

TM Forum Specification

Service Qualification Management

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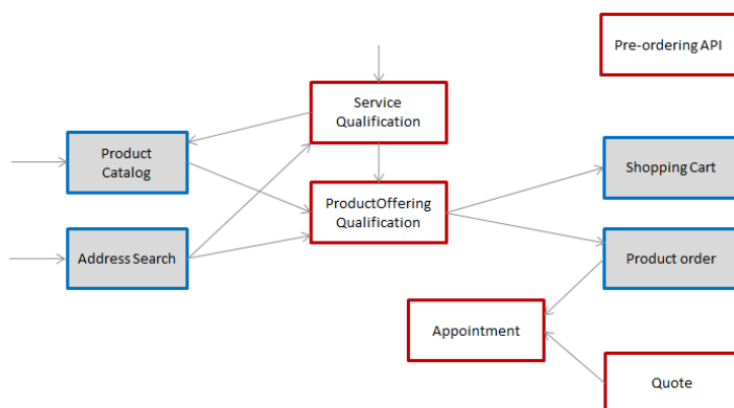
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Introduction

The following document is the specification of the REST API for ServiceQualification management. It includes the model definition as well as all available operations.

In the Open Digital Economy where multiple actors (SDPs, CSPs, ...) may be involved with the delivery of an end-to end service, those actors need to collaborate and interact with the customer as needed.

Following diagram shows ServiceQualification API within pre-ordering API package:



Service Qualification API is one of Pre-Ordering Management API Family. Service Qualification API goal is to provide service technical eligibility in the context of the interaction. This API allows to:

- Request a specific service (of an array of service) eligibility providing as an input configured service. The resource `checkServiceQualification` is used for this purpose. The requester will provide an array of service qualification item and expect to have a qualification result for each one of them. In the response, the API will provide qualification result but also:
 - Eligibility unavailability reason (if any)
 - Alternate service proposal (if any).
- Look for retrieving service available depending on criteria providing in the request – The main UC is to provide a service category and a place for example and get in the response all available service. In the request the requested provided searchCriteria(s) – in response requester get this search criteria plus an array of `ServiceQualificationItem` for each service available. Note that if no service are available, no error will be triggered and no `ServiceQualificationItem` will be in the answer (only searchCriteria are in the response)

Because the API allows describing service from the inventory, it is also possible to use it to

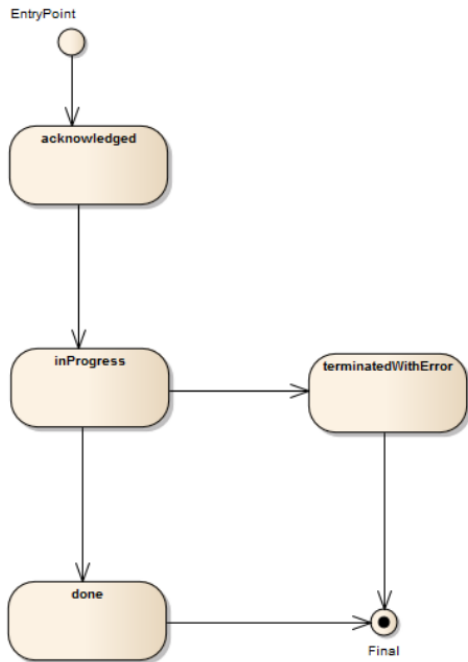
retrieve service available to complete existing service for both resources.

This API did not trigger any modification on the service in the inventory – in particular the service state is not changed (no shift to eligibilityCheck)

In the request, for both resources, the following attributes could be filled: • service, serviceSpecification, category or service characteristics will be indicated (at least one is mandatory), • relatedParty, for which the qualification must be done, • place, where the customer wants his service, • expected qualification date.

Lifecycle

The state machine specifying the typical state change transitions is provided below. This is standard task based resource lifecycle:



Sample Use Cases

To provide some use-cases:

For checkServiceQualification:

- Check if we can deliver a 4k TV service at a specified address
- Check if we can deliver new IP TV service at the same location of an existing and active Access service (i.e. without explicitly specifying address but using service relationship)
- Check if we can upgrade the download speed of an existing and active service from 100 Mb/s to 600Mb/s

For queryServiceQualification:

- Retrieve a list of service specification – from a service category - available at a given place
- Retrieve a list of service specification connecteable to an existing service

Support of polymorphism and extension patterns

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

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

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

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

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

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

RESOURCE MODEL

Managed Entity and Task Resource Models

QueryServiceQualification resource

Resource model

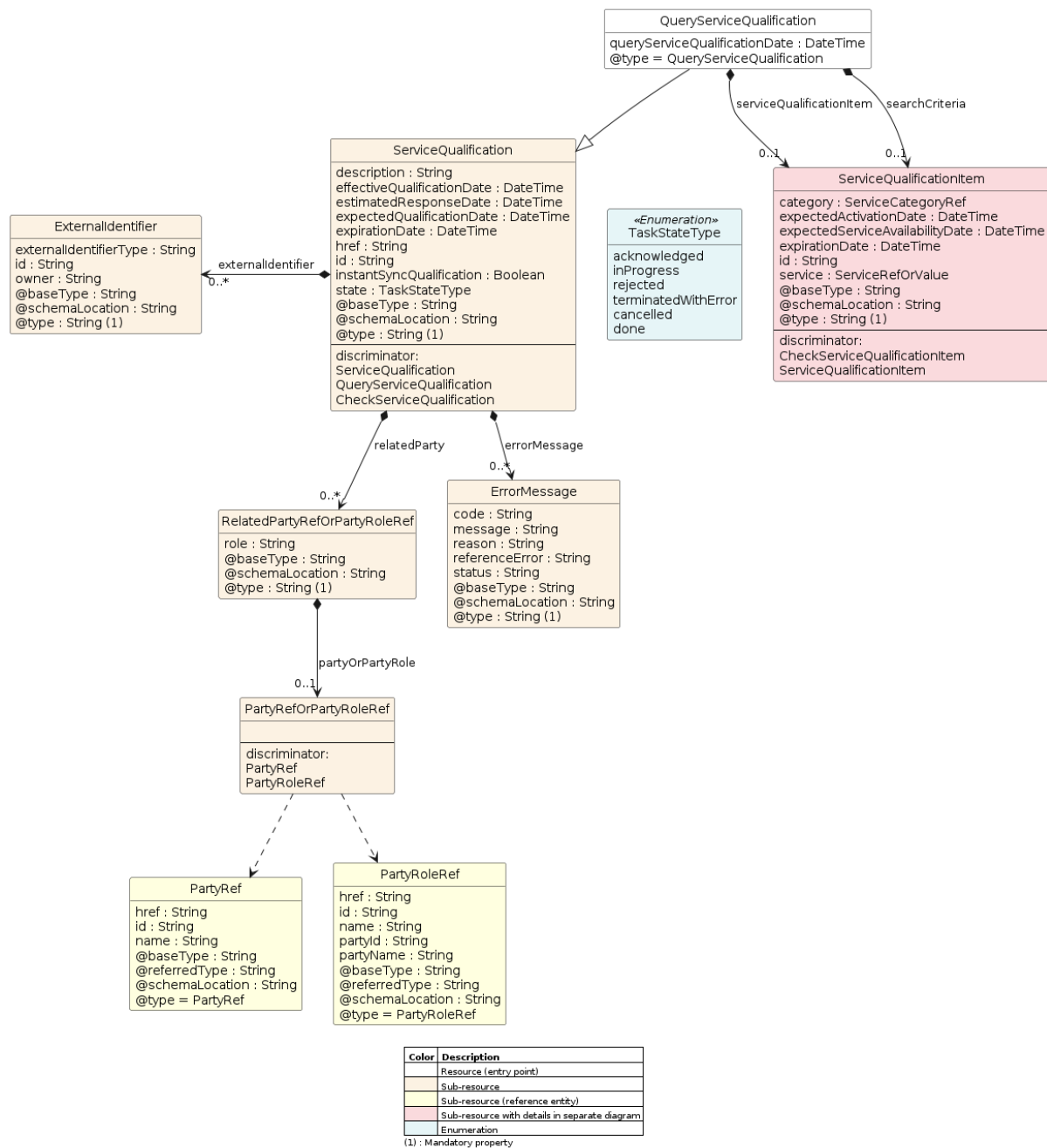


Figure 1 - QueryServiceQualification

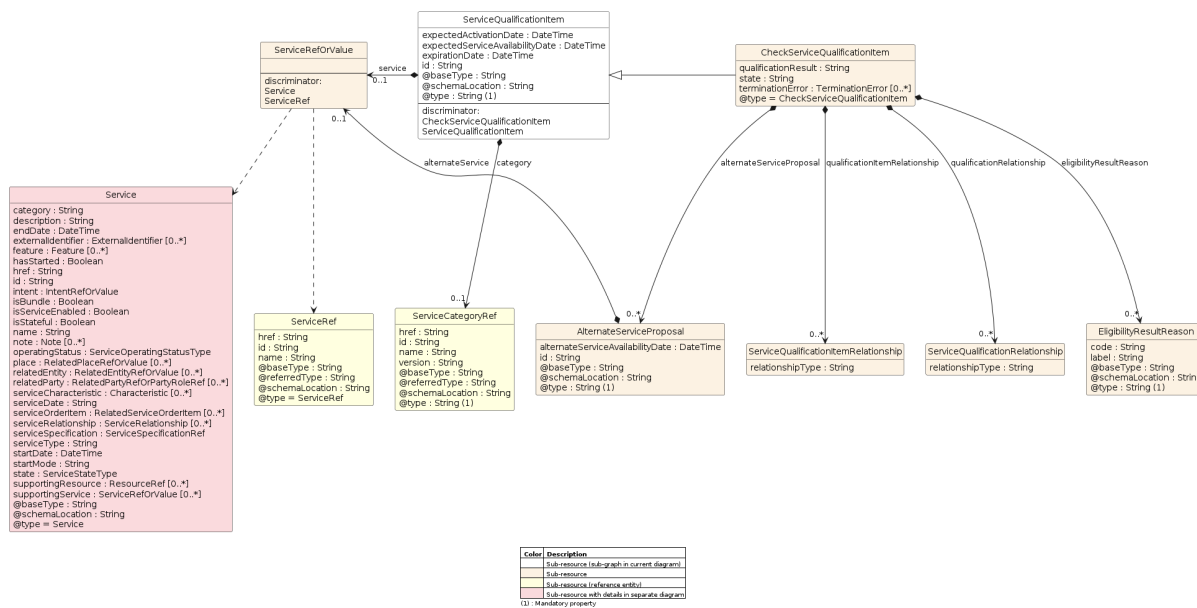
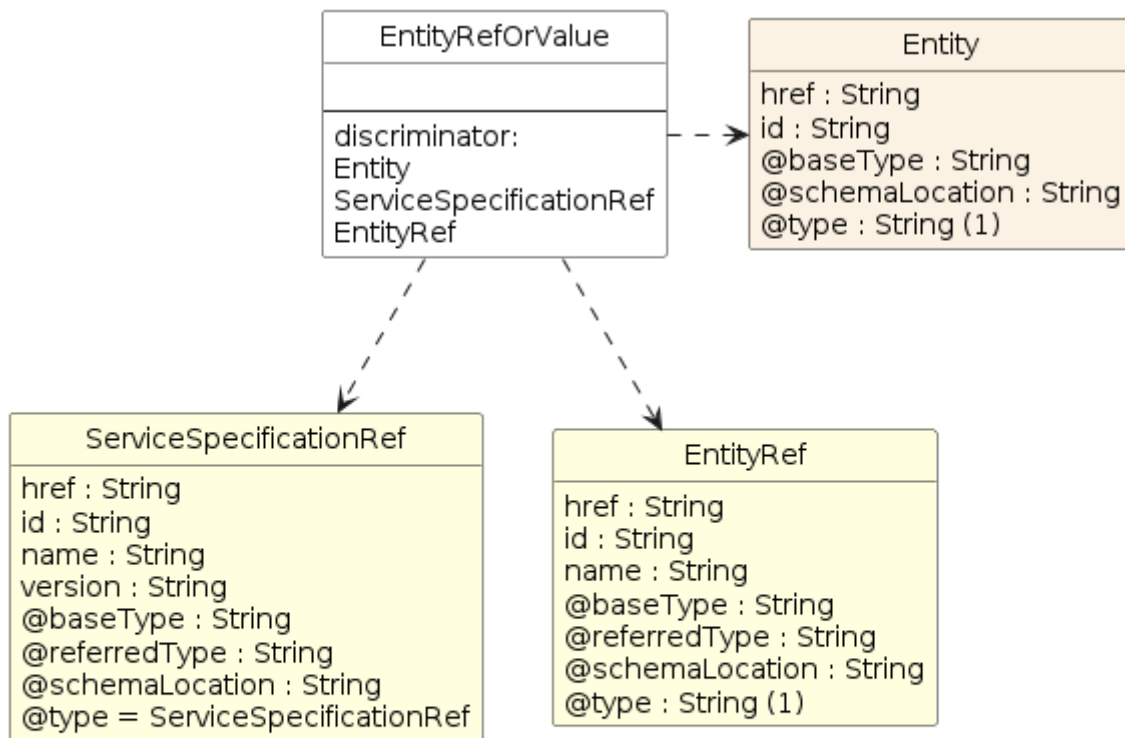


Figure 2 - ServiceQualificationItem



Color	Description
	Sub-resource (sub-graph in current diagram)
	Sub-resource
	Sub-resource (reference entity)

(1) : Mandatory property

Figure 3 - EntityRefOrValue

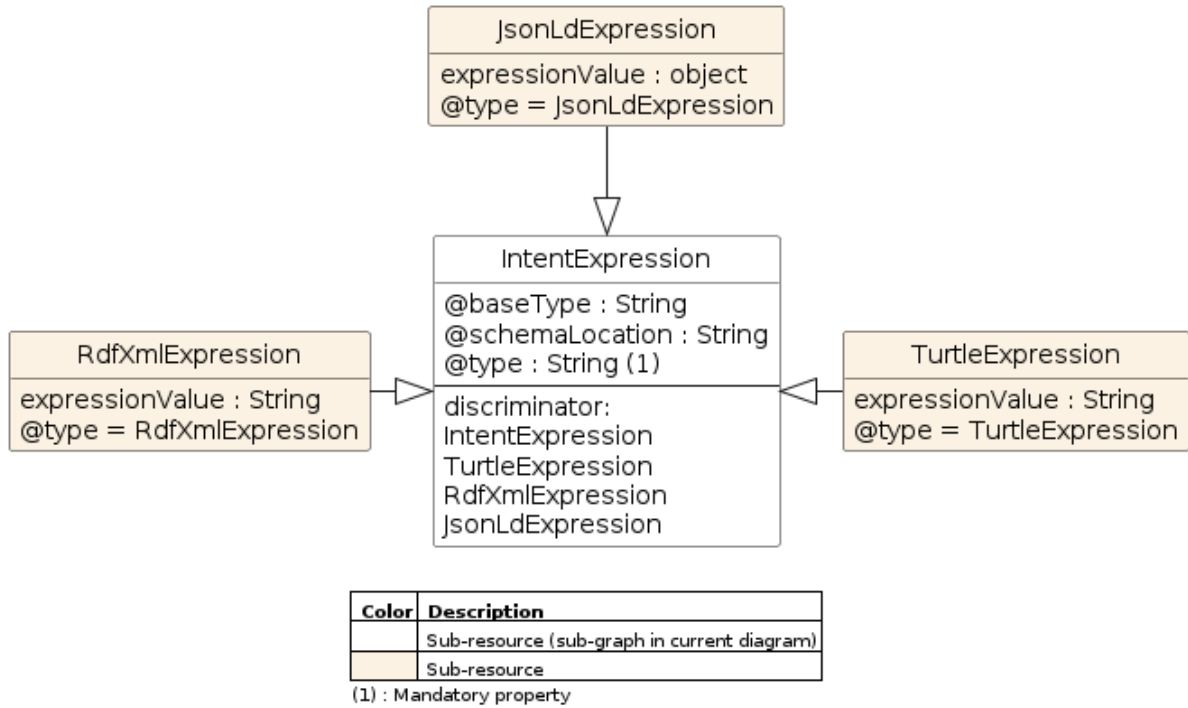


Figure 4 - IntentExpression

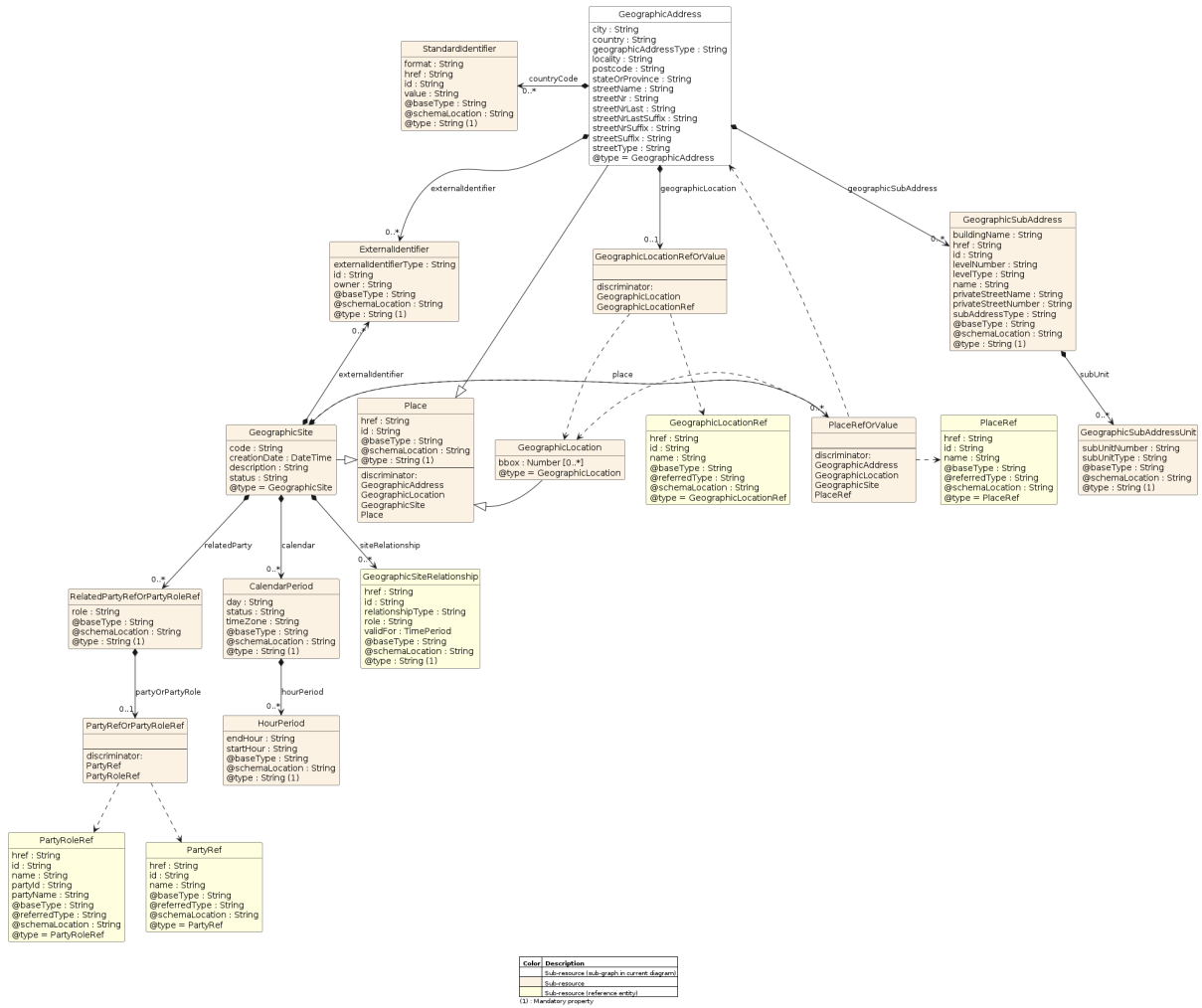


Figure 5 - GeographicAddress

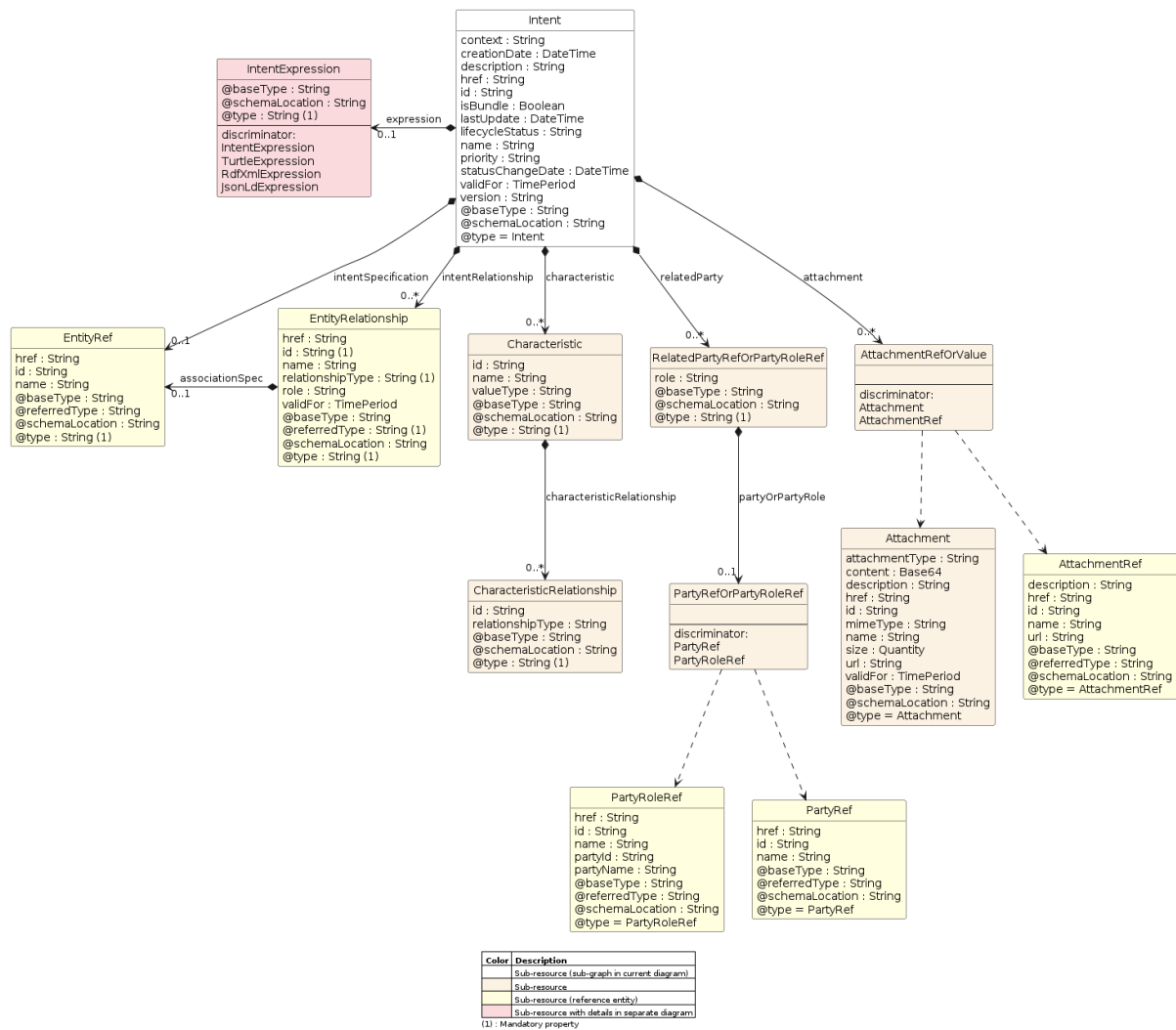


Figure 6 - Intent

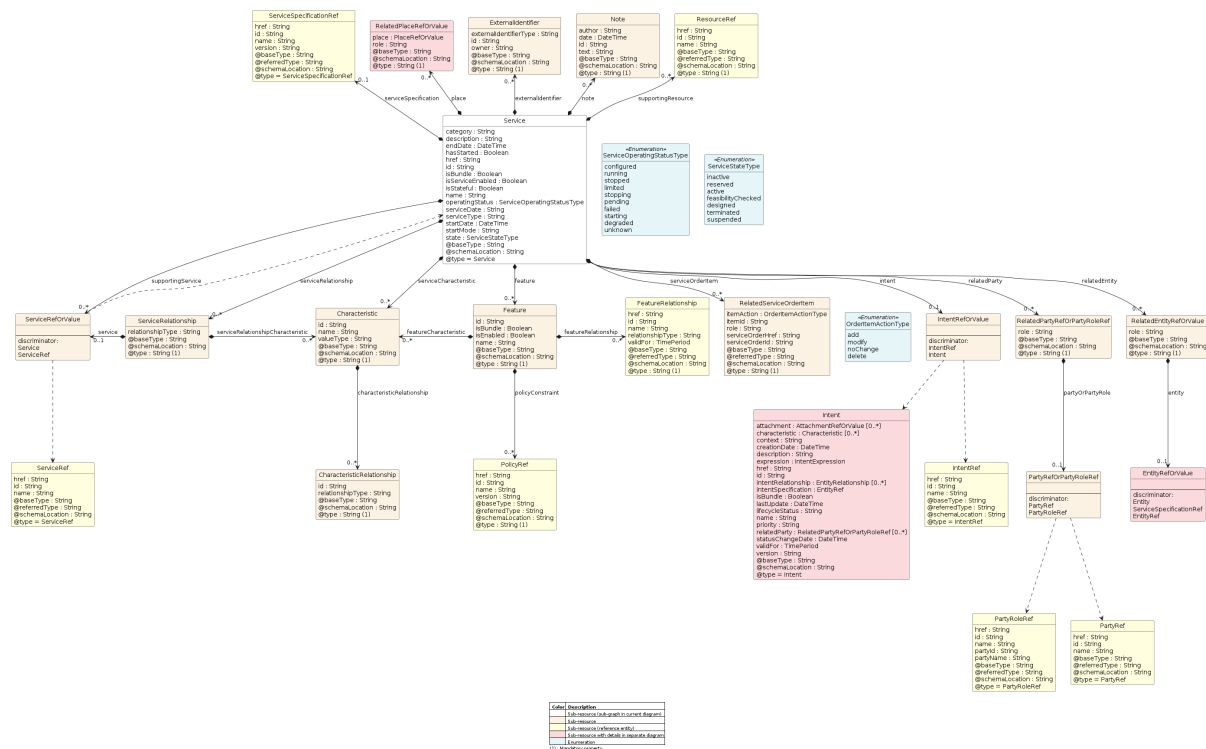


Figure 7 - Service

Field descriptions

QueryServiceQualification fields

description	A String. Description of the serviceQualification.
effectiveQualificationDate	A DateTime. Effective date to serviceQualification completion.
errorMessage	An ErrorMessage. A list of error message contains the error that caused the termination of ServiceQualification task.
estimatedResponseDate	A DateTime. Date when the requester expect to provide an answer for the qualification request.
expectedQualificationDate	A DateTime. A date (DateTime). Deadline date when the requester expected a qualification answer.
expirationDate	A DateTime. Date when the qualification response expires.
externalIdentifier	An ExternalIdentifier. A list of external identifiers associated with this resource.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
instantSyncQualification	A Boolean. An indicator which when the value is "true" means that requester expects to get qualification result immediately in the response. If the indicator is true then the response code of 200 indicates the operation is successful otherwise a task is created with a response 201.
queryServiceQualificationDate	A DateTime. Date when the serviceQualification was submitted.

relatedParty	A RelatedPartyRefOrPartyRoleRef. A list of related party references, defines party or party role linked to this request.
searchCriteria	A ServiceQualificationItem.
serviceQualificationItem	A ServiceQualificationItem. A list of service qualification items.
state	A TaskStateType. Possible values for the state of a task.
@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.

AlternateServiceProposal sub-resource fields

alternateService	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
alternateServiceAvailabilityDate	A DateTime. Alternate availability date in case seller is not able to meet requested expected availability date for the service.
id	A String. Identifier of a alternate service proposal.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

Attachment sub-resource fields

attachmentType	A String. A business characterization of the purpose of the attachment, for example logo, instructionManual, contractCopy.
content	A Base64. The actual contents of the attachment object, if embedded, encoded as base64.
description	A String. A narrative text describing the content of the attachment.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
contentType	A String. A technical characterization of the attachment content format using IETF Mime Types.
name	A String. The name of the attachment.
size	A Quantity. An amount in a given unit.
url	A String. Uniform Resource Locator, is a web page address (a subset of URI).

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

AttachmentRef sub-resource fields

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

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.
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.
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.

CheckServiceQualificationItem sub-resource fields

alternateServiceProposal	An AlternateServiceProposal. Alternate service proposal is used when the requested service is not available with characteristic and date asked for. An alternate proposal could be a distinct service Spec close to requested one or same as requested but with a different availability date.
category	A ServiceCategoryRef.
eligibilityResultReason	An EligibilityResultReason. A list of eligibility result reasons (EligibilityResultReason [*]). Reason for eligibility result, whatever the result is (availability or unavailability).
expectedActivationDate	A DateTime. The date when the service is expected to be activated.
expectedServiceAvailabilityDate	A DateTime. Date when the requester looks for service availability.
expirationDate	A DateTime. Date when the qualification item response expires.
id	A String. Id of the Service Qualification Item.
qualificationItemRelationship	A ServiceQualificationItemRelationship. A list of qualification item relationships used to describe relationship between serviceQualification item from the same serviceQualification.
qualificationRelationship	A ServiceQualificationRelationship. Structure used to describe relationship between serviceQualification item from the same serviceQualification.

qualificationResult	A String. Qualification result for serviceQualification item. It could be: - qualified (request service are available), - unqualified (requested not available and not alternate available), - alternate (requested not available but proposal available).
service	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
state	A String. State of the serviceQualification item (acknowledged, inProgress, terminatedWithError, done).
terminationError	A TerminationError. If qualificationItem has not been done properly this lists the error(s) that caused termination of the qualification.
@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.

EligibilityResultReason sub-resource fields

code	A String. Result reason code.
label	A String. Human readable result reason label.
@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.

Entity sub-resource fields

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

EntityRef sub-resource fields

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

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

EntityRelationship sub-resource fields

associationSpec	An EntityRef.
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.
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.

ErrorMessage sub-resource fields

code	A String. Error code.
message	A String. More details and corrective actions related to the error.
reason	A String. Explanation of the reason for the error.
referenceError	A String. URI of documentation describing the error.
status	A String. Error code extension like sys-ABC-2001.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

ExternalIdentifier sub-resource fields

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

Feature sub-resource fields

featureCharacteristic	A Characteristic. This is a list of Characteristics for a particular feature.
featureRelationship	A FeatureRelationship.
id	A String. Unique identifier.
isBundle	A Boolean. True if this is a feature group. Default is false.
isEnabled	A Boolean. True if this feature is enabled. Default is true.
name	A String. This is the name for the feature.
policyConstraint	A PolicyRef. Reference to manage a list of feature specification policy constraints.
@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.

FeatureRelationship sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
relationshipType	A String. This is the type of the feature relationship.
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. The actual type of the target instance when needed for disambiguation.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.

@type	A String. When sub-classing, this defines the sub-class Extensible name.
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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. Country codes are short alphabetic or numeric geographical codes (geocodes) developed to represent countries and dependent areas, for use in data processing and communications. Several different systems have been developed to do this. The term country code frequently refers to ISO 3166-1 alpha-2 or international dialing codes, the E.164 country calling codes.
externalIdentifier	An ExternalIdentifier.
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.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
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.
@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.

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

GeographicLocationRef sub-resource fields

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

GeographicSite sub-resource fields

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

place	A PlaceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Place entity and not the PlaceRefOrValue class itself.
relatedParty	A RelatedPartyRefOrPartyRoleRef.
siteRelationship	A GeographicSiteRelationship.
status	A String. The condition of the GeographicSite, such as planned, underConstruction, cancelled, active, inactive, former.
@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.

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.
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.
@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.

Intent sub-resource fields

attachment	An AttachmentRefOrValue. Attachments that may be of relevance to this intent, such as picture, document, media.
characteristic	A Characteristic.
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 list of intents related to this intent.
intentSpecification	An EntityRef.
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.
statusChangeDate	A DateTime. A date time(DateTime). The date that the entity status changed to the current one.
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

@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.
@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.

JsonLdExpression sub-resource fields

expressionValue	An object. JsonLdExpression is the ontology-encoded form of the Intent as JSON-LD as defined in https://www.w3.org/TR/json-ld/ should be validated against https://raw.githubusercontent.com/json-ld/json-ld.org/main/schemas/jsonld-schema.json .
@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.

Note sub-resource fields

author	A String. Author of the note.
date	A DateTime. Date of the note.
id	A String. Identifier of the note within its containing entity.
text	A String. Text of the note.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

PartyRef sub-resource fields

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

PartyRoleRef sub-resource fields

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

Place sub-resource fields

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

PolicyRef sub-resource fields

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

name	A String. Name of the referred entity.
version	A String.
@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.

RdfXmlExpression sub-resource fields

expressionValue	A String. RDF XML Expression value encoded object.
@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.

RelatedEntityRefOrValue sub-resource fields

entity	An EntityRefOrValue.
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.

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.

RelatedServiceOrderItem sub-resource fields

itemAction	An OrderItemActionType. Action to be performed on the product.
itemId	A String. Identifier of the order item where the service was managed.
role	A String. Role of the service order item for this service.
serviceOrderHref	A String. Reference of the related entity.
serviceOrderId	A String. Unique identifier of a 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.

ResourceRef sub-resource fields

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

Service sub-resource fields

category	A String. Is it a customer facing or resource facing service.
----------	---

description	A String. Free-text description of the service.
endDate	A DateTime. Date when the service ends.
externalIdentifier	An ExternalIdentifier. A list of external identifiers associated with this service.
feature	A Feature. A list of feature associated with this service.
hasStarted	A Boolean. If TRUE, this Service has already been started.
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 service is a ServiceBundle which regroup a service hierachy. If false, the service is a 'atomic' service (hierachy leaf).
isServiceEnabled	A Boolean. If FALSE and hasStarted is FALSE, this particular Service has NOT been enabled for use - if FALSE and hasStarted is TRUE then the service has failed.
isStateful	A Boolean. If TRUE, this Service can be changed without affecting any other services.
name	A String. Name of the service.
note	A Note. A list of notes made on this service.
operatingStatus	A ServiceOperatingStatusType. Valid values for the Operating status of the service.
place	A RelatedPlaceRefOrValue. A list of places (Place [*]). Used to define a place useful for the service (for example a geographical place whre the service is installed).
relatedEntity	A RelatedEntityRefOrValue. A list of related entities in relationship with this service.
relatedParty	A RelatedPartyRefOrPartyRoleRef. A list of related party references (RelatedParty [*]). A related party defines party or party role linked to a specific entity.
serviceCharacteristic	A Characteristic. A list of characteristics that characterize this service (ServiceCharacteristic [*]).
serviceDate	A String. Date when the service was created (whatever its status).
serviceOrderItem	A RelatedServiceOrderItem. A list of service order items related to this service.
serviceRelationship	A ServiceRelationship. A list of service relationships (ServiceRelationship [*]). Describes links with other service(s) in the inventory.
serviceSpecification	A ServiceSpecificationRef.
serviceType	A String. Business type of the service.
startDate	A DateTime. Date when the service starts.

startMode	A String. This attribute is an enumerated integer that indicates how the Service is started, such as: 0: Unknown; 1: Automatically by the managed environment; 2: Automatically by the owning device; 3: Manually by the Provider of the Service; 4: Manually by a Customer of the Provider; 5: Any of the above.
state	A ServiceStateType. Valid values for the lifecycle state of the service.
supportingResource	A ResourceRef. A list of supporting resources (SupportingResource [*]).Note: only Service of type RFS can be associated with Resources.
supportingService	A ServiceRefOrValue. A list of supporting services (SupportingService [*]). A collection of services that support this service (bundling, link CFS to RFS).
@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.

ServiceCategoryRef sub-resource fields

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

ServiceQualification sub-resource fields

description	A String. Description of the serviceQualification.
effectiveQualificationDate	A DateTime. Effective date to serviceQualification completion.
errorMessage	An ErrorMessage. A list of error message contains the error that caused the termination of ServiceQualification task.
estimatedResponseDate	A DateTime. Date when the requester expect to provide an answer for the qualification request.
expectedQualificationDate	A DateTime. A date (DateTime). Deadline date when the requester expected a qualification answer.

expirationDate	A DateTime. Date when the qualification response expires.
externalIdentifier	An ExternalIdentifier. A list of external identifiers associated with this resource.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
instantSyncQualification	A Boolean. An indicator which when the value is "true" means that requester expects to get qualification result immediately in the response. If the indicator is true then the response code of 200 indicates the operation is successful otherwise a task is created with a response 201.
relatedParty	A RelatedPartyRefOrPartyRoleRef. A list of related party references, defines party or party role linked to this request.
state	A TaskStateType. Possible values for the state of a task.
@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.

ServiceQualificationItem sub-resource fields

category	A ServiceCategoryRef.
expectedActivationDate	A DateTime. The date when the service is expected to be activated.
expectedServiceAvailabilityDate	A DateTime. Date when the requester looks for service availability.
expirationDate	A DateTime. Date when the qualification item response expires.
id	A String. Id of the Service Qualification Item.
service	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
@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.

ServiceQualificationItemRelationship sub-resource fields

relationshipType	A String. Type of relationship (ex: reliesOn, connectedTo, etc...).
------------------	---

ServiceQualificationRelationship sub-resource fields

relationshipType	A String. The type of relationship.
------------------	-------------------------------------

ServiceRef sub-resource fields

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

ServiceRelationship sub-resource fields

relationshipType	A String.
service	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
serviceRelationshipCharacteristic	A 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.

ServiceSpecificationRef sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
version	A String. Service specification version.
@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.

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.
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.

TurtleExpression sub-resource fields

expressionValue	A String. Turtle Expression value is the ontology-encoded form of the Intent as Turtle RDF as defined in https://www.w3.org/TR/turtle/ .
@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 'QueryServiceQualification' resource object.

```
{
  "id": "54",
  "href": "https://mycsp.com:8080/tmf-
  api/serviceQualificationManagement/v5/queryServiceQualification/54",
  "description": "Query Service Qualification Illustration - 2 serviceSpec available
  at this place for this category",
  "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
  "effectiveQualificationDate": "2023-04-13T13:51:41.218Z",
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
  "expectedQualificationDate": "2023-04-13T13:51:41.218Z",
  "expirationDate": "2023-04-15T13:51:41.218Z",
  "instantSyncQualification": true,
  "state": "done",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",

```

```

    "partyOrPartyRole": {
      "id": "456",
      "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
      "name": "Jean Pontus",
      "@type": "PartyRef",
      "referredType": "Individual"
    }
  ],
  "searchCriteria": {
    "id": "1",
    "category": {
      "id": "1",
      "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v5/category/1",
      "name": "Fiber Access",
      "@type": "ServiceCategoryRef",
      "@referredType": "Category"
    },
    "service": {
      "place": [
        {
          "@type": "RelatedPlaceRefOrValue",
          "role": "Installation place",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ],
      "@type": "Service"
    },
    "@type": "ServiceQualificationItem"
  },
  "serviceQualificationItem": [
    {
      "id": "1",
      "expirationDate": "2023-04-24T19:20:39.239Z",
      "service": {
        "serviceSpecification": {
          "id": "78",
          "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v5/serviceSpecification/78",
          "name": "X-Fiber Service",
          "@type": "ServiceSpecification"
        },
        "@type": "Service"
      },
      "@type": "ServiceQualificationItem"
    },
    {
      "id": "2",
      "expirationDate": "2023-04-24T19:20:39.239Z",
      "service": {
        "serviceSpecification": {
          "id": "87",
          "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v5/serviceSpecification/87",
          "name": "Standard Fiber Service",

```

```

        "@type": "ServiceSpecification"
    },
    "@type": "Service"
  },
  "@type": "ServiceQualificationItem"
}
],
"@type": "QueryServiceQualification"
}

```

CheckServiceQualification resource

Resource model

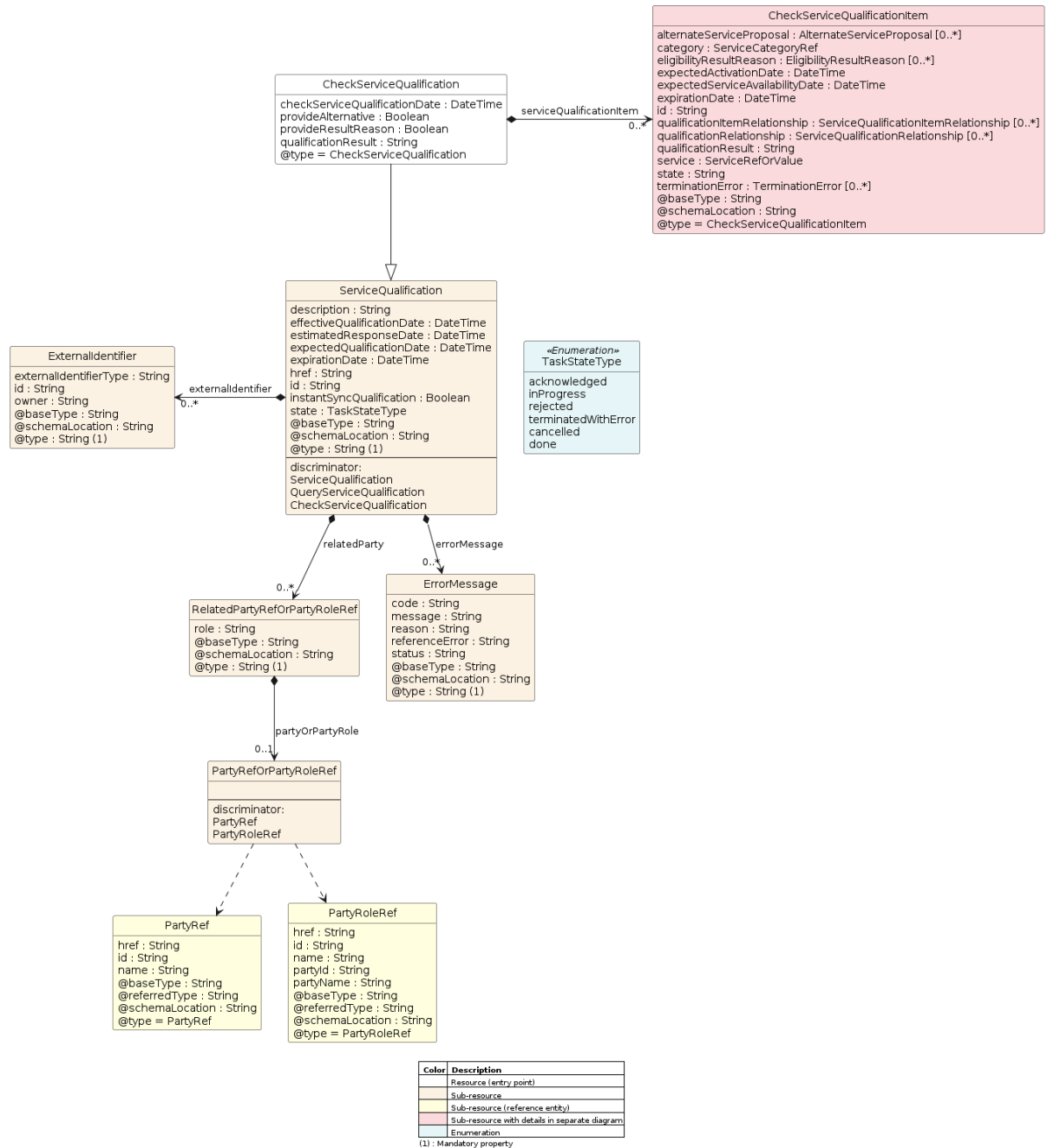


Figure 8 - CheckServiceQualification

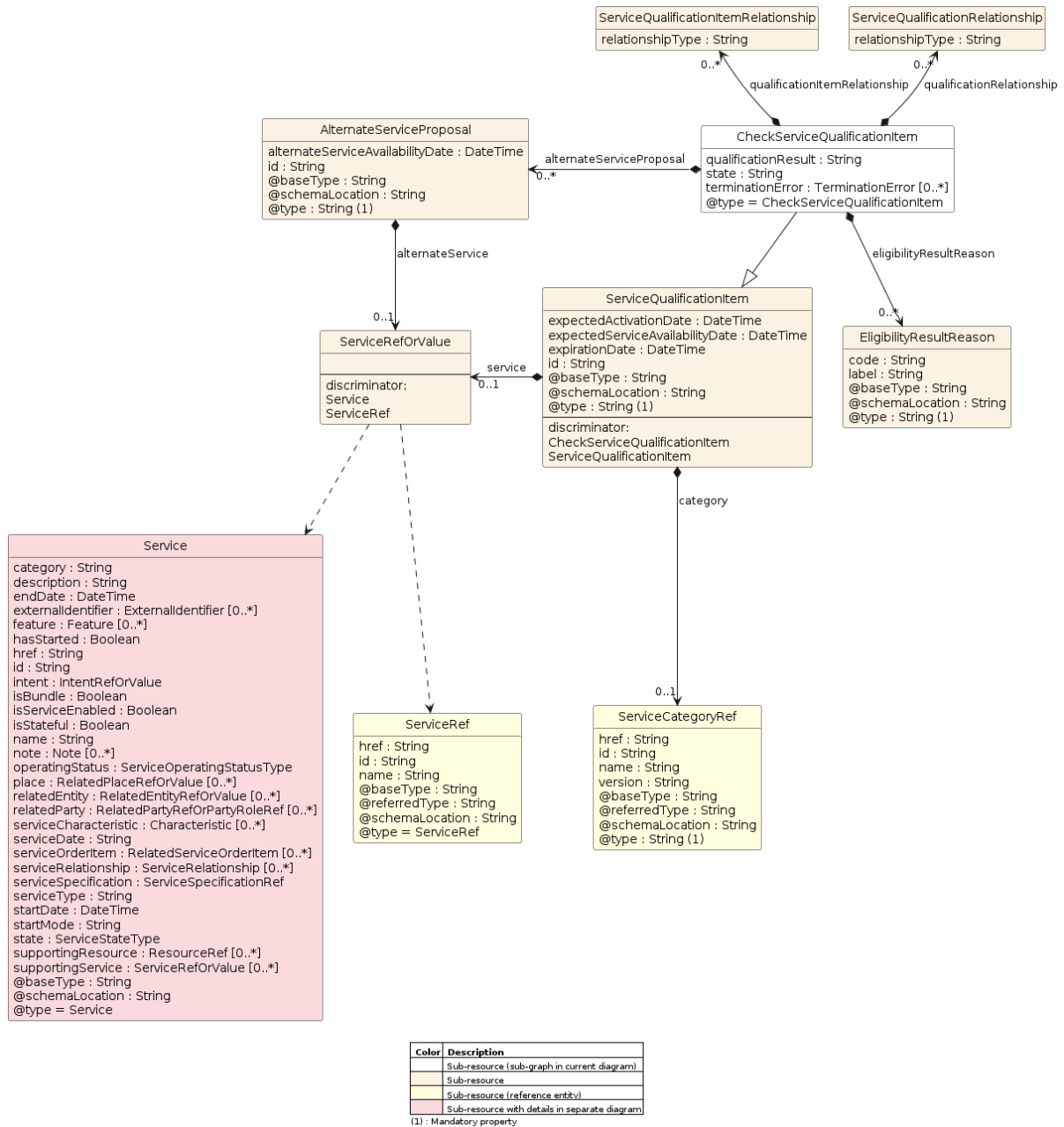
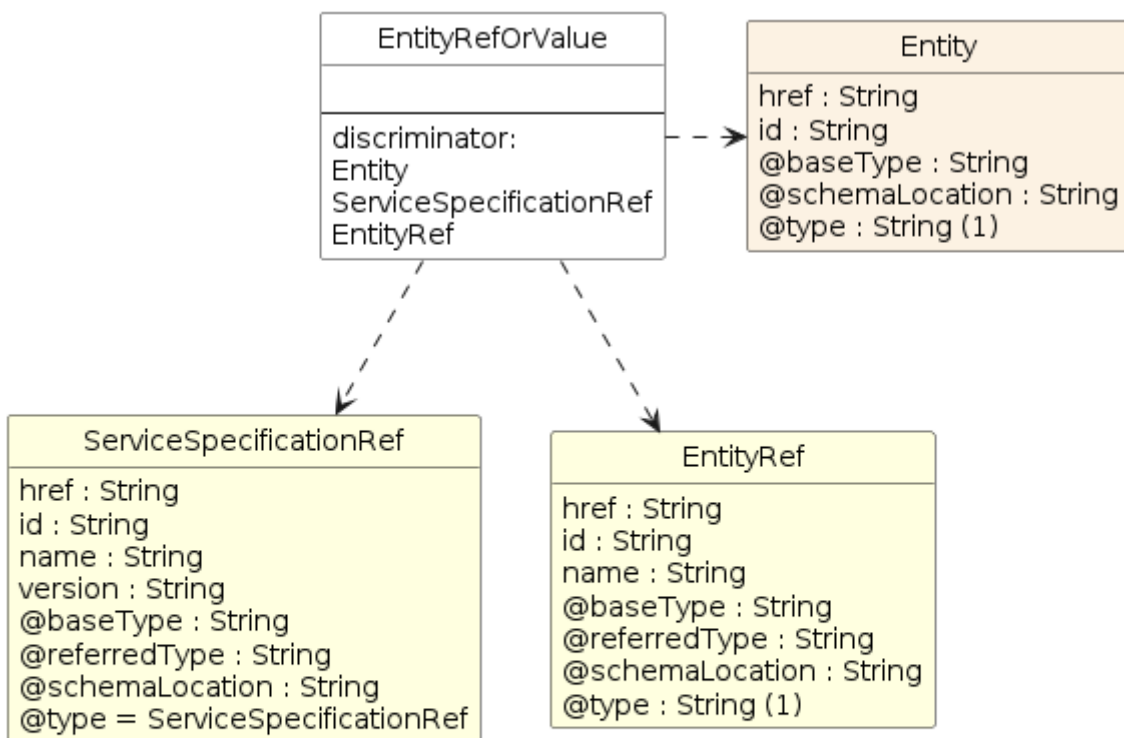


Figure 9 - CheckServiceQualificationItem



Color	Description
	Sub-resource (sub-graph in current diagram)
	Sub-resource
	Sub-resource (reference entity)

(1) : Mandatory property

Figure 10 - EntityRefOrValue

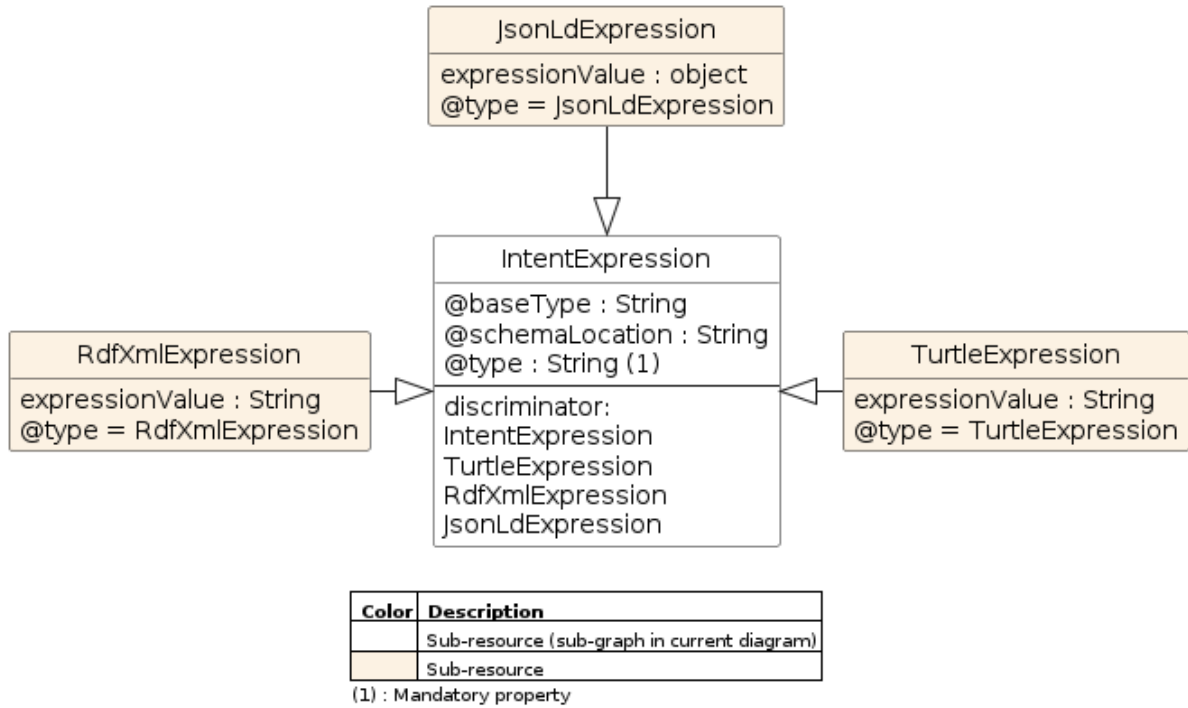


Figure 11 - IntentExpression

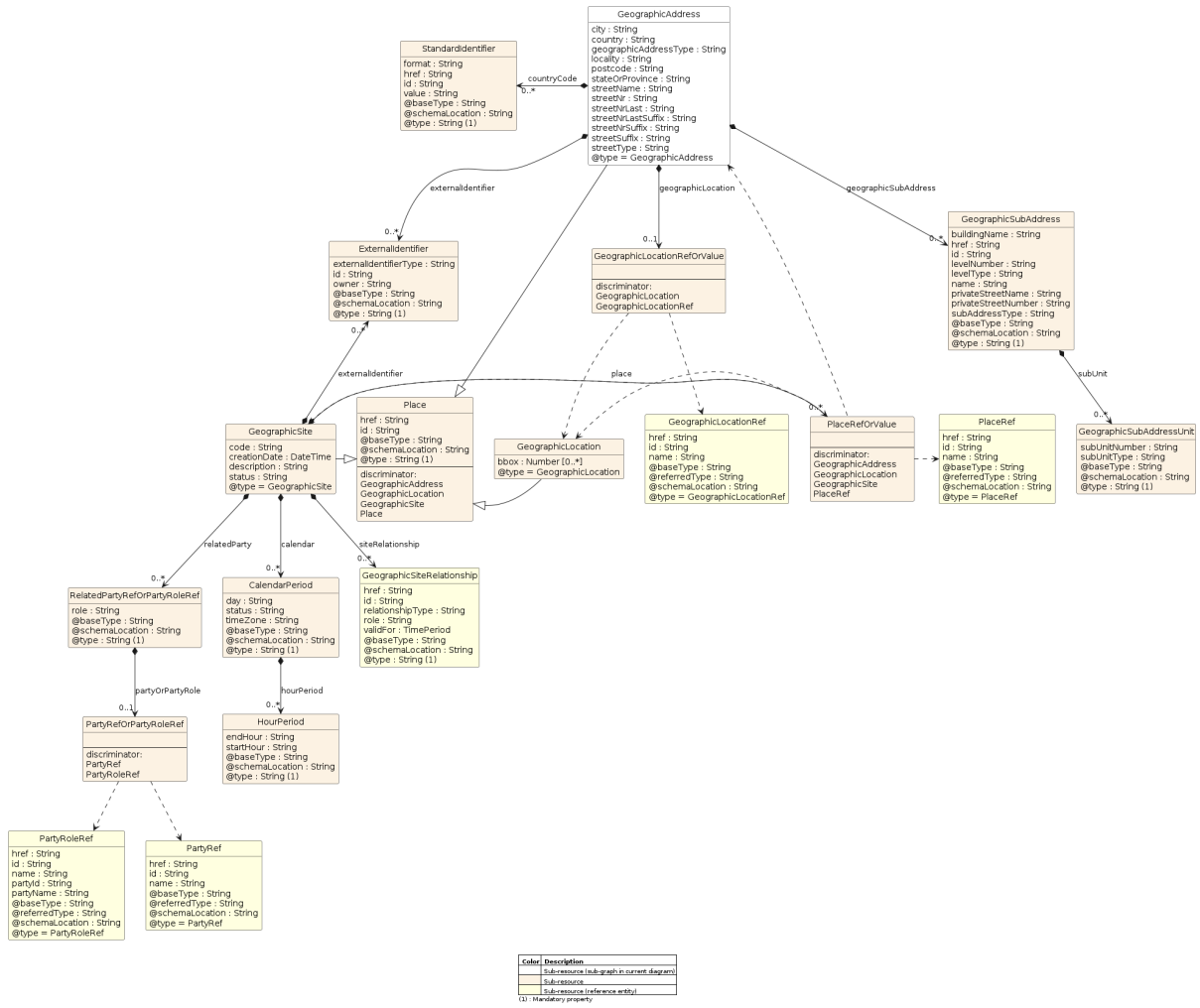


Figure 12 - GeographicAddress

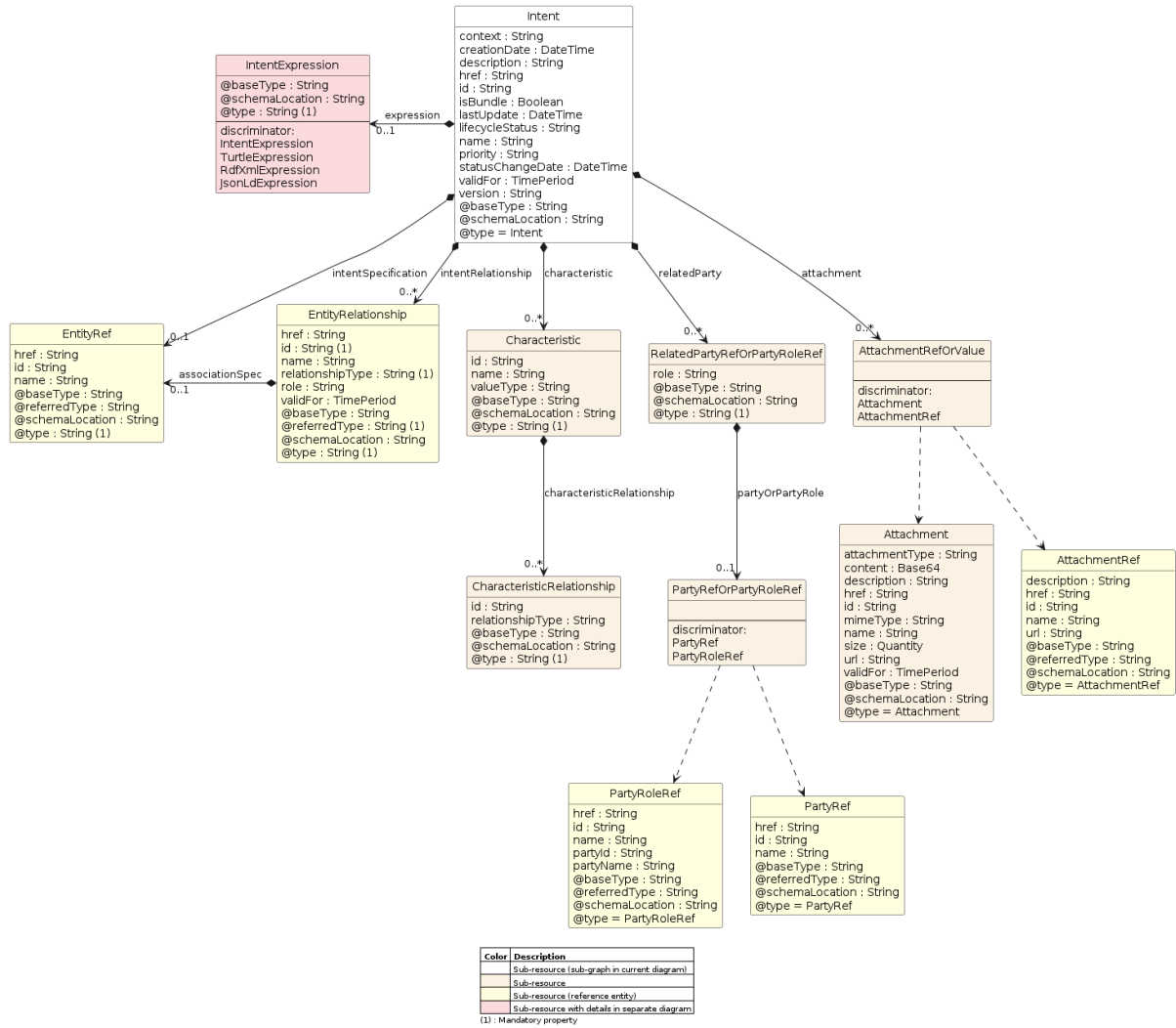


Figure 13 - Intent

provideAlternative	A Boolean. When the value is TRUE means that alternative solutions should be provided.
provideResultReason	A Boolean. When the value is TRUE means that result reason are expected for available or not of product offering.
qualificationResult	A String. Qualification result for this serviceQualification. It could be: qualified (all qualification item are qualified), alternate (At least one item alternate and no item with unqualified), unqualified (At least one item unqualified).
relatedParty	A RelatedPartyRefOrPartyRoleRef. A list of related party references, defines party or party role linked to this request.
serviceQualificationItem	A CheckServiceQualificationItem. A list of service qualification items.
state	A TaskStateType. Possible values for the state of a task.
@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.

AlternateServiceProposal sub-resource fields

alternateService	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
alternateServiceAvailabilityDate	A DateTime. Alternate availability date in case seller is not able to meet requested expected availability date for the service.
id	A String. Identifier of a alternate service proposal.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

Attachment sub-resource fields

attachmentType	A String. A business characterization of the purpose of the attachment, for example logo, instructionManual, contractCopy.
content	A Base64. The actual contents of the attachment object, if embedded, encoded as base64.
description	A String. A narrative text describing the content of the attachment.
href	A String. Hyperlink reference.
id	A String. Unique identifier.

contentType	A String. A technical characterization of the attachment content format using IETF Mime Types.
name	A String. The name of the attachment.
size	A Quantity. An amount in a given unit.
url	A String. Uniform Resource Locator, is a web page address (a subset of URI).
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

AttachmentRef sub-resource fields

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

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.
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.
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.

CheckServiceQualificationItem sub-resource fields

alternateServiceProposal	An AlternateServiceProposal. Alternate service proposal is used when the requested service is not available with characteristic and date asked for. An alternate proposal could be a distinct service Spec close to requested one or same as requested but with a different availability date.
category	A ServiceCategoryRef.
eligibilityResultReason	An EligibilityResultReason. A list of eligibility result reasons (EligibilityResultReason [*]). Reason for eligibility result, whatever the result is (availability or unavailability).
expectedActivationDate	A DateTime. The date when the service is expected to be activated.
expectedServiceAvailabilityDate	A DateTime. Date when the requester looks for service availability.
expirationDate	A DateTime. Date when the qualification item response expires.
id	A String. Id of the Service Qualification Item.

qualificationItemRelationship	A ServiceQualificationItemRelationship. A list of qualification item relationships used to describe relationship between serviceQualification item from the same serviceQualification.
qualificationRelationship	A ServiceQualificationRelationship. Structure used to describe relationship between serviceQualification item from the same serviceQualification.
qualificationResult	A String. Qualification result for serviceQualification item. It could be: - qualified (request service are available), - unqualified (requested not available and not alternate available), - alternate (requested not available but proposal available).
service	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
state	A String. State of the serviceQualification item (acknowledged, inProgress, terminatedWithError, done).
terminationError	A TerminationError. If qualificationItem has not been done properly this lists the error(s) that caused termination of the qualification.
@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.

EligibilityResultReason sub-resource fields

code	A String. Result reason code.
label	A String. Human readable result reason label.
@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.

Entity sub-resource fields

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

EntityRef sub-resource fields

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

EntityRelationship sub-resource fields

associationSpec	An EntityRef.
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.
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.

ErrorMessage sub-resource fields

code	A String. Error code.
message	A String. More details and corrective actions related to the error.
reason	A String. Explanation of the reason for the error.
referenceError	A String. URI of documentation describing the error.
status	A String. Error code extension like sys-ABC-2001.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

ExternalIdentifier sub-resource fields

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

Feature sub-resource fields

featureCharacteristic	A Characteristic. This is a list of Characteristics for a particular feature.
featureRelationship	A FeatureRelationship.
id	A String. Unique identifier.
isBundle	A Boolean. True if this is a feature group. Default is false.
isEnabled	A Boolean. True if this feature is enabled. Default is true.
name	A String. This is the name for the feature.
policyConstraint	A PolicyRef. Reference to manage a list of feature specification policy constraints.
@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.

FeatureRelationship sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
relationshipType	A String. This is the type of the feature relationship.
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. 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.

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. Country codes are short alphabetic or numeric geographical codes (geocodes) developed to represent countries and dependent areas, for use in data processing and communications. Several different systems have been developed to do this. The term country code frequently refers to ISO 3166-1 alpha-2 or international dialing codes, the E.164 country calling codes.
externalIdentifier	An ExternalIdentifier.
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.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
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.
@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.

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

GeographicLocationRef sub-resource fields

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

GeographicSite sub-resource fields

calendar	A CalendarPeriod.
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.

href	A String. Hyperlink reference.
id	A String. Unique identifier.
place	A PlaceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Place entity and not the PlaceRefOrValue class itself.
relatedParty	A RelatedPartyRefOrPartyRoleRef.
siteRelationship	A GeographicSiteRelationship.
status	A String. The condition of the GeographicSite, such as planned, underConstruction, cancelled, active, inactive, former.
@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.

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.
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.
@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.

Intent sub-resource fields

attachment	An AttachmentRefOrValue. Attachments that may be of relevance to this intent, such as picture, document, media.
characteristic	A Characteristic.
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 list of intents related to this intent.
intentSpecification	An EntityRef.
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.
statusChangeDate	A DateTime. A date time(DateTime). The date that the entity status changed to the current one.
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

@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.
@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.

JsonLdExpression sub-resource fields

expressionValue	An object. JsonLdExpression is the ontology-encoded form of the Intent as JSON-LD as defined in https://www.w3.org/TR/json-ld/ should be validated against https://raw.githubusercontent.com/json-ld/json-ld.org/main/schemas/jsonld-schema.json .
@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.

Note sub-resource fields

author	A String. Author of the note.
date	A DateTime. Date of the note.
id	A String. Identifier of the note within its containing entity.
text	A String. Text of the note.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.

PartyRef sub-resource fields

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

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

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

Place sub-resource fields

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

PolicyRef sub-resource fields

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

RdfXmlExpression sub-resource fields

expressionValue	A String. RDF XML Expression value encoded object.
@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.

RelatedEntityRefOrValue sub-resource fields

entity	An EntityRefOrValue.
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.

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.
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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.

RelatedServiceOrderItem sub-resource fields

itemAction	An OrderItemActionType. Action to be performed on the product.
itemId	A String. Identifier of the order item where the service was managed.
role	A String. Role of the service order item for this service.
serviceOrderHref	A String. Reference of the related entity.
serviceOrderId	A String. Unique identifier of a 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.

ResourceRef sub-resource fields

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

Service sub-resource fields

category	A String. Is it a customer facing or resource facing service.
description	A String. Free-text description of the service.
endDate	A DateTime. Date when the service ends.
externalIdentifier	An ExternalIdentifier. A list of external identifiers associated with this service.
feature	A Feature. A list of feature associated with this service.
hasStarted	A Boolean. If TRUE, this Service has already been started.
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 service is a ServiceBundle which regroup a service hierachy. If false, the service is a 'atomic' service (hierachy leaf).
isServiceEnabled	A Boolean. If FALSE and hasStarted is FALSE, this particular Service has NOT been enabled for use - if FALSE and hasStarted is TRUE then the service has failed.
isStateful	A Boolean. If TRUE, this Service can be changed without affecting any other services.
name	A String. Name of the service.
note	A Note. A list of notes made on this service.
operatingStatus	A ServiceOperatingStatusType. Valid values for the Operating status of the service.
place	A RelatedPlaceRefOrValue. A list of places (Place [*]). Used to define a place useful for the service (for example a geographical place whre the service is installed).
relatedEntity	A RelatedEntityRefOrValue. A list of related entities in relationship with this service.
relatedParty	A RelatedPartyRefOrPartyRoleRef. A list of related party references (RelatedParty [*]). A related party defines party or party role linked to a specific entity.
serviceCharacteristic	A Characteristic. A list of characteristics that characterize this service (ServiceCharacteristic [*]).
serviceDate	A String. Date when the service was created (whatever its status).
serviceOrderItem	A RelatedServiceOrderItem. A list of service order items related to this service.
serviceRelationship	A ServiceRelationship. A list of service relationships (ServiceRelationship [*]). Describes links with other service(s) in the inventory.

serviceSpecification	A ServiceSpecificationRef.
serviceType	A String. Business type of the service.
startDate	A DateTime. Date when the service starts.
startMode	A String. This attribute is an enumerated integer that indicates how the Service is started, such as: 0: Unknown; 1: Automatically by the managed environment; 2: Automatically by the owning device; 3: Manually by the Provider of the Service; 4: Manually by a Customer of the Provider; 5: Any of the above.
state	A ServiceStateType. Valid values for the lifecycle state of the service.
supportingResource	A ResourceRef. A list of supporting resources (SupportingResource [*]).Note: only Service of type RFS can be associated with Resources.
supportingService	A ServiceRefOrValue. A list of supporting services (SupportingService [*]). A collection of services that support this service (bundling, link CFS to RFS).
@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.

ServiceCategoryRef sub-resource fields

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

ServiceQualification sub-resource fields

description	A String. Description of the serviceQualification.
effectiveQualificationDate	A DateTime. Effective date to serviceQualification completion.
errorMessage	An ErrorMessage. A list of error message contains the error that caused the termination of ServiceQualification task.

estimatedResponseDate	A DateTime. Date when the requester expect to provide an answer for the qualification request.
expectedQualificationDate	A DateTime. A date (DateTime). Deadline date when the requester expected a qualification answer.
expirationDate	A DateTime. Date when the qualification response expires.
externalIdentifier	An ExternalIdentifier. A list of external identifiers associated with this resource.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
instantSyncQualification	A Boolean. An indicator which when the value is "true" means that requester expects to get qualification result immediately in the response. If the indicator is true then the response code of 200 indicates the operation is successful otherwise a task is created with a response 201.
relatedParty	A RelatedPartyRefOrPartyRoleRef. A list of related party references, defines party or party role linked to this request.
state	A TaskStateType. Possible values for the state of a task.
@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.

ServiceQualificationItem sub-resource fields

category	A ServiceCategoryRef.
expectedActivationDate	A DateTime. The date when the service is expected to be activated.
expectedServiceAvailabilityDate	A DateTime. Date when the requester looks for service availability.
expirationDate	A DateTime. Date when the qualification item response expires.
id	A String. Id of the Service Qualification Item.
service	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
@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.

ServiceQualificationItemRelationship sub-resource fields

relationshipType	A String. Type of relationship (ex: reliesOn, connectedTo, etc...).
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ServiceQualificationRelationship sub-resource fields

relationshipType	A String. The type of relationship.
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ServiceRef sub-resource fields

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

ServiceRelationship sub-resource fields

relationshipType	A String.
service	A ServiceRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Service entity and not the ServiceRefOrValue class itself.
serviceRelationshipCharacteristic	A 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.

ServiceSpecificationRef sub-resource fields

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

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

TurtleExpression sub-resource fields

expressionValue	A String. Turtle Expression value is the ontology-encoded form of the Intent as Turtle RDF as defined in https://www.w3.org/TR/turtle/ .
@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 'CheckServiceQualification' resource object.

```
{
  "id": "456",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/456",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "effectiveQualificationDate": "2023-04-11T15:20:39.239Z",
  "estimatedResponseDate": "2023-04-11T15:20:39.239Z",
  "expectedQualificationDate": "2023-04-11T15:20:39.239Z",
  "expirationDate": "2023-04-24T19:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
}
```

```

"provideAlternative": true,
"provideResultReason": true,
"instantSyncQualification": false,
"qualificationResult": "alternate",
"relatedParty": [
  {
    "role": "Buyer contact",
    "@type": "RelatedPartyOrPartyRole",
    "partyOrPartyRole": {
      "id": "456",
      "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
      "name": "Jean Pontus",
      "@type": "PartyRef",
      "referredType": "Individual"
    }
  }
],
"serviceQualificationItem": [
  {
    "id": "1",
    "expectedActivationDate": "2023-04-16T19:20:39.239Z",
    "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
    "expirationDate": "2023-04-24T19:20:39.239Z",
    "qualificationResult": "alternate",
    "state": "done",
    "alternateServiceProposal": [
      {
        "id": "1",
        "alternateServiceAvailabilityDate": "2023-04-15T19:20:39.239Z",
        "alternateService": {
          "serviceCharacteristic": [
            {
              "id": "1",
              "name": "BroadcastQuality",
              "valueType": "string",
              "value": "HD",
              "@type": "StringCharacteristic"
            }
          ],
          "serviceSpecification": {
            "id": "23",
            "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v5/serviceSpecification/23",
            "name": "TVAccess",
            "@type": "ServiceSpecification"
          },
          "@type": "Service"
        },
        "@type": "AlternateServiceProposal"
      }
    ],
    "eligibilityResultReason": [
      {
        "code": "26-001",
        "label": "not enough bandwidth at this place",
        "@type": "ServiceEligibilityResultReason"
      }
    ],
    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",

```

```

    "place": {
      "@type": "PlaceRef",
      "@referredType": "GeographicSite",
      "id": "11",
      "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
      "name": "Jean Pontus home"
    }
  ],
  "serviceCharacteristic": [
    {
      "id": "1",
      "name": "BroadcastQuality",
      "valueType": "string",
      "value": "4K",
      "@type": "StringCharacteristic"
    }
  ],
  "serviceSpecification": {
    "id": "23",
    "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
    "name": "TVAccess",
    "@type": "ServiceSpecification"
  },
  "@type": "Service"
},
"@type": "CheckServiceQualificationItem"
}
],
"state": "done",
"@type": "CheckServiceQualification"
}

```

Notification Resource Models

8 notifications are defined for this API.

Notifications related to QueryServiceQualification:

- Query Service Qualification Create Event
- Query Service Qualification Delete Event
- Query Service Qualification State Change Event

Notifications related to CheckServiceQualification:

- Check Service Qualification Delete Event
- Check Service Qualification State Change Event
- Check Service Qualification Create Event
- Check Service Qualification Information Required Event
- Check Service Qualification Attribute Value 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 subclass 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).

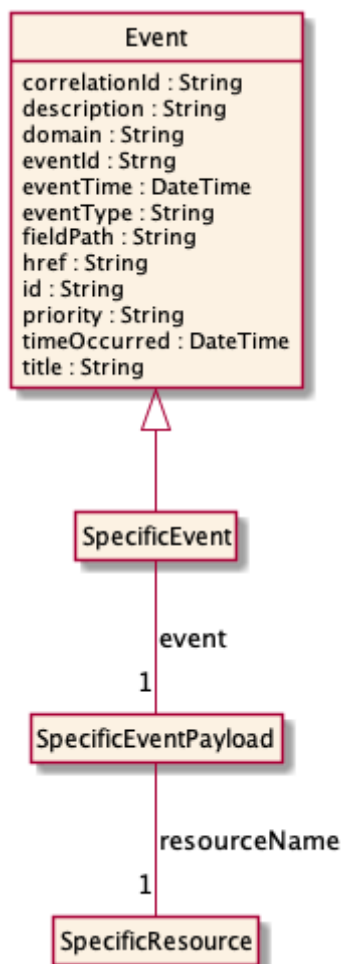


Figure 15 Notification Pattern

Query Service Qualification Create Event

Message example for QueryServiceQualificationCreateEvent event

```

Content-Type: application/json

{
  "correlationId": "b122fa39-7242",
  "description": "QueryServiceQualificationCreateEvent illustration",
  "domain": "Commercial",
  "eventId": "4d6e-98cf-a085d0121f61",
  "eventTime": "2022-08-25T12:20:45.491Z",
  "eventType": "QueryServiceQualificationCreateEvent",
  "priority": "5",
  "timeOccurred": "2022-08-25T12:20:44.232Z",
  "title": "QueryServiceQualificationCreateEvent",
}
  
```

```

"event": {
  "queryServiceQualification": {
    "id": "54",
    "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/queryServiceQualification/54",
    "description": "Query Service Qualification Illustration - 2 serviceSpec
available at this place for this category",
    "effectiveQualificationDate": "2020-04-13T13:51:41.218Z",
    "estimatedResponseDate": "2020-04-13T14:00:00.218Z",
    "expectedQualificationDate": "2020-04-13T13:51:41.218Z",
    "expirationDate": "2020-04-15T13:51:41.218Z",
    "externalIdentifier": [
      {
        "id": "CSQ1",
        "@type": "ExternalIdentifier"
      }
    ],
    "instantSyncQualification": true,
    "queryServiceQualificationDate": "2020-04-13T13:51:41.218Z",
    "relatedParty": [
      {
        "role": "Buyer contact",
        "@type": "RelatedPartyOrPartyRole",
        "partyOrPartyRole": {
          "id": "456",
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/456",
          "name": "Jean Pontus",
          "@type": "PartyRef",
          "referredType": "Individual"
        }
      }
    ],
    "searchCriteria": {
      "id": "1",
      "category": {
        "id": "1",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/category/1",
        "name": "Fiber Access",
        "@type": "ServiceCategoryRef",
        "@referredType": "Category"
      },
      "service": {
        "place": [
          {
            "@type": "RelatedPlaceRefOrValue",
            "role": "Installation place",
            "place": {
              "@type": "PlaceRef",
              "@referredType": "GeographicSite",
              "id": "11",
              "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
              "name": "Jean Pontus home"
            }
          }
        ],
        "@type": "Service"
      },
      "@type": "ServiceQualificationItem"
    },
    "serviceQualificationItem": [

```

```

    {
      "id": "1",
      "expirationDate": "2023-04-24T19:20:39.239Z",
      "service": {
        "serviceSpecification": {
          "id": "78",
          "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/78",
          "name": "X-Fiber Service",
          "@type": "ServiceSpecification"
        },
        "@type": "Service"
      },
      "@type": "ServiceQualificationItem"
    },
    {
      "id": "2",
      "expirationDate": "2023-04-24T19:20:39.239Z",
      "service": {
        "serviceSpecification": {
          "id": "87",
          "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/87",
          "name": "Standard Fiber Service",
          "@type": "ServiceSpecification"
        },
        "@type": "Service"
      },
      "@type": "ServiceQualificationItem"
    }
  ],
  "state": "done",
  "@type": "QueryServiceQualification"
}
},
"reportingSystem": {
  "id": "768",
  "name": "APP-897",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"source": {
  "id": "276",
  "name": "APP-819",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"@baseType": "Event",
"@type": "QueryServiceQualificationCreateEvent"
}

```

Query Service Qualification Delete Event

Message example for QueryServiceQualificationDeleteEvent event

```

Content-Type: application/json

{
  "correlationId": "4afc7d04-5251",
  "description": "QueryServiceQualificationDeleteEvent illustration",

```

```

"domain": "Commercial",
"eventId": "4212-968d-a8fe5f08aa16",
"eventTime": "2022-08-25T12:20:45.513Z",
"eventType": "QueryServiceQualificationDeleteEvent",
"priority": "2",
"timeOccurred": "2022-08-25T12:20:36.791Z",
"title": "QueryServiceQualificationDeleteEvent",
"event": {
  "queryServiceQualification": {
    "id": "54",
    "href":
"http://serverlocation:port/serviceQualificationManagement/v5/queryServiceQualificat
ion/54",
    "@type": "QueryServiceQualification"
  }
},
"reportingSystem": {
  "id": "768",
  "name": "APP-897",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"source": {
  "id": "276",
  "name": "APP-819",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"@baseType": "Event",
"@type": "QueryServiceQualificationDeleteEvent"
}

```

Query Service Qualification State Change Event

Message example for QueryServiceQualificationStateChangeEvent event

```

Content-Type: application/json

{
  "correlationId": "95e2f5d5-e67f",
  "description": "QueryServiceQualificationStateChangeEvent illustration",
  "domain": "Commercial",
  "eventId": "4011-abcl-8a9dfc8ff694",
  "eventTime": "2022-08-25T12:20:45.501Z",
  "eventType": "QueryServiceQualificationStateChangeEvent",
  "priority": "5",
  "timeOccurred": "2022-08-25T12:20:40.538Z",
  "title": "QueryServiceQualificationStateChangeEvent",
  "event": {
    "queryServiceQualification": {
      "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/queryServiceQualification/54",
      "id": "54",
      "@type": "QueryServiceQualification",
      "state": "done"
    }
  },
  "reportingSystem": {
    "id": "768",
    "name": "APP-897",

```

```

    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "276",
    "name": "APP-819",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "QueryServiceQualificationStateChangeEvent"
}

```

Check Service Qualification Delete Event

Message example for CheckServiceQualificationDeleteEvent event

```

Content-Type: application/json

{
  "correlationId": "b3727ad0-1140",
  "description": "CheckServiceQualificationDeleteEvent illustration",
  "domain": "Commercial",
  "eventId": "4c58-840e-790e0657230f",
  "eventTime": "2023-03-05T12:41:51.932Z",
  "eventType": "CheckServiceQualificationDeleteEvent",
  "priority": "4",
  "timeOccurred": "2023-03-05T12:41:46.084Z",
  "title": "CheckServiceQualificationDeleteEvent",
  "event": {
    "checkServiceQualification": {
      "id": "44",
      "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
      "@type": "CheckServiceQualification"
    }
  },
  "reportingSystem": {
    "id": "954",
    "name": "APP-190",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "441",
    "name": "APP-643",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "CheckServiceQualificationDeleteEvent"
}

```

Check Service Qualification State Change Event

Message example for CheckServiceQualificationStateChangeEvent event with ?fields=state property only

```

Content-Type: application/json

{
  "correlationId": "a19c7353-eae1",
  "description": "CheckServiceQualificationStateChangeEvent illustration",
  "domain": "Commercial",
  "eventId": "45a4-81bb-85fa6cc903c8",
  "eventTime": "2023-03-05T12:41:51.931Z",
  "eventType": "CheckServiceQualificationStateChangeEvent",
  "priority": "5",
  "timeOccurred": "2023-03-05T12:41:44.375Z",
  "title": "CheckServiceQualificationStateChangeEvent",
  "event": {
    "checkServiceQualification": {
      "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
      "id": "44",
      "@type": "CheckServiceQualification",
      "state": "done"
    }
  },
  "reportingSystem": {
    "id": "954",
    "name": "APP-190",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "441",
    "name": "APP-643",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "CheckServiceQualificationStateChangeEvent"
}

```

Check Service Qualification Create Event

Message example for CheckServiceQualificationCreateEvent event

```

Content-Type: application/json

{
  "correlationId": "901e0ff8-b717",
  "description": "CheckServiceQualificationCreateEvent illustration",
  "domain": "Commercial",
  "eventId": "439e-8ffd-25b84f13b3df",
  "eventTime": "2023-03-05T12:41:51.931Z",
  "eventType": "CheckServiceQualificationCreateEvent",
  "priority": "2",
  "timeOccurred": "2023-03-05T12:41:49.125Z",
  "title": "CheckServiceQualificationCreateEvent",
  "event": {
    "checkServiceQualification": {
      "id": "44",
      "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
      "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",

```

```

"description": "check service qualification illustration",
"effectiveQualificationDate": "2023-04-11T15:20:39.239Z",
"estimatedResponseDate": "2023-04-11T15:20:39.239Z",
"expectedQualificationDate": "2023-04-11T15:20:39.239Z",
"expirationDate": "2023-04-24T19:20:39.239Z",
"externalIdentifier": [
  {
    "id": "CSQ1",
    "@type": "ExternalIdentifier"
  }
],
"provideAlternative": true,
"provideResultReason": true,
"instantSyncQualification": false,
"qualificationResult": "alternate",
"relatedParty": [
  {
    "role": "Buyer contact",
    "@type": "RelatedPartyOrPartyRole",
    "partyOrPartyRole": {
      "id": "456",
      "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/456",
      "name": "Jean Pontus",
      "@type": "PartyRef",
      "referredType": "Individual"
    }
  }
],
"serviceQualificationItem": [
  {
    "id": "1",
    "expectedActivationDate": "2023-04-16T19:20:39.239Z",
    "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
    "expirationDate": "2023-04-24T19:20:39.239Z",
    "qualificationResult": "alternate",
    "state": "done",
    "alternateServiceProposal": [
      {
        "id": "1",
        "alternateServiceAvailabilityDate": "2023-04-15T19:20:39.239Z",
        "alternateService": {
          "serviceCharacteristic": [
            {
              "id": "1",
              "name": "BroadcastQuality",
              "valueType": "string",
              "value": "HD",
              "@type": "StringCharacteristic"
            }
          ],
          "serviceSpecification": {
            "id": "23",
            "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
            "name": "TVAccess",
            "@type": "ServiceSpecification"
          },
          "@type": "Service"
        },
        "@type": "AlternateServiceProposal"
      }
    ]
  }
],

```

```

    "eligibilityResultReason": [
      {
        "code": "26-001",
        "label": "not enough bandwidth at this place",
        "@type": "ServiceEligibilityResultReason"
      }
    ],
    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ],
      "serviceCharacteristic": [
        {
          "@type": "StringCharacteristic",
          "id": "1",
          "name": "BroadcastQuality",
          "valueType": "string",
          "value": "4K"
        }
      ],
      "serviceSpecification": {
        "id": "23",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
        "name": "TVAccess",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "ServiceQualificationItem"
  }
],
"state": "done",
"@type": "CheckServiceQualification"
}
},
"reportingSystem": {
  "id": "954",
  "name": "APP-190",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"source": {
  "id": "441",
  "name": "APP-643",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"@baseType": "Event",
"@type": "CheckServiceQualificationCreateEvent"
}

```


Check Service Qualification Information Required Event

Message example for CheckServiceQualificationInformationRequiredEvent event

```
Content-Type: application/json

{
  "correlationId": "d4c8651f-3939",
  "description": "CheckServiceQualificationInformationRequiredEvent illustration",
  "domain": "Commercial",
  "eventId": "45bd-a19f-814d80a49d5e",
  "eventTime": "2023-08-25T12:20:45.475Z",
  "eventType": "CheckServiceQualificationInformationRequiredEvent",
  "priority": "4",
  "timeOccurred": "2023-08-25T12:20:40.050Z",
  "title": "CheckServiceQualificationInformationRequiredEvent",
  "event": {
    "checkServiceQualification": {
      "id": "44",
      "href":
"http://serverlocation:port/serviceQualificationManagement/v5/checkServiceQualificat
ion/44",
      "@type": "CheckServiceQualification"
    },
    "informationRequired": {
      "informationRequiredPath": [
        {
          "op": "add",
          "path": "expectedQualificationDate"
        }
      ]
    }
  },
  "reportingSystem": {
    "id": "768",
    "name": "APP-897",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "276",
    "name": "APP-819",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "CheckServiceQualificationInformationRequiredEvent"
}
```

Check Service Qualification Attribute Value Change Event

Message example for CheckServiceQualificationAttributeValueChangeEvent event

```
Content-Type: application/json

{
  "correlationId": "e7e44c9a-64f5",
  "description": "CheckServiceQualificationAttributeValueChangeEvent illustration",
```

```
"domain": "Commercial",
"eventId": "483f-800d-f34613c8d3e2",
"eventTime": "2023-08-25T12:20:45.443Z",
"eventType": "CheckServiceQualificationAttributeValueChangeEvent",
"priority": "1",
"timeOccurred": "2023-08-25T12:20:42.512Z",
"title": "CheckServiceQualificationAttributeValueChangeEvent",
"event": {
  "checkServiceQualification": {
    "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
    "id": "44",
    "@type": "CheckServiceQualification",
    "relatedParty": [
      {
        "role": "Buyer contact",
        "@type": "RelatedPartyOrPartyRole",
        "partyOrPartyRole": {
          "id": "456",
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/456",
          "name": "Ross",
          "@type": "PartyRef",
          "referredType": "Individual"
        }
      }
    ]
  }
},
"reportingSystem": {
  "id": "768",
  "name": "APP-897",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"source": {
  "id": "276",
  "name": "APP-819",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"@baseType": "Event",
"@type": "CheckServiceQualificationAttributeValueChangeEvent"
}
```

API OPERATIONS

Remember the following Uniform Contract:

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

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

Notifications are also described in a subsequent section.

Operations on QueryServiceQualification

List or find QueryServiceQualification objects

GET /queryServiceQualification?fields=...

Description

This operation list QueryServiceQualification 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

Here's an example of a request for retrieving a list of query service qualification request(s). The given criteria is the query service qualification state (done).

Request

```
GET /queryServiceQualification?state=done
Content-Type: application/json
```

Response

200

```
[
  {
    "id": "54",
    "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/queryServiceQualification/54",
    "description": "Query Service Qualification Illustration - 2 serviceSpec
available at this place for this category",
    "effectiveQualificationDate": "2023-04-13T13:51:41.218Z",
    "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
    "expectedQualificationDate": "2023-04-13T13:51:41.218Z",
    "expirationDate": "2023-04-15T13:51:41.218Z",
    "externalIdentifier": [
      {
        "id": "CSQ1",
        "@type": "ExternalIdentifier"
      }
    ],
    "instantSyncQualification": true,
    "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
    "relatedParty": [
      {
        "role": "Buyer contact",
        "@type": "RelatedPartyOrPartyRole",
        "partyOrPartyRole": {
          "@type": "PartyRef",
          "id": "456",
          "href": "http://serverlocation:port/partyManagement/v5/individual/456",
          "name": "Jean Pontus",
          "referredType": "Individual"
        }
      }
    ],
    "searchCriteria": {
      "id": "1",
      "category": {
        "id": "1",
        "href": "http://serverlocation:port/serviceCatalogManagement/v5/category/1",
        "name": "Fiber Access",
        "@type": "Category"
      },
      "service": {
        "place": [
          {
            "@type": "RelatedPlaceRefOrValue",
            "role": "Installation place",
            "place": {
              "@type": "PlaceRef",
              "@referredType": "GeographicSite",
              "id": "11",
              "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
              "name": "Jean Pontus home"
            }
          }
        ],
        "@type": "Service"
      },
      "@type": "SearchCriteria"
    },
    "serviceQualificationItem": [

```

```
{
  "id": "1",
  "service": {
    "serviceSpecification": {
      "id": "78",
      "href":
"http://serverlocation:port/serviceCatalogManagement/v5/serviceSpecification/78",
      "name": "X-Fiber Service",
      "@type": "ServiceSpecification"
    },
    "@type": "Service"
  },
  "@type": "ServiceQualificationItem"
},
{
  "id": "2",
  "service": {
    "serviceSpecification": {
      "id": "87",
      "href":
"http://serverlocation:port/serviceCatalogManagement/v5/serviceSpecification/87",
      "name": "Standard Fiber Service",
      "@type": "ServiceSpecification"
    },
    "@type": "Service"
  },
  "@type": "ServiceQualificationItem"
}
],
"state": "done",
"@type": "QueryServiceQualification"
}
]
```

Here's an example of a request for retrieving a list of query service qualification request(s) with fields selection for id, effectiveQualificationDate & expirationDate

Request

```
GET
/queryServiceQualification?fields=id,effectiveQualificationDate,expirationDate&state=done
Content-Type: application/json
```

Response

```
200
[
  {
    "id": "48",
    "effectiveQualificationDate": "2023-04-11T14:23:33.239Z",
    "expirationDate": "2023-05-11T14:23:33.239Z",
    "@type": "QueryServiceQualification"
  },
  {
    "id": "44",
```

```

    "effectiveQualificationDate": "2023-04-12T14:23:33.239Z",
    "expirationDate": "2023-05-11T14:23:33.239Z",
    "@type": "QueryServiceQualification"
  }
]

```

Retrieves a QueryServiceQualification by ID

GET /queryServiceQualification/{id}?fields=...

Description

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

Usage samples

Here's an example of a query service qualification request retrieval. The given criteria is the query service qualification for id 54.

Request

```

GET /queryServiceQualification/54
Content-Type: application/json

```

Response

```

200

{
  "id": "54",
  "href": "https://mycsp.com:8080/tmf-api/serviceQualificationManagement/v5/queryServiceQualification/54",
  "description": "Query Service Qualification Illustration - 2 serviceSpec available at this place for this category",
  "effectiveQualificationDate": "2020-04-13T13:51:41.218Z",
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
  "expectedQualificationDate": "2023-04-13T13:51:41.218Z",
  "expirationDate": "2023-04-15T13:51:41.218Z",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "instantSyncQualification": true,
  "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",

```

```

    "href": "http://serverlocation:port/partyManagement/v5/individual/456",
    "name": "Jean Pontus",
    "referredType": "Individual"
  }
},
"searchCriteria": {
  "id": "1",
  "category": {
    "id": "1",
    "href": "http://serverlocation:port/serviceCatalogManagement/v5/category/1",
    "name": "Fiber Access",
    "@type": "Category"
  },
  "service": {
    "place": [
      {
        "@type": "RelatedPlaceRefOrValue",
        "role": "Installation place",
        "place": {
          "@type": "PlaceRef",
          "@referredType": "GeographicSite",
          "id": "11",
          "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
          "name": "Jean Pontus home"
        }
      }
    ],
    "@type": "Service"
  },
  "@type": "SearchCriteria"
},
"serviceQualificationItem": [
  {
    "id": "1",
    "service": {
      "serviceSpecification": {
        "id": "78",
        "href":
"http://serverlocation:port/serviceCatalogManagement/v5/serviceSpecification/78",
        "name": "X-Fiber Service",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "ServiceQualificationItem"
  },
  {
    "id": "2",
    "service": {
      "serviceSpecification": {
        "id": "87",
        "href":
"http://serverlocation:port/serviceCatalogManagement/v5/serviceSpecification/87",
        "name": "Standard Fiber Service",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "ServiceQualificationItem"
  }
],

```

```

"state": "done",
"@type": "QueryServiceQualification"
}

```

Creates a QueryServiceQualification

POST /queryServiceQualification?fields=...

Description

This operation creates a QueryServiceQualification entity.

Mandatory Attributes

Mandatory Attributes	Rule
searchCriteria	
searchCriteria.@type	
@type	

Usage samples

Here's an example of a request for creating QueryServiceQualification.

Request

```

POST /queryServiceQualification
Content-Type: application/json

{
  "description": "Query Service Qualification POST Illustration ",
  "expectedQualificationDate": "2023-04-13T13:51:41.218Z",
  "instantSyncQualification": false,
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "referredType": "Individual"
      }
    }
  ],
  "searchCriteria": {
    "id": "1",
    "category": {
      "id": "1",

```



```

    "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/category/1",
    "name": "Fiber Access",
    "@type": "ServiceCategoryRef",
    "@referredType": "Category"
  },
  "service": {
    "place": [
      {
        "@type": "RelatedPlaceRefOrValue",
        "role": "Installation place",
        "place": {
          "@type": "PlaceRef",
          "@referredType": "GeographicSite",
          "id": "11",
          "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
          "name": "Jean Pontus home"
        }
      }
    ],
    "@type": "Service"
  },
  "@type": "ServiceQualificationItem"
},
"@type": "QueryServiceQualification"
}

```

Response

```

201

{
  "id": "54",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/queryServiceQualification/54",
  "description": "Query Service Qualification Illustration - 2 serviceSpec available
at this place for this category",
  "effectiveQualificationDate": "2023-04-13T13:51:41.218Z",
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
  "expectedQualificationDate": "2023-04-13T13:51:41.218Z",
  "expirationDate": "2023-04-15T13:51:41.218Z",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "instantSyncQualification": false,
  "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "@type": "PartyRef",
        "referredType": "Individual"
      }
    }
  ]
}

```

```

    }
  }
],
"searchCriteria": {
  "id": "1",
  "category": {
    "id": "1",
    "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/category/1",
    "name": "Fiber Access",
    "@type": "ServiceCategoryRef",
    "@referredType": "Category"
  },
  "service": {
    "place": [
      {
        "@type": "RelatedPlaceRefOrValue",
        "role": "Installation place",
        "place": {
          "@type": "PlaceRef",
          "@referredType": "GeographicSite",
          "id": "11",
          "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
          "name": "Jean Pontus home"
        }
      }
    ],
    "@type": "Service"
  },
  "@type": "ServiceQualificationItem"
},
"serviceQualificationItem": [
  {
    "id": "1",
    "expirationDate": "2023-04-24T19:20:39.239Z",
    "service": {
      "serviceSpecification": {
        "id": "78",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/78",
        "name": "X-Fiber Service",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "ServiceQualificationItem"
  },
  {
    "id": "2",
    "expirationDate": "2023-04-24T19:20:39.239Z",
    "service": {
      "serviceSpecification": {
        "id": "87",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/87",
        "name": "Standard Fiber Service",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "ServiceQualificationItem"
  }
]

```

```

    ],
    "state": "acknowledged",
    "@type": "QueryServiceQualification"
  }

```

Updates partially a QueryServiceQualification

PATCH /queryServiceQualification/{id}?fields=...

Description

This operation allows partial updates of a QueryServiceQualification entity. Support of json/merge (<https://tools.ietf.org/html/rfc7386>) is mandatory, support of json/patch (<http://tools.ietf.org/html/rfc5789>) is optional. Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

Non Patchable Attributes	Rule
href	
id	
queryServiceQualificationDate	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable
@type	@type is immutable

Patchable Attributes	Rule
description	
effectiveQualificationDate	
errorMessage	
estimatedResponseDate	
expectedQualificationDate	
expirationDate	
externalIdentifier	
instantSyncQualification	
relatedParty	
searchCriteria	
serviceQualificationItem	
state	

Usage samples

Here's an example of a request for partial update of QueryServiceQualification using merge-patch+json with change on following attributes - externalIdentifier and expectedQualificationDate value.

Request

```
PATCH /queryServiceQualification/54
Content-Type: application/merge-patch+json

{
  "expectedQualificationDate": "2023-06-13T13:51:41.218Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "@type": "QueryServiceQualification"
}
```

Response

```
200

{
  "id": "54",
  "href":
"http://serverlocation:port/serviceQualificationManagement/v5/queryServiceQualification/54",
  "description": "Query Service Qualification Illustration",
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
  "expectedQualificationDate": "2023-06-13T13:51:41.218Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "instantSyncQualification": false,
  "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",
        "href": "http://serverlocation:port/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "referredType": "Individual"
      }
    }
  ],
  "searchCriteria": {
    "id": "1",
    "category": {
      "id": "1",
      "href": "http://serverlocation:port/serviceCatalogManagement/v5/category/1",

```

```

    "name": "Fiber Access",
    "@type": "Category"
  },
  "service": {
    "place": [
      {
        "@type": "RelatedPlaceRefOrValue",
        "role": "Installation place",
        "place": {
          "@type": "PlaceRef",
          "@referredType": "GeographicSite",
          "id": "11",
          "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
          "name": "Jean Pontus home"
        }
      }
    ]
  },
  "@type": "SearchCriteria"
},
"state": "acknowledged",
"@type": "QueryServiceQualification"
}

```

Here's an example of a request for partial update of QueryServiceQualification using json-patch+json with change on expectedQualificationDate value .

Request

```

PATCH /queryServiceQualification/54
Content-Type: application/json-patch+json

[
  {
    "op": "replace",
    "path": "expectedQualificationDate",
    "value": "2023-04-11T15:20:39.239Z"
  }
]

```

Response

```

200

{
  "id": "54",
  "href":
"http://serverlocation:port/serviceQualificationManagement/v5/queryServiceQualificat
ion/54",
  "description": "Query Service Qualification Illustration",
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
  "expectedQualificationDate": "2023-06-13T13:51:41.218Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ]
}

```

```

    ],
    "instantSyncQualification": false,
    "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
    "relatedParty": [
      {
        "role": "Buyer contact",
        "@type": "RelatedPartyOrPartyRole",
        "partyOrPartyRole": {
          "@type": "PartyRef",
          "id": "456",
          "href": "http://serverlocation:port/partyManagement/v5/individual/456",
          "name": "Jean Pontus",
          "referredType": "Individual"
        }
      }
    ],
    "searchCriteria": {
      "id": "1",
      "category": {
        "id": "1",
        "href": "http://serverlocation:port/serviceCatalogManagement/v5/category/1",
        "name": "Fiber Access",
        "@type": "Category"
      }
    },
    "service": {
      "place": [
        {
          "@type": "RelatedPlaceRefOrValue",
          "role": "Installation place",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ]
    },
    "@type": "SearchCriteria"
  },
  "state": "acknowledged",
  "@type": "QueryServiceQualification"
}

```

Here's an example of a request for partial update of QueryServiceQualification using json-patch-query with change on relatedParty value.

Request

```

PATCH /queryServiceQualification/54
Content-Type: application/json-patch-query+json

[
  { "op": "replace",
    "path":
"/relatedParty/partyOrPartyRole/name?relatedParty.partyOrPartyRole.id=456",
    "value": "Ross"
  }
]

```

]

Response

```

200

{
  "id": "54",
  "href":
  "http://serverlocation:port/serviceQualificationManagement/v5/queryServiceQualificat
  ion/54",
  "description": "Query Service Qualification Illustration",
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",
  "expectedQualificationDate": "2023-06-13T13:51:41.218Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "instantSyncQualification": false,
  "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",
        "href": "http://serverlocation:port/partyManagement/v5/individual/456",
        "name": "Ross",
        "referredType": "Individual"
      }
    }
  ],
  "searchCriteria": {
    "id": "1",
    "category": {
      "id": "1",
      "href": "http://serverlocation:port/serviceCatalogManagement/v5/category/1",
      "name": "Fiber Access",
      "@type": "Category"
    },
    "service": {
      "place": [
        {
          "@type": "RelatedPlaceRefOrValue",
          "role": "Installation place",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href":
            "http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ]
    }
  ],
  "@type": "SearchCriteria"
}

```

```
    },  
    "state": "acknowledged",  
    "@type": "QueryServiceQualification"  
  }  
}
```

Here's an example of a request for partial update of QueryServiceQualification with change on expectedQualificationDate, externalIdentifier, relatedParty value.

Request

```
PATCH /queryServiceQualification/54  
Content-Type: application/json  
  
{  
  "expectedQualificationDate": "2023-06-13T13:51:41.218Z",  
  "externalIdentifier": [  
    {  
      "id": "CSQ1-001",  
      "@type": "ExternalIdentifier"  
    }  
  ],  
  "@type": "QueryServiceQualification"  
}
```

Response

```
200  
  
{  
  "id": "54",  
  "href":  
"http://serverlocation:port/serviceQualificationManagement/v5/queryServiceQualificat  
ion/54",  
  "description": "Query Service Qualification Illustration",  
  "estimatedResponseDate": "2023-04-13T14:00:00.218Z",  
  "expectedQualificationDate": "2023-06-13T13:51:41.218Z",  
  "externalIdentifier": [  
    {  
      "id": "CSQ1-001",  
      "@type": "ExternalIdentifier"  
    }  
  ],  
  "instantSyncQualification": false,  
  "queryServiceQualificationDate": "2023-04-13T13:51:41.218Z",  
  "relatedParty": [  
    {  
      "role": "Buyer contact",  
      "@type": "RelatedPartyOrPartyRole",  
      "partyOrPartyRole": {  
        "@type": "PartyRef",  
        "id": "490",  
        "href": "http://serverlocation:port/partyManagement/v5/individual/456",  
        "name": "Ross",  
        "referredType": "Individual"  
      }  
    }  
  ],  
}
```



```

"searchCriteria": {
  "id": "1",
  "category": {
    "id": "1",
    "href": "http://serverlocation:port/serviceCatalogManagement/v5/category/1",
    "name": "Fiber Access",
    "@type": "Category"
  },
  "service": {
    "place": [
      {
        "@type": "RelatedPlaceRefOrValue",
        "role": "Installation place",
        "place": {
          "@type": "PlaceRef",
          "@referredType": "GeographicSite",
          "id": "11",
          "href":
"http://serverlocation:port/geographicSiteManagement/v5/geographicSite/11",
          "name": "Jean Pontus home"
        }
      }
    ],
    "@type": "Service"
  },
  "@type": "SearchCriteria"
},
"state": "acknowledged",
"@type": "QueryServiceQualification"
}

```

Deletes a QueryServiceQualification

DELETE /queryServiceQualification/{id}

Description

This operation deletes a QueryServiceQualification entity.

Usage samples

Here's an example of a request for deleting a specific QueryServiceQualification instance.

Request

```

DELETE /queryServiceQualification/54
Content-Type: application/json

```

Response

```

204

{
  "id": "54",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/queryServiceQualification/54",

```

```
"@type": "QueryServiceQualification"
}
```

Operations on CheckServiceQualification

Retrieves a CheckServiceQualification by ID

GET /checkServiceQualification/{id}?fields=...

Description

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

Usage samples

Here's a sample of a request for retrieving a CheckServiceQualification resource based on its id

Request

```
GET /checkServiceQualification/44
Content-Type: application/json
```

Response

```
200

{
  "id": "44",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "effectiveQualificationDate": "2023-04-11T15:20:39.239Z",
  "estimatedResponseDate": "2023-04-11T15:20:39.239Z",
  "expectedQualificationDate": "2023-04-11T15:20:39.239Z",
  "expirationDate": "2023-04-24T19:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "provideResultReason": true,
  "instantSyncQualification": false,
  "qualificationResult": "alternate",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
```

```

    "id": "456",
    "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
    "name": "Jean Pontus",
    "@type": "PartyRef",
    "referredType": "Individual"
  }
},
],
"serviceQualificationItem": [
  {
    "id": "1",
    "expectedActivationDate": "2023-04-16T19:20:39.239Z",
    "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
    "expirationDate": "2023-04-24T19:20:39.239Z",
    "qualificationResult": "alternate",
    "state": "done",
    "alternateServiceProposal": [
      {
        "id": "1",
        "alternateServiceAvailabilityDate": "2020-04-15T19:20:39.239Z",
        "alternateService": {
          "serviceCharacteristic": [
            {
              "id": "1",
              "name": "BroadcastQuality",
              "valueType": "string",
              "value": "HD",
              "@type": "StringCharacteristic"
            }
          ],
          "serviceSpecification": {
            "id": "23",
            "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
            "name": "TVAccess",
            "@type": "ServiceSpecification"
          },
          "@type": "Service"
        },
        "@type": "AlternateServiceProposal"
      }
    ],
    "eligibilityResultReason": [
      {
        "code": "26-001",
        "label": "not enough bandwidth at this place",
        "@type": "EligibilityResultReason"
      }
    ],
    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ]
    }
  }
]

```

```
    ],
    "serviceCharacteristic": [
      {
        "id": "1",
        "name": "BroadcastQuality",
        "valueType": "string",
        "value": "4K",
        "@type": "StringCharacteristic"
      }
    ],
    "serviceSpecification": {
      "id": "23",
      "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
      "name": "TVAccess",
      "@type": "ServiceSpecification"
    },
    "@type": "Service"
  },
  "@type": "CheckServiceQualificationItem"
}
],
"state": "done",
"@type": "CheckServiceQualification"
}
```

List or find CheckServiceQualification objects

GET /checkServiceQualification?fields=...

Description

This operation list CheckServiceQualification 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

Here's an example of a request for retrieving all the CheckServiceQualification that were completed.

Request

```
GET /checkServiceQualification?state=done
Content-Type: application/json
```

Response

```
200

[
  {
    "id": "44",
    "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
```

```

"checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
"description": "check service qualification illustration",
"effectiveQualificationDate": "2023-04-11T15:20:39.239Z",
"estimatedResponseDate": "2023-04-11T15:20:39.239Z",
"expectedQualificationDate": "2023-04-11T15:20:39.239Z",
"expirationDate": "2023-04-24T19:20:39.239Z",
"externalIdentifier": [
  {
    "id": "CSQ1",
    "@type": "ExternalIdentifier"
  }
],
"provideAlternative": true,
"provideResultReason": true,
"instantSyncQualification": false,
"qualificationResult": "alternate",
"relatedParty": [
  {
    "role": "Buyer contact",
    "@type": "RelatedPartyOrPartyRole",
    "partyOrPartyRole": {
      "id": "456",
      "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/456",
      "name": "Jean Pontus",
      "@type": "PartyRef",
      "referredType": "Individual"
    }
  }
],
"serviceQualificationItem": [
  {
    "id": "1",
    "expectedActivationDate": "2023-04-16T19:20:39.239Z",
    "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
    "expirationDate": "2023-04-24T19:20:39.239Z",
    "qualificationResult": "alternate",
    "state": "done",
    "alternateServiceProposal": [
      {
        "id": "1",
        "alternateServiceAvailabilityDate": "2020-04-15T19:20:39.239Z",
        "alternateService": {
          "serviceCharacteristic": [
            {
              "id": "1",
              "name": "BroadcastQuality",
              "valueType": "string",
              "value": "HD",
              "@type": "StringCharacteristic"
            }
          ],
          "serviceSpecification": {
            "id": "23",
            "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
            "name": "TVAccess",
            "@type": "ServiceSpecification"
          },
          "@type": "Service"
        },
        "@type": "AlternateServiceProposal"
      }
    ]
  }
]

```

```

    ],
    "eligibilityResultReason": [
      {
        "code": "26-001",
        "label": "not enough bandwidth at this place",
        "@type": "EligibilityResultReason"
      }
    ],
    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ],
      "serviceCharacteristic": [
        {
          "id": "1",
          "name": "BroadcastQuality",
          "valueType": "string",
          "value": "4K",
          "@type": "StringCharacteristic"
        }
      ],
      "serviceSpecification": {
        "id": "23",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
        "name": "TVAccess",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "CheckServiceQualificationItem"
  }
],
"state": "done",
"@type": "CheckServiceQualification"
}
]

```

Here's an example of a request for retrieving all the CheckServiceQualification with field selection.

Request

```

GET
/checkServiceQualification?fields=id,description,effectiveQualificationDate,expirati
onDate,qualificationResult&state=done
Content-Type: application/json

```

Response

```

200

[
  {
    "id": "48",
    "description": "check service qualification for IP",
    "effectiveQualificationDate": "2023-04-11T14:23:33.239Z",
    "expirationDate": "2023-04-11T14:23:33.239Z",
    "qualificationResult": "qualified",
    "@type": "CheckServiceQualification"
  },
  {
    "id": "44",
    "description": "check service qualification illustration",
    "effectiveQualificationDate": "2023-04-11T15:20:39.239Z",
    "expirationDate": "2023-04-11T14:23:33.239Z",
    "qualificationResult": "alternate",
    "@type": "CheckServiceQualification"
  },
  {
    "id": "41",
    "description": "check service qualification for an UNI access",
    "effectiveQualificationDate": "2023-04-11T17:10:39.239Z",
    "expirationDate": "2023-04-11T14:23:33.239Z",
    "qualificationResult": "qualified",
    "@type": "CheckServiceQualification"
  }
]

```

Creates a CheckServiceQualification

POST /checkServiceQualification?fields=...

Description

This operation creates a CheckServiceQualification entity.

Mandatory Attributes

Mandatory Attributes	Rule
serviceQualificationItem	
serviceQualificationItem.@type	
@type	

Usage samples

Here's an example of a request for creating CheckServiceQualification.

Request

```
POST /checkServiceQualification
```

```

Content-Type: application/json

{
  "description": "check service qualification illustration",
  "expectedQualificationDate": "2023-04-11T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "instantSyncQualification": false,
  "provideResultReason": true,
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "@type": "PartyRef",
        "referredType": "Individual"
      }
    }
  ],
  "serviceQualificationItem": [
    {
      "id": "1",
      "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
      "service": {
        "place": [
          {
            "role": "Installation place",
            "@type": "RelatedPlaceRefOrValue",
            "place": {
              "@type": "PlaceRef",
              "@referredType": "GeographicSite",
              "id": "11",
              "href": "https://mycsp.com:8080/tmf-api/geographicSiteManagement/v5/geographicSite/11",
              "name": "Jean Pontus home"
            }
          }
        ],
        "serviceCharacteristic": [
          {
            "id": "1",
            "name": "BroadcastQuality",
            "valueType": "string",
            "value": "4K",
            "@type": "StringCharacteristic"
          }
        ],
        "serviceSpecification": {
          "id": "23",
          "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v5/serviceSpecification/23",
          "name": "TVAccess",
          "@type": "ServiceSpecification"
        }
      },
      "@type": "Service"
    }
  ]
}

```



```

    },
    "@type": "CheckServiceQualificationItem"
  }
],
"@type": "CheckServiceQualification"
}

```

Response

```

201

{
  "id": "44",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "effectiveQualificationDate": "2023-04-11T15:20:39.239Z",
  "estimatedResponseDate": "2023-04-11T15:20:39.239Z",
  "expectedQualificationDate": "2023-04-11T15:20:39.239Z",
  "expirationDate": "2023-04-24T19:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "provideResultReason": true,
  "instantSyncQualification": false,
  "qualificationResult": "alternate",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "@type": "PartyRef",
        "referredType": "Individual"
      }
    }
  ],
  "serviceQualificationItem": [
    {
      "id": "1",
      "expectedActivationDate": "2023-04-16T19:20:39.239Z",
      "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
      "expirationDate": "2023-04-24T19:20:39.239Z",
      "qualificationResult": "alternate",
      "state": "done",
      "alternateServiceProposal": [
        {
          "id": "1",
          "alternateServiceAvailabilityDate": "2023-04-15T19:20:39.239Z",
          "alternateService": {
            "serviceCharacteristic": [
              {
                "id": "1",

```

```

        "name": "BroadcastQuality",
        "valueType": "string",
        "value": "HD",
        "@type": "StringCharacteristic"
    }
  ],
  "serviceSpecification": {
    "id": "23",
    "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
    "name": "TVAccess",
    "@type": "ServiceSpecification"
  },
  "@type": "Service"
},
"@type": "AlternateServiceProposal"
}
],
"eligibilityResultReason": [
  {
    "code": "26-001",
    "label": "not enough bandwidth at this place",
    "@type": "EligibilityResultReason"
  }
],
"service": {
  "place": [
    {
      "role": "Installation place",
      "@type": "RelatedPlaceRefOrValue",
      "place": {
        "@type": "PlaceRef",
        "@referredType": "GeographicSite",
        "id": "11",
        "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
        "name": "Jean Pontus home"
      }
    }
  ],
  "serviceCharacteristic": [
    {
      "id": "1",
      "name": "BroadcastQuality",
      "valueType": "string",
      "value": "4K",
      "@type": "StringCharacteristic"
    }
  ],
  "serviceSpecification": {
    "id": "23",
    "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
    "name": "TVAccess",
    "@type": "ServiceSpecification"
  },
  "@type": "Service"
},
"@type": "CheckServiceQualificationItem"
}
],
"state": "done",
"@type": "CheckServiceQualification"

```

}

Updates partially a CheckServiceQualification

PATCH /checkServiceQualification/{id}?fields=...

Description

This operation allows partial updates of a CheckServiceQualification entity. Support of json/merge (<https://tools.ietf.org/html/rfc7386>) is mandatory, support of json/patch (<http://tools.ietf.org/html/rfc5789>) is optional. Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

Non Patchable Attributes	Rule
checkServiceQualificationDate	
href	
id	
qualificationResult	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable
@type	@type is immutable

Patchable Attributes	Rule
description	
effectiveQualificationDate	
errorMessage	
estimatedResponseDate	
expectedQualificationDate	
expirationDate	
externalIdentifier	
instantSyncQualification	
provideAlternative	
provideResultReason	
relatedParty	
serviceQualificationItem	
state	

Usage samples

Here's an example of a request for patching a CheckServiceQualification resource (created via previous POST) with changes on attributes- externalIdentifier and expectedQualificationDate using merge-patch+json.

Request

```
PATCH /checkServiceQualification/44
Content-Type: application/merge-patch+json

{
  "expectedQualificationDate": "2023-06-15T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "@type": "CheckServiceQualification"
}
```

Response

```
200

{
  "id": "44",
  "href": "https://mycsp.com:8080/tmf-api/serviceQualificationManagement/v5/checkServiceQualification/44",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "expectedQualificationDate": "2023-06-15T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "provideResultReason": true,
  "instantSyncQualification": false,
  "qualificationResult": "unqualified",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "referredType": "Individual"
      }
    }
  ],
  "serviceQualificationItem": [
    {
```

```

    "id": "1",
    "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
    "qualificationResult": "unqualified",
    "state": "acknowledged",
    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ],
      "serviceCharacteristic": [
        {
          "id": "1",
          "name": "BroadcastQuality",
          "valueType": "string",
          "value": "4K",
          "@type": "StringCharacteristic"
        }
      ],
      "serviceSpecification": {
        "id": "23",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
        "name": "TVAccess",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "CheckServiceQualificationItem"
  }
],
"state": "acknowledged",
"@type": "CheckServiceQualification"
}

```

Here's an example of a request for patching a CheckServiceQualification resource (created via previous POST) with updated expectedQualificationDate using json-patch+json.

Request

```

PATCH /checkServiceQualification/44
Content-Type: application/json-patch+json

[
  { "op": "replace",
    "path": "expectedQualificationDate",
    "value": "2023-04-11T15:20:39.239Z"
  }
]

```

Response

```
200

{
  "id": "44",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "expectedQualificationDate": "2023-06-15T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "provideResultReason": true,
  "instantSyncQualification": false,
  "qualificationResult": "unqualified",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "referredType": "Individual"
      }
    }
  ],
  "serviceQualificationItem": [
    {
      "id": "1",
      "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
      "qualificationResult": "unqualified",
      "state": "acknowledged",
      "service": {
        "place": [
          {
            "role": "Installation place",
            "@type": "RelatedPlaceRefOrValue",
            "place": {
              "@type": "PlaceRef",
              "@referredType": "GeographicSite",
              "id": "11",
              "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
              "name": "Jean Pontus home"
            }
          }
        ]
      }
    }
  ],
  "serviceCharacteristic": [
    {
      "id": "1",
      "name": "BroadcastQuality",
      "valueType": "string",
      "value": "4K",

```

```

        "@type": "StringCharacteristic"
      }
    ],
    "serviceSpecification": {
      "id": "23",
      "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
      "name": "TVAccess",
      "@type": "ServiceSpecification"
    },
    "@type": "Service"
  },
  "@type": "CheckServiceQualificationItem"
}
],
"state": "acknowledged",
"@type": "CheckServiceQualification"
}

```

Here's an example of a request for patching a CheckServiceQualification resource (created via previous POST) with change on expectedActivationDate using json-patch-query.

Request

```

PATCH /checkServiceQualification/44
Content-Type: application/json-patch-query+json

[
  { "op": "replace",
    "path":
"/serviceQualificationItem/expectedActivationDate?serviceQualificationItem.id=1",
    "value": "2023-04-16T19:20:39.239Z"
  }
]

```

Response

```

200

{
  "id": "44",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "expectedQualificationDate": "2023-06-15T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "provideResultReason": true,
  "instantSyncQualification": false,
  "qualificationResult": "unqualified",
  "relatedParty": [

```

```

{
  "role": "Buyer contact",
  "@type": "RelatedPartyOrPartyRole",
  "partyOrPartyRole": {
    "@type": "PartyRef",
    "id": "456",
    "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/456",
    "name": "Jean Pontus",
    "referredType": "Individual"
  }
},
],
"serviceQualificationItem": [
  {
    "id": "1",
    "expectedActivationDate": "2023-04-16T19:20:39.239Z",
    "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
    "qualificationResult": "unqualified",
    "state": "acknowledged",
    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "https://mycsp.com:8080/tmf-api/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ],
      "serviceCharacteristic": [
        {
          "id": "1",
          "name": "BroadcastQuality",
          "valueType": "string",
          "value": "4K",
          "@type": "StringCharacteristic"
        }
      ],
      "serviceSpecification": {
        "id": "23",
        "href": "https://mycsp.com:8080/tmf-api/serviceCatalogManagement/v5/serviceSpecification/23",
        "name": "TVAccess",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "CheckServiceQualificationItem"
  }
],
"state": "acknowledged",
"@type": "CheckServiceQualification"
}

```

Here's an example of a request for patching a CheckServiceQualification resource (created via previous POST) with change on attributes- externalIdentifier and

expectedQualificationDate value

Request

```
PATCH /checkServiceQualification/44
Content-Type: application/json

{
  "expectedQualificationDate": "2023-06-15T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "@type": "CheckServiceQualification"
}
```

Response

```
200

{
  "id": "44",
  "href": "https://mycsp.com:8080/tmf-
api/serviceQualificationManagement/v5/checkServiceQualification/44",
  "checkServiceQualificationDate": "2023-04-10T19:20:39.239Z",
  "description": "check service qualification illustration",
  "expectedQualificationDate": "2023-06-15T15:20:39.239Z",
  "externalIdentifier": [
    {
      "id": "CSQ1-001",
      "@type": "ExternalIdentifier"
    }
  ],
  "provideAlternative": true,
  "provideResultReason": true,
  "instantSyncQualification": false,
  "qualificationResult": "unqualified",
  "relatedParty": [
    {
      "role": "Buyer contact",
      "@type": "RelatedPartyOrPartyRole",
      "partyOrPartyRole": {
        "@type": "PartyRef",
        "id": "456",
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/456",
        "name": "Jean Pontus",
        "referredType": "Individual"
      }
    }
  ],
  "serviceQualificationItem": [
    {
      "id": "1",
      "expectedServiceAvailabilityDate": "2023-04-11T19:20:39.239Z",
      "qualificationResult": "unqualified",
      "state": "acknowledged",

```

```

    "service": {
      "place": [
        {
          "role": "Installation place",
          "@type": "RelatedPlaceRefOrValue",
          "place": {
            "@type": "PlaceRef",
            "@referredType": "GeographicSite",
            "id": "11",
            "href": "https://mycsp.com:8080/tmf-
api/geographicSiteManagement/v5/geographicSite/11",
            "name": "Jean Pontus home"
          }
        }
      ],
      "serviceCharacteristic": [
        {
          "id": "1",
          "name": "BroadcastQuality",
          "valueType": "string",
          "value": "4K",
          "@type": "StringCharacteristic"
        }
      ],
      "serviceSpecification": {
        "id": "23",
        "href": "https://mycsp.com:8080/tmf-
api/serviceCatalogManagement/v5/serviceSpecification/23",
        "name": "TVAccess",
        "@type": "ServiceSpecification"
      },
      "@type": "Service"
    },
    "@type": "CheckServiceQualificationItem"
  }
],
"state": "acknowledged",
"@type": "CheckServiceQualification"
}

```

Deletes a CheckServiceQualification

DELETE /checkServiceQualification/{id}

Description

This operation deletes a CheckServiceQualification entity.

Usage samples

Here's an example of a request for deleting a specific CheckServiceQualification instance.

Request

```

DELETE /checkServiceQualification/456
Content-Type: application/json

```

Response

204

```
{  
  "id": "456",  
  "href": "https://mycsp.com:8080/tmf-  
api/serviceQualificationManagement/v5/checkServiceQualification/456",  
  "@type": "CheckServiceQualification"  
}
```

API NOTIFICATIONS

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

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

Register listener

POST /hub

Description

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

Behavior

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

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

Usage Samples

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

Request

```
POST /api/hub

Accept: application/json

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

Response

```
201

Content-Type: application/json

Location: /api/hub/42

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

Unregister listener

DELETE /hub/{id}

Description

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

Behavior

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

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

Usage Samples

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

Request

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

Response

```
204
```

Publish Event to listener

POST /client/listener

Description

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

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

Behavior

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

Usage Samples

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

Request

```
POST /client/listener

Accept: application/json

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

Response

```
201
```

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

Acknowledgements

Release History

Release Number	Date	Release led by:	Description
Version 5.0.0	September 2023	Amita Giriya Telstra amita.giriya@team.telstra.com	Upgrade to V5 design patterns and OAS3

Contributors to Document
