icm:StateComplies", "icm:StateDegrades" ]
            }
          }
        }
      }
    },
    "lastUpdate" : "2023-03-09T08:42:33.044Z"
  },
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
```

```
}
```

Updates partially a Product

Request topic: {prefix}.productInventory.v5.patchProduct.commandRequest

Reply topic: {prefix}.productInventory.v5.patchProduct.commandReply

Description

This operation allows partial updates of a Product entity. Support of json/merge (https://tools.ietf.org/html/rfc7386) is mandatory, support of json/patch (http://tools.ietf.org/html/rfc5789) is optiona. 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 createProduct operation applies to the patchProduct operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

Non Patchable Attributes	Rule
creationDate	
href	
id	

Patchable Attributes	Rule
agreementItem	
billingAccount	
description	
intent	
isBundle	
isCustomerVisible	
name	
orderDate	
place	
product	
productCharacteristic	
productOffering	
productOrderItem	
productPrice	
productRelationship	

Patchable Attributes	Rule
productSerialNumber	
productSpecification	
productTerm	
realizingResource	
realizingService	
relatedParty	
startDate	
status	
terminationDate	

Usage samples

Here's an example of a request for updating a Product resource - set status to active. This example illustrates patch using using the entity payload.

This example uses the PatchProductJsonRequest request message (used for a payload of type application/json).

Request message header

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.patchProduct.commandReply
Parameters: {
    "id": g265-tf85
}
```

Request Payload

```
{
  "@type" : "Product",
  "status" : "active"
}
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.patchProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "active",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 120,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventoryManagement/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventoryManagement.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
```

```
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "777",
      "href" : "https://host:port/partyManagement/v5/individual/777",
      "name" : "Pierre",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}
```

Here's an example of a request for updating a Product resource - set status to active. This example illustrates patch using application/merge-patch+json.

This example uses the PatchProductMergePatchRequest request message (used for a payload of type application/merge-patch+json).

Request message header

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.patchProduct.commandReply
Parameters: {
    "id": g265-tf85
}
```

Request Payload

```
{
  "@type" : "Product",
  "status" : "active"
}
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.patchProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "active",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 120,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
```

```
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventoryManagement/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventoryManagement.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "777",
      "href" : "https://host:port/partyManagement/v5/individual/777",
      "name" : "Pierre",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}
```

Here's an example of a request for updating a Product resource - set status to active. This example illustrates patch using using the entity payload-patch+json.

This example uses the PatchProductJsonPatchRequest request message (used for a payload of type application/json-patch+json).

Request message header

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.patchProduct.commandReply
Parameters: {
    "id": g265-tf85
}
```

Request Payload

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

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.patchProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "active",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 120,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
```

```
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventoryManagement/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventoryManagement.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "777",
      "href" : "https://host:port/partyManagement/v5/individual/777",
      "name" : "Pierre",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}
```

Here's an example of a request for updating a Product resource - change relatedParty and bandwith characteristic. This example illustrates patch using using the entity payload-patch-query+json.

This example uses the PatchProductPatchQueryRequest request message (used for a payload of type

application/json-patch-query+json).

Request message header

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.patchProduct.commandReply
Parameters: {
    "id": g265-tf85
}
```

Request Payload

```
[ {
  "op" : "replace",
  "path" : "/relatedParty/partyOrPartyRole/id?relatedParty.role=user",
  "value" : "777"
}, {
  "op" : "replace",
  "path" : "/productCharacteristic/value?id=Char5",
  "value" : {
    "@type" : "Speed",
    "volume" : 120,
    "unit" : "Mbps"
  }
} ]
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 200
X-Request-Channel: {prefix}.productInventory.v5.patchProduct.commandRequest
```

Response Payload

```
{
  "id" : "g265-tf85",
  "href" : "https://host:port/productInventory/v5/product/g265-tf85",
  "description" : "This product is an Product Specification instance",
  "isBundle" : false,
  "isCustomerVisible" : false,
  "name" : "Voice Over IP Basic instance for Jean",
  "creationDate" : "2021-04-12T23:59:59.52Z",
  "status" : "active",
  "@type" : "Product",
  "productCharacteristic" : [ {
    "@type" : "BooleanCharacteristic",
    "id" : "Char1",
```

```
    "name" : "FixedIP",
    "valueType" : "boolean",
    "value" : false
  }, {
    "@type" : "ObjectCharacteristic",
    "id" : "Char5",
    "name" : "FiberSpeed",
    "valueType" : "object",
    "value" : {
      "@type" : "Speed",
      "volume" : 120,
      "unit" : "Mbps"
    }
  } ],
  "place" : [ {
    "role" : "installationAddress",
    "place" : {
      "id" : "9912",
      "href" :
"https://host:port/geographicAddressManagement/v5/geographicAddress/9912",
      "@referredType" : "GeographicAddress",
      "@type" : "PlaceRef",
      "topicRef" :
"kafka://host/{prefix}.geographicAddressManagement.v5.retrieveGeographicAddress.comman
dRequest"
    },
    "@type" : "RelatedPlaceRefOrValue"
  } ],
  "realizingService" : [ {
    "id" : "7854",
    "href" : "https://host:port/serviceInventoryManagement/v5/service/7854",
    "@referredType" : "Service",
    "@type" : "ServiceRef",
    "topicRef" :
"kafka://host/{prefix}.serviceInventoryManagement.v5.retrieveService.commandRequest"
  } ],
  "productSpecification" : {
    "id" : "PS-101",
    "href" : "https://host:port/productCatalogManagement/v5/productSpecification/PS-
101",
    "@referredType" : "ProductSpecification",
    "@type" : "ProductSpecificationRef",
    "version" : "1",
    "topicRef" :
"kafka://host/{prefix}.productCatalogManagement.v5.retrieveProductSpecification.comman
dRequest"
  },
  "relatedParty" : [ {
    "role" : "User",
    "partyOrPartyRole" : {
      "id" : "777",
```

```
      "href" : "https://host:port/partyManagement/v5/individual/777",
      "name" : "Pierre",
      "@type" : "PartyRef",
      "@referredType" : "Individual",
      "topicRef" :
"kafka://host/{prefix}.partyManagement.v5.retrieveIndividual.commandRequest"
    },
    "@type" : "RelatedPartyOrPartyRole"
  } ],
  "topicRef" :
"kafka://host/{prefix}.productInventory.v5.retrieveProduct.commandRequest"
}
```

Deletes a Product

Request topic: {prefix}.productInventory.v5.deleteProduct.commandRequest

Reply topic: {prefix}.productInventory.v5.deleteProduct.commandReply

Description

This operation deletes a Product entity.

Usage samples

Here's an example of a request for delete a specific Product.

Request message header

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Reply-Channel: {prefix}.productInventory.v5.deleteProduct.commandReply
Parameters: {
    "id": 3180
}
```

Response Headers

```
X-Correlation-Id: 4226B739-1DD2-4B43-A393-5E6F05CEF169
Status-Code: 204
X-Request-Channel: {prefix}.productInventory.v5.deleteProduct.commandRequest
```

NOTIFICATIONS

Topic for Product entity: {prefix}.productInventory.v5.product.notificationEvent

For every single of operation on the entities use the following templates and provide sample notification message payloads.

It is assumed that consumers will subscribe to the notificationEvent channel to receive notifications, and that the server component will post notifications to that channel.

Publish Event to listener

Here’s an example of a notification received by the consumer. 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.

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

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

Acknowledgements

Version History

Version Number	Date	Release led by:	Description
Version 1.0.0	04/15/2013	Pierre Gauthier TM Forum pgauthier@tmforum.org	First Release of Draft Version of the Document.
Version 2.0.0	04/15/2016	Pierre Gauthier TM Forum pgauthier@tmforum.org, Mariano Belaunde Orange mariano.belaunde@orange.com	Generated from API Data Model.
Version 3.0.0	05/15/2018	Ludovic Robert Ludovic.robert@orange.com , Pierre Gauthier TM Forum pgauthier@tmforum.org	Updated * to be aligned with Guideline 3.0 * to integrate change requests from MEF to integrate change requests from Amdocs, Telefonica, Vodafone & Orange
Version 4.0.0		Ludovic Robert Ludovic.robert@orange.com , Pierre Gauthier TM Forum pgauthier@tmforum.org	Schema-driven API with polymorphism pattern Modify cardinality to BillingAccount Add link to productOrder Add link to productTerm Align productPrice with productOrder API
Version 5.0.0	09/18/2023	Anh Tuan NGUYEN (Orange)	Migration to OAS (Open API Specification 3) and some schemas changed
Version 5.1.0	01/30/2024	Anh Tuan NGUYEN (Orange)	Userguide update (ack, UC, lifecycle) and conformance

Release History

Release Number	Date	Release led by:	Description
Release 16.5	April 2017	Mariano Belaunde mariano.belaunde@orange.com Pierre Gauthier pgauthier@tmforum.org	
Release 18.0	05/15/2018	Ludovic Robert Ludovic.robert@orange.com Pierre Gauthier pgauthier@tmforum.org	

Release Number	Date	Release led by:	Description
Release 19.0		Ludovic Robert Ludovic.robert@orange.com Pierre Gauthier pgauthier@tmforum.org	Version 4.0 of the API REST Nota: the version 4.0 is assigned to all the APIs delivered in the release 19.0

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