

# TM Forum Specification

## Agreement Management

**TMF651**

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# Table of Contents

NOTICE .....	i
Introduction .....	1
SAMPLE USE CASES .....	2
Support of polymorphism and extension patterns .....	3
RESOURCE MODEL .....	4
Managed Entity and Task Resource Models .....	4
Agreement resource .....	4
AgreementSpecification resource .....	24
Notification Resource Models .....	41
Agreement .....	42
AgreementSpecification .....	47
API OPERATIONS .....	51
Operations on Agreement .....	51
Retrieves a Agreement by ID .....	51
List or find Agreement objects .....	53
Creates a Agreement .....	54
Updates partially a Agreement .....	58
Deletes a Agreement .....	67
Operations on AgreementSpecification .....	67
Retrieves a AgreementSpecification by ID .....	67
List or find AgreementSpecification objects .....	68
Creates a AgreementSpecification .....	69
Updates partially a AgreementSpecification .....	70
Deletes a AgreementSpecification .....	76
API NOTIFICATIONS .....	77
Register listener .....	77
Unregister listener .....	78
Publish Event to listener .....	78
Acknowledgements .....	80
Release History .....	80
Contributors to Document .....	80

## Introduction

The Agreement API provides standardized mechanism for managing agreements, especially in the context on partnerships between partners.

The API allows creation, update and query of *agreement* instances as well as creation, update and query of *agreement specifications* – serving as templates for agreement instances.

The following APIs are typically used in conjunction with this API:

- Product Catalog Management API to refer to the product offerings that are linked to the agreements or agreement specifications. This will be particularly relevant for Product Agreements, that will be generated using the ProductAgreementItem subclass.
- Party Management API to refer to the engaged parties that have signed agreements

## SAMPLE USE CASES

Relevant examples of use cases for this API can be found in the Partnership Management API – Use Case section. In the partnership API, Partnership Specifications typically declare Agreement Specifications, and Partnership instances declare Party Roles instances that declare the Agreements that apply to them.

## 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 PrivacyAgreement inheriting properties from the Agreement entity.

Generic support of polymorphism and pattern extensions is described in the TMF API Guidelines v5.0 Part 2 document.

The @type attribute provides a way to represent the actual class type of an entity. For example, within a list of Agreement instances we might find instances of:

- **Agreement** itself - this is a concrete not an abstract class
- **PrivacyAgreement** - a subclass of Agreement that has additional information relating the agreement specifically to a Party Privacy profile.

Additionally, the list of AgreementItem within the Agreement can itself be polymorphic, with subentities of type:

- **AgreementItem** itself - this is a base class that contains only textual terms and conditions
- **ProductAgreementItem** - this is a subclass of AgreementItem that refers to a product in the inventory or in the catalog

The @type gives this information. All resources and sub-resources of this API must have a @type attributes that must be populated.

The @referredType must be used within reference entities (like for instance an AgreementRef object) to explicitly denote the actual entity type of the referred class. Notice that in reference entities the @type denotes the class type of the reference itself, such as AgreementRef or PrivacyAgreementRef, and not the class type of the referred object.

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

### Agreement resource

An agreement represents a contract or arrangement, either written or verbal and sometimes enforceable by law, such as a service level agreement or a customer price agreement. An agreement involves a number of other business entities, such as products, services, and resources and/or their specifications.

### Resource model

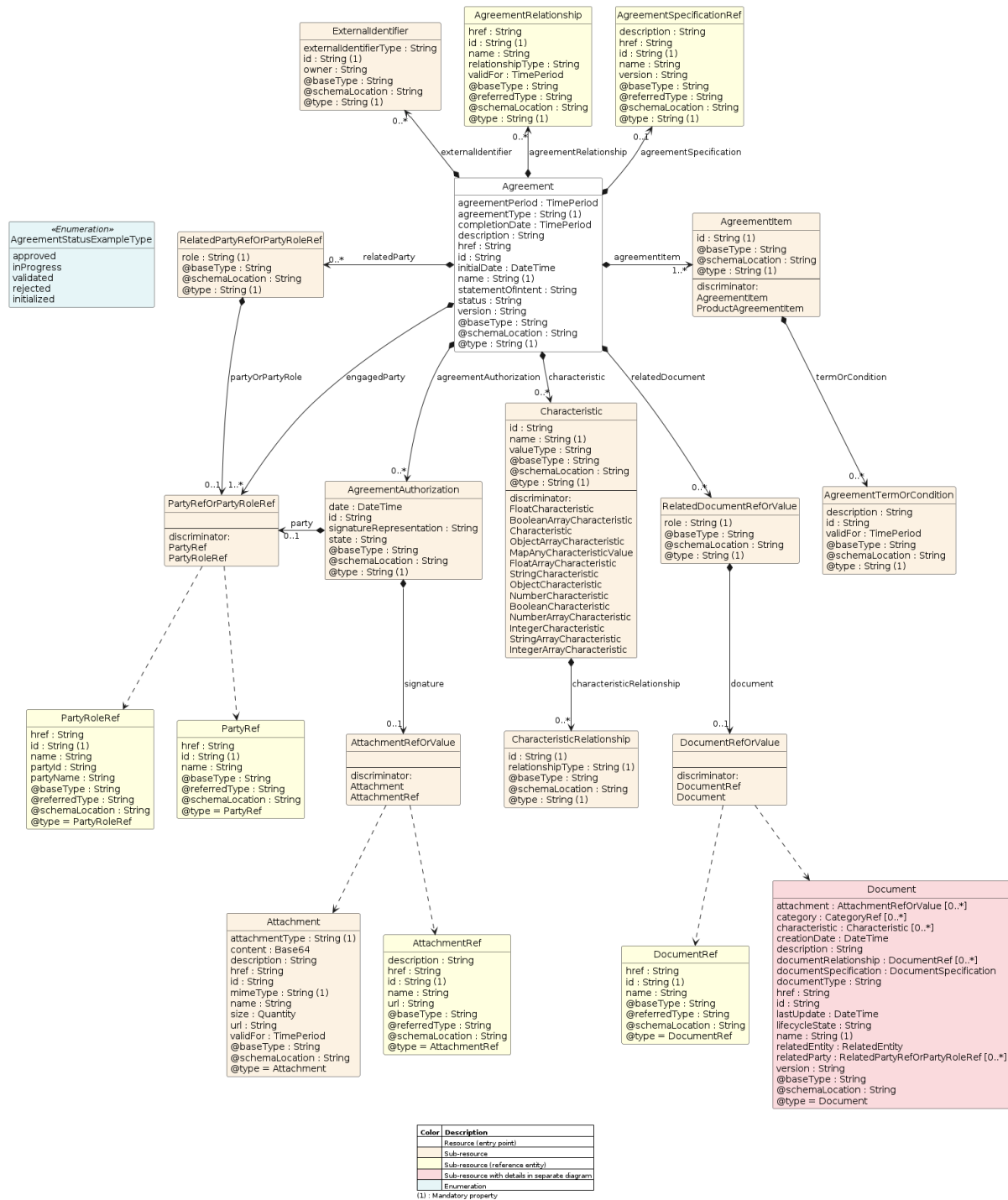


Figure 1 - Agreement



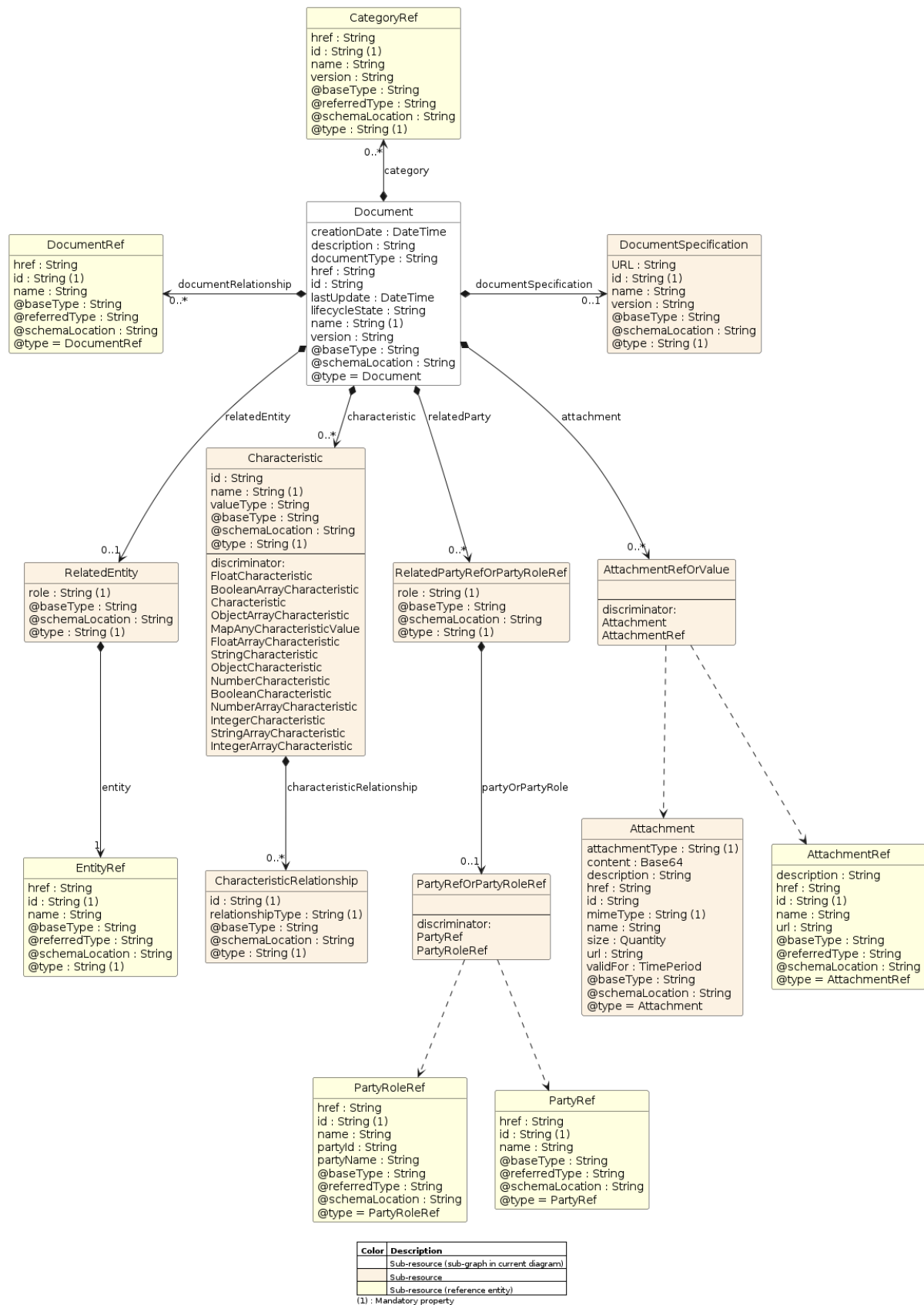


Figure 2 - Document

## Field descriptions

**Agreement fields**

agreementAuthorization	An AgreementAuthorization. An authorization by a business participant that is responsible for approving the agreement.
agreementItem	<p>An AgreementItem. A clause of the agreement containing specific terms and conditions. The clause may refer to specific products that are owned by parties to the agreement, or product offerings that will be supplied to parties under the terms of the agreement.</p> <p>AgreementItem can be instantiated as</p> <ul style="list-style-type: none"> <li>* ProductAgreementItem</li> </ul>
agreementPeriod	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
agreementRelationship	An AgreementRelationship. A uni-directional relationship from this agreement to another agreement.
agreementSpecification	An AgreementSpecificationRef. Agreement specification reference. An AgreementSpecification represents a template of an agreement that can be used when establishing partnerships.
agreementType	A String. The type of the agreement. For example commercial.
characteristic	<p>A Characteristic. Describes a given characteristic of an object or entity through a name/value pair. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : StringCharacteristic, ObjectCharacteristic, FloatCharacteristic, BooleanCharacteristic, NumberCharacteristic, IntegerCharacteristic, StringArrayCharacteristic, ObjectArrayCharacteristic, BooleanArrayCharacteristic, NumberArrayCharacteristic, IntegerArrayCharacteristic...</p> <p>Characteristic can be instantiated as</p> <ul style="list-style-type: none"> <li>* BooleanArrayCharacteristic</li> <li>* BooleanCharacteristic</li> <li>* FloatArrayCharacteristic</li> <li>* FloatCharacteristic</li> <li>* IntegerArrayCharacteristic</li> <li>* IntegerCharacteristic</li> <li>* MapAnyCharacteristicValue</li> <li>* NumberArrayCharacteristic</li> <li>* NumberCharacteristic</li> <li>* ObjectArrayCharacteristic</li> <li>* ObjectCharacteristic</li> <li>* StringArrayCharacteristic</li> <li>* StringCharacteristic</li> </ul>
completionDate	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
description	A String. Narrative that explains the agreement and details about it, such as why the agreement is taking place.
engagedParty	A PartyRefOrPartyRoleRef.

externalIdentifier	An ExternalIdentifier. An identification of an entity that is owned by or originates in a software system different from the current system, for example a ProductOrder handed off from a commerce platform into an order handling system. The structure identifies the system itself, the nature of the entity within the system (e.g. class name) and the unique ID of the entity within the system. It is anticipated that multiple external IDs can be held for a single entity, e.g. if the entity passed through multiple systems on the way to the current system. In this case the consumer is expected to sequence the IDs in the array in reverse order of provenance, i.e. most recent system first in the list.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
initialDate	A DateTime. Date at which the agreement was initialized.
name	A String. A human-readable name for the agreement.
relatedDocument	A RelatedDocumentRefOrValue. Entity reference. The polymorphic attributes @type, @schemaLocation & @referredType are related to the DocumentRefOrValue entity and not the RelatedDocumentRefOrValue class itself.
relatedParty	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
statementOfIntent	A String. An overview and goals of the Agreement.
status	A String. The current status of the agreement. Typical values are: in process, approved, rejected.
version	A String. A string identifying the version of the agreement.
@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.

### AgreementItem sub-resource fields

id	A String. Locally-unique identifier of the Agreement item within the agreement (such as a sequence number 01, 02, 03, ...; or clauses and sub-clauses 1, 1.1, 1.2, ...).
termOrCondition	An AgreementTermOrCondition. Aspects of the agreement not formally specified elsewhere in the agreement and that cannot be captured elsewhere in a formal notation, or automatically monitored and require a more human level of management.
@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.
	AgreementItem can be instantiated as * ProductAgreementItem
product	This property is present in subclasses
productOffering	This property is present in subclasses

### ProductAgreementItem sub-resource fields

id	A String. Locally-unique identifier of the Product Agreement item within the agreement (such as a sequence number 01, 02, 03, ... ; or clauses and sub-clauses 1, 1.1, 1.2, ...).
product	A ProductRef. A Product reference.
productOffering	A ProductOfferingRef. ProductOffering reference. A product offering represents entities that are orderable from the provider of the catalog, this resource includes pricing information.
termOrCondition	An AgreementTermOrCondition. Aspects of the agreement not formally specified elsewhere in the agreement and that cannot be captured elsewhere in a formal notation, or automatically monitored and require a more human level of management.
@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.

### Characteristic sub-resource fields

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

valueType	A String. Data type of the value of the characteristic.
@baseType	A String. When sub-classing, this defines the super-class.
@schemaLocation	A String. A URI to a JSON-Schema file that defines additional attributes and relationships.
@type	A String. When sub-classing, this defines the sub-class Extensible name.
	Characteristic can be instantiated as * BooleanArrayCharacteristic * BooleanCharacteristic * FloatArrayCharacteristic * FloatCharacteristic * IntegerArrayCharacteristic * IntegerCharacteristic * MapAnyCharacteristicValue * NumberArrayCharacteristic * NumberCharacteristic * ObjectArrayCharacteristic * ObjectCharacteristic * StringArrayCharacteristic * StringCharacteristic
value	This property is present in subclasses

### FloatCharacteristic sub-resource fields

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

### BooleanArrayCharacteristic sub-resource fields

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	A Boolean. A characteristic which value is an array of Boolean(s).
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.

### ObjectArrayCharacteristic sub-resource fields

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	An object. Collection of characteristic values.
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.

### MapAnyCharacteristicValue sub-resource fields

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	An object. Value 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.

### FloatArrayCharacteristic sub-resource fields

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	A Float. A characteristic which value is an array of Float(s).

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.

### StringCharacteristic sub-resource fields

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

### ObjectCharacteristic sub-resource fields

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	An object. Value 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.

### NumberCharacteristic sub-resource fields

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

value	A Number. Value 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.

**BooleanCharacteristic sub-resource fields**

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

**NumberArrayCharacteristic sub-resource fields**

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	A Number. A characteristic which value is an array of Number(s).
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.

**IntegerCharacteristic sub-resource fields**

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.



name	A String. Name of the characteristic.
value	An Integer. Value 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.

**StringArrayCharacteristic sub-resource fields**

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	A String. Collection of string characteristics.
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.

**IntegerArrayCharacteristic sub-resource fields**

characteristicRelationship	A CharacteristicRelationship. Another Characteristic that is related to the current Characteristic;.
id	A String. Unique identifier of the characteristic.
name	A String. Name of the characteristic.
value	An Integer. A characteristic which value is an array of Integer(s).
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.

**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.

### AgreementAuthorization sub-resource fields

date	A DateTime. The date associated with the authorization state.
id	A String. Locally unique index allowing a specific authorization to be addressed in the list of authorizations.
party	A PartyRefOrPartyRoleRef.
signature	An AttachmentRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Attachment entity and not the AttachmentRefOrValue class itself.
signatureRepresentation	A String. Indication that represents whether the signature is a physical paper signature or a digital signature.
state	A String. Current status of the authorization, for example in process, approved, rejected.
@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.

### AgreementSpecificationRef sub-resource fields

description	A String. A narrative that explains in detail what the agreement specification is about.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
version	A String. Agreement 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.

### RelatedDocumentRefOrValue sub-resource fields

document	A DocumentRefOrValue.
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.

### AgreementRelationship sub-resource fields

href	A String. Hyperlink reference.
id	A String. Unique identifier.
name	A String. Name of the referred entity.
relationshipType	A String. Type of relationship such as containment, substitution, dependency, exclusivity.
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.

**AgreementTermOrCondition sub-resource fields**

description	A String. Text that explains the term or condition of the agreement.
id	A String. Locally unique identifier assigned for reference.
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.

**ProductOfferingRef sub-resource fields**

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

**ProductRef sub-resource fields**

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

**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.

**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.

**DocumentRef 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.

**Document sub-resource fields**

attachment	An AttachmentRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Attachment entity and not the AttachmentRefOrValue class itself.
category	A CategoryRef. Reference to a category in the catalog.

characteristic	<p>A Characteristic. Describes a given characteristic of an object or entity through a name/value pair. This is an abstract base class, the actual value is in one of the strongly-typed subclasses : StringCharacteristic, ObjectCharacteristic, FloatCharacteristic, BooleanCharacteristic, NumberCharacteristic, IntegerCharacteristic, StringArrayCharacteristic, ObjectArrayCharacteristic, BooleanArrayCharacteristic, NumberArrayCharacteristic, IntegerArrayCharacteristic...</p> <p>Characteristic can be instantiated as</p> <ul style="list-style-type: none"> <li>* BooleanArrayCharacteristic</li> <li>* BooleanCharacteristic</li> <li>* FloatArrayCharacteristic</li> <li>* FloatCharacteristic</li> <li>* IntegerArrayCharacteristic</li> <li>* IntegerCharacteristic</li> <li>* MapAnyCharacteristicValue</li> <li>* NumberArrayCharacteristic</li> <li>* NumberCharacteristic</li> <li>* ObjectArrayCharacteristic</li> <li>* ObjectCharacteristic</li> <li>* StringArrayCharacteristic</li> <li>* StringCharacteristic</li> </ul>
creationDate	A DateTime. The date and time the document was created. A date and time formatted in compliance with the ISO8601 standard must be used.
description	A String. Free-text description of the document.
documentRelationship	A DocumentRef.
documentSpecification	A DocumentSpecification. A document specification reference.
documentType	A String. Name of the document type.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
lastUpdate	A DateTime. The date and time the document was last modified. A date and time formatted in compliance with the ISO8601 standard must be used.
lifecycleState	A String. The life cycle state of the document.
name	A String. A string used to give a name to the document.
relatedEntity	A RelatedEntity. A reference to an entity, where the type of the entity is not known in advance.
relatedParty	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
version	A String. A particular form or variety of an artefact that is different from others or from the original. The form represents differences in properties that characterize an artefact, that are not enough to warrant creating a new artefact.
@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.

**DocumentSpecification sub-resource fields**

URL	A String. URL of the Document Specification.
id	A String. Identifier of the DocumentSpecification.
name	A String. A String. Name of the DocumentSpecification.
version	A String. A string, a version of the DocumentSpecification.
@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.

**RelatedEntity sub-resource fields**

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

**CategoryRef sub-resource fields**

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

**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.

### Json representation sample(s)

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

```
{
  "@type": "Agreement",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/40",
  "id": "40",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "inProgress",
  "version": "1.0",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",
    "@referredType": "AgreementSpecification"
  },
  "agreementPeriod": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "engagedParty": [
    {
      "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/organization/500",
      "id": "500",
      "name": "Happy Travellers",
      "@type": "PartyRef",
      "@referredType": "Organization"
    }
  ],
  "characteristic": [
    {
      "name": "fidelityProgram",
      "@type": "StringCharacteristic",
      "value": "premium",
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
```

```

        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "bill receiver",
        "partyOrPartyRole": {
            "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
            "id": "2777",
            "name": "John Doe Private Holdings",
            "@type": "PartyRef",
            "@referredType": "Organization"
        }
    },
    ],
    "agreementItem": [
        {
            "id": "1",
            "@type": "AgreementItem",
            "termOrCondition": [
                {
                    "id": "1",
                    "description": "delivery should be done in France",
                    "@type": "AgreementTermOrCondition"
                }
            ]
        },
        {
            "id": "2",
            "@type": "ProductAgreementItem",
            "productOffering": [
                {
                    "id": "9559",
                    "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
                    "name": "Magic Offer",
                    "version": "1.1",
                    "@type": "ProductOfferingRef"
                }
            ],
            "product": [
                {
                    "id": "7120",
                    "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
                    "name": "Magic Offer Instance",
                    "@type": "ProductRef"
                }
            ],
            "termOrCondition": [
                {
                    "id": "1",
                    "description": "The product offering will be made available for
up to 10 users",
                    "validFor": {
                        "endTime": "2019-09-06T09:56:38.679Z",
                        "startTime": "2020-09-06T09:56:38.679Z"
                    },
                    "@type": "AgreementTermOrCondition"
                }
            ]
        }
    ]
}

```

## AgreementSpecification resource

A template of an agreement that can be used when establishing partnerships.

### Resource model

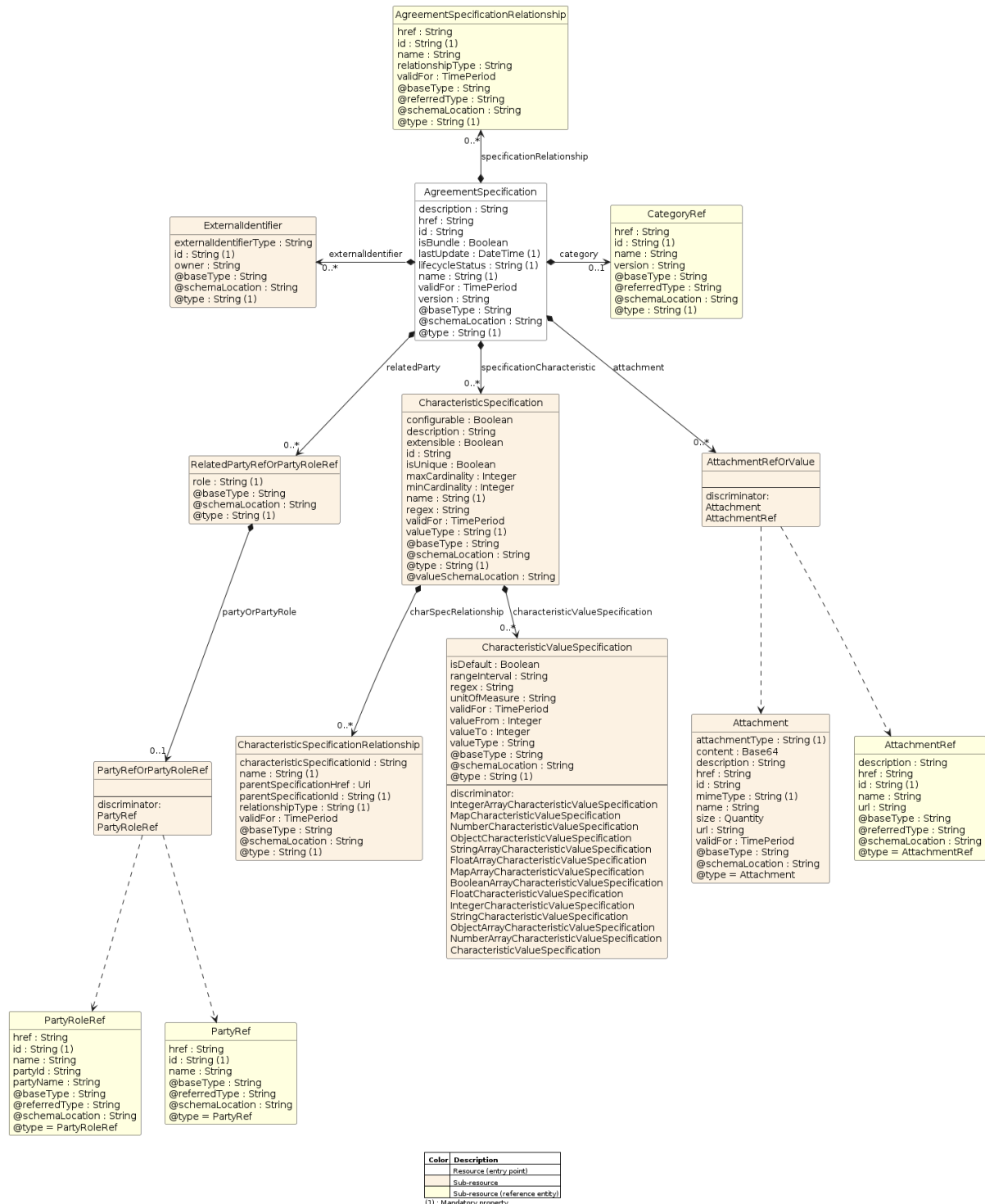


Figure 3 - AgreementSpecification

### Field descriptions

**AgreementSpecification fields**

attachment	An AttachmentRefOrValue. The polymorphic attributes @type, @schemaLocation & @referredType are related to the Attachment entity and not the AttachmentRefOrValue class itself.
category	A CategoryRef. Reference to a category in the catalog.
description	A String. A narrative that explains in detail what the agreement specification is about.
externalIdentifier	An ExternalIdentifier. An identification of an entity that is owned by or originates in a software system different from the current system, for example a ProductOrder handed off from a commerce platform into an order handling system. The structure identifies the system itself, the nature of the entity within the system (e.g. class name) and the unique ID of the entity within the system. It is anticipated that multiple external IDs can be held for a single entity, e.g. if the entity passed through multiple systems on the way to the current system. In this case the consumer is expected to sequence the IDs in the array in reverse order of provenance, i.e. most recent system first in the list.
href	A String. Hyperlink reference.
id	A String. Unique identifier.
isBundle	A Boolean. If true, this agreement specification is a grouping of other agreement specifications. The list of bundled agreement specifications is provided by the specificationRelationship property.
lastUpdate	A DateTime. Date and time of the last update.
lifecycleStatus	A String. Indicates the current lifecycle status.
name	A String. Name given to the agreement specification.
relatedParty	A RelatedPartyRefOrPartyRoleRef. RelatedParty reference. A related party defines party or party role or its reference, linked to a specific entity.
specificationCharacteristic	A CharacteristicSpecification. This class defines a characteristic specification.
specificationRelationship	An AgreementSpecificationRelationship. A relationship between agreement specifications. Typical relationships are substitution and dependency.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
version	A String. Agreement specification version.
@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.

**CategoryRef sub-resource fields**

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

**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.

**AgreementSpecificationRelationship sub-resource fields**

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

relationshipType	A String. Type of relationship such as, substitution or dependency.
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.

### CharacteristicSpecification sub-resource fields

charSpecRelationship	A CharacteristicSpecificationRelationship. An aggregation, migration, substitution, dependency or exclusivity relationship between/among Characteristic specifications. The specification characteristic is embedded within the specification whose ID and href are in this entity, and identified by its ID.
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characteristicValueSpecification	<p>A CharacteristicValueSpecification. Specification of a value (number or text or an object) that can be assigned to a Characteristic. This is an abstract base class, the actual value is in one of the strongly-typed subclasses :</p> <p>BooleanArrayCharacteristicValueSpecification, BooleanCharacteristicValueSpecification, FloatArrayCharacteristicValueSpecification, FloatCharacteristicValueSpecification, IntegerArrayCharacteristicValueSpecification, IntegerCharacteristicValueSpecification, MapArrayCharacteristicValueSpecification, MapCharacteristicValueSpecification, NumberArrayCharacteristicValueSpecification, NumberCharacteristicValueSpecification, ObjectArrayCharacteristicValueSpecification, ObjectCharacteristicValueSpecification, StringArrayCharacteristicValueSpecification, StringCharacteristicValueSpecification...</p> <p>CharacteristicValueSpecification can be instantiated as</p> <ul style="list-style-type: none"> <li>* BooleanArrayCharacteristicValueSpecification</li> <li>* FloatArrayCharacteristicValueSpecification</li> <li>* FloatCharacteristicValueSpecification</li> <li>* IntegerArrayCharacteristicValueSpecification</li> <li>* IntegerCharacteristicValueSpecification</li> <li>* MapArrayCharacteristicValueSpecification</li> <li>* MapCharacteristicValueSpecification</li> <li>* NumberArrayCharacteristicValueSpecification</li> <li>* NumberCharacteristicValueSpecification</li> <li>* ObjectArrayCharacteristicValueSpecification</li> <li>* ObjectCharacteristicValueSpecification</li> <li>* StringArrayCharacteristicValueSpecification</li> <li>* StringCharacteristicValueSpecification</li> </ul>
configurable	A Boolean. If true, the Boolean indicates that the target Characteristic is configurable.
description	A String. A narrative that explains the CharacteristicSpecification.
extensible	A Boolean. An indicator that specifies that the values for the characteristic can be extended by adding new values when instantiating a characteristic for a resource.
id	A String. Unique ID for the characteristic.
isUnique	A Boolean. Specifies if the value of this characteristic is unique across all entities instantiated from the specification that uses this characteristic. For example, consider a ProductSpecification for a set-top box, with a CharacteristicSpecification cardID. Each set-top box must have a different value for cardID, so this isUnique attribute would be set to true for the characteristic.
maxCardinality	An Integer. The maximum number of instances a CharacteristicValue can take on. For example, zero to five phone numbers in a group calling plan, where five is the value for the maxCardinality.

minCardinality	An Integer. The minimum number of instances a CharacteristicValue can take on. For example, zero to five phone numbers in a group calling plan, where zero is the value for the minCardinality.
name	A String. A word, term, or phrase by which this characteristic specification is known and distinguished from other characteristic specifications.
regex	A String. A rule or principle represented in regular expression used to derive the value of a characteristic value.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
valueType	A String. A kind of value that the characteristic can take on, such as numeric, text and so forth.
@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.
@valueSchemaLocation	A String. This (optional) field provides a link to the schema describing the value type.

### 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.
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**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.

**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.

**CharacteristicSpecificationRelationship sub-resource fields**

characteristicSpecificationId	A String. Unique identifier of the characteristic within the specification.
name	A String. Name of the target characteristic within the specification.
parentSpecificationHref	A Uri. Hyperlink reference to the parent specification containing the target characteristic.
parentSpecificationId	A String. Unique identifier of the parent specification containing the target characteristic.
relationshipType	A String. Type of relationship such as aggregation, migration, substitution, dependency, exclusivity.
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.

**CharacteristicValueSpecification sub-resource fields**

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.

valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.
	CharacteristicValueSpecification can be instantiated as * BooleanArrayCharacteristicValueSpecification * FloatArrayCharacteristicValueSpecification * FloatCharacteristicValueSpecification * IntegerArrayCharacteristicValueSpecification * IntegerCharacteristicValueSpecification * MapArrayCharacteristicValueSpecification * MapCharacteristicValueSpecification * NumberArrayCharacteristicValueSpecification * NumberCharacteristicValueSpecification * ObjectArrayCharacteristicValueSpecification * ObjectCharacteristicValueSpecification * StringArrayCharacteristicValueSpecification * StringCharacteristicValueSpecification
value	This property is present in subclasses

### IntegerArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	An Integer.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### MapCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	An object. Value of the characteristic.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### NumberCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.

validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	A Number. Value of the characteristic.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### ObjectCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	An object. Value of the characteristic.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### StringArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	A String.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### FloatArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	A Float.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.

valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### MapArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	An object.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### BooleanArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.

unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	A Boolean.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### FloatCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	A Float. Value of the characteristic.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.
-------	--

**IntegerCharacteristicValueSpecification sub-resource fields**

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	An Integer. Value of the characteristic.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

**StringCharacteristicValueSpecification sub-resource fields**

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.

value	A String. Value of the characteristic.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### ObjectArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	An object. Collection of characteristic values.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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.

### NumberArrayCharacteristicValueSpecification sub-resource fields

isDefault	A Boolean. If true, the Boolean Indicates if the value is the default value for a characteristic.
-----------	---

rangeInterval	A String. An indicator that specifies the inclusion or exclusion of the valueFrom and valueTo attributes. If applicable, possible values are "open", "closed", "closedBottom" and "closedTop".
regex	A String. A regular expression constraint for given value.
unitOfMeasure	A String. A length, surface, volume, dry measure, liquid measure, money, weight, time, and the like. In general, a determinate quantity or magnitude of the kind designated, taken as a standard of comparison for others of the same kind, in assigning to them numerical values, as 1 foot, 1 yard, 1 mile, 1 square foot.
validFor	A TimePeriod. A period of time, either as a deadline (endDateTime only) a startDateTime only, or both.
value	A Number.
valueFrom	An Integer. The low range value that a characteristic can take on.
valueTo	An Integer. The upper range value that a characteristic can take on.
valueType	A String. A kind of value that the characteristic value can take on, such as numeric, text and so forth.
@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 'AgreementSpecification' resource object.

```
{
  "@type": "AgreementSpecification",
  "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
  "id": "1140",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "Approved",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "2.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {
      "@type": "CharacteristicSpecification",
      "name": "fidelityProgram",
      "configurable": true,
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
```

```

      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "agreement expert",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
        "id": "2778",
        "name": "Jean Smith",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ]
}

```

## Notification Resource Models

8 notifications are defined for this API.

Notifications related to Agreement:

- Create Event
- Delete Event
- Attribute Value Change Event
- State Change Event

Notifications related to AgreementSpecification:

- Create Event
- Delete Event
- Attribute Value Change Event
- State Change Event

The notification structure for all notifications in this API follow the pattern depicted by the figure below. A notification event resource (depicted by "SpecificEvent" placeholder) is a 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).

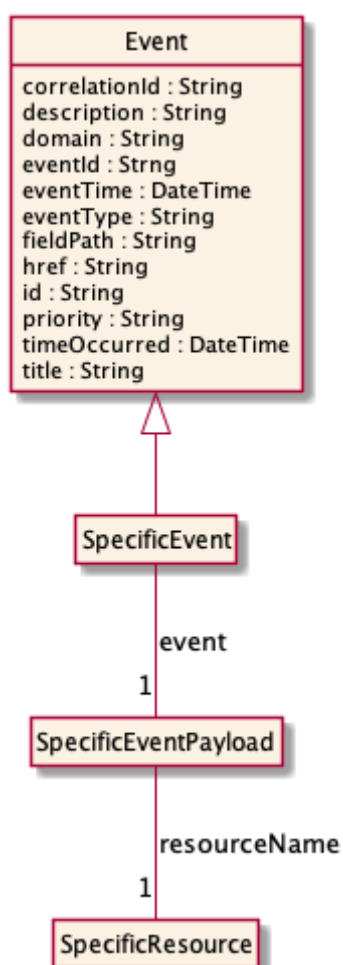


Figure 4 Notification Pattern

## Agreement

### Create Event

Message example for AgreementCreateEvent event

```

Content-Type: application/json

{
  "correlationId": "ecdala89-9ff5",
  "description": "AgreementCreateEvent illustration",
  "domain": "Commercial",
  "eventId": "40bb-a450-ecbabb2e23ae",
  "eventTime": "2022-08-25T12:20:58.621Z",
  "eventType": "AgreementCreateEvent",
  "priority": "3",
  "timeOccurred": "2022-08-25T12:20:55.865Z",
  "title": "AgreementCreateEvent",
  "event": {
    "agreement": {
      "@type": "Agreement",
      "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreement/40",
      "id": "40",

```

```

    "name": "Moon",
    "agreementType": "commercial",
    "status": "InProgress",
    "lastUpdate": "2018-06-05T00:00:00Z",
    "version": "1.0",
    "agreementSpecification": {
      "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
      "id": "1140",
      "name": "Moon Agreement Template",
      "@type": "AgreementSpecificationRef",
      "@referredType": "AgreementSpecification"
    },
    "agreementPeriod": {
      "startDateTime": "2018-06-12T00:00:00Z",
      "endDateTime": "2019-01-11T00:00:00Z"
    },
    "engagedParty": [
      {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/500",
        "id": "500",
        "name": "Happy Travellers",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    ],
    "characteristic": [
      {
        "name": "fidelityProgram",
        "@type": "StringCharacteristic",
        "value": "premium",
        "valueType": "string"
      }
    ],
    "relatedParty": [
      {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "bill receiver",
        "partyOrPartyRole": {
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
          "id": "2777",
          "name": "John Doe Private Holdings",
          "@type": "PartyRef",
          "@referredType": "Organization"
        }
      }
    ],
    "agreementItem": [
      {
        "id": "1",
        "@type": "AgreementItem",
        "termOrCondition": [
          {
            "id": "1",
            "description": "delivery should be done in France",
            "@type": "AgreementTermOrCondition"
          }
        ]
      },
      {
        "id": "2",

```

```

        "@type": "ProductAgreementItem",
        "productOffering": [
            {
                "id": "9559",
                "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
                "name": "Magic Offer",
                "version": "1.1",
                "@type": "ProductOfferingRef"
            }
        ],
        "product": [
            {
                "id": "7120",
                "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
                "name": "Magic Offer Instance",
                "@type": "ProductRef"
            }
        ],
        "termOrCondition": [
            {
                "id": "1",
                "description": "The product offering will be made
available for up to 10 users",
                "validFor": {
                    "endDateTime": "2019-09-06T09:56:38.679Z",
                    "startDateTime": "2020-09-06T09:56:38.679Z"
                },
                "@type": "AgreementTermOrCondition"
            }
        ]
    }
}

},
"reportingSystem": {
    "id": "959",
    "name": "APP-628",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
},
"source": {
    "id": "281",
    "name": "APP-436",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
},
"@baseType": "Event",
"@type": "AgreementCreateEvent"
}

```

## Delete Event

Message example for AgreementDeleteEvent event

```

Content-Type: application/json

{
    "correlationId": "47db624a-af7a",

```

```

    "description": "AgreementDeleteEvent illustration",
    "domain": "Commercial",
    "eventId": "4cad-9c02-361e8fed9e8e",
    "eventTime": "2022-08-25T12:20:58.662Z",
    "eventType": "AgreementDeleteEvent",
    "priority": "1",
    "timeOccurred": "2022-08-25T12:20:56.380Z",
    "title": "AgreementDeleteEvent",
    "event": {
      "agreement": {
        "@type": "Agreement",
        "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/Agreement/1140",
        "id": "1140"
      }
    },
    "reportingSystem": {
      "id": "959",
      "name": "APP-628",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "source": {
      "id": "281",
      "name": "APP-436",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "@baseType": "Event",
    "@type": "AgreementDeleteEvent"
  }

```

## Attribute Value Change Event

### Message example for AgreementAttributeValueChangeEvent event

```

Content-Type: application/json

{
  "correlationId": "b04d1155-3bfe",
  "description": "AgreementAttributeValueChangeEvent illustration",
  "domain": "Commercial",
  "eventId": "4ce0-85b4-3594a96eca18",
  "eventTime": "2022-08-25T12:20:58.633Z",
  "eventType": "AgreementAttributeValueChangeEvent",
  "priority": "1",
  "timeOccurred": "2022-08-25T12:20:56.012Z",
  "title": "AgreementAttributeValueChangeEvent",
  "event": {
    "agreement": {
      "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreement/40",
      "id": "40",
      "@type": "Agreement",
      "validFor": {
        "startDateTime": "2018-06-12T00:00:00Z",
        "endDateTime": "2020-01-11T00:00:00Z"
      }
    }
  }
}

```



```

    "reportingSystem": {
      "id": "959",
      "name": "APP-628",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "source": {
      "id": "281",
      "name": "APP-436",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "@baseType": "Event",
    "@type": "AgreementAttributeValueChangeEvent"
  }

```

## State Change Event

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

```

Content-Type: application/json

{
  "correlationId": "eed80420-1889",
  "description": "AgreementStateChangeEvent illustration",
  "domain": "Commercial",
  "eventId": "4594-809a-e75849cc782e",
  "eventTime": "2022-08-25T12:20:58.645Z",
  "eventType": "AgreementStateChangeEvent",
  "priority": "5",
  "timeOccurred": "2022-08-25T12:20:49.658Z",
  "title": "AgreementStateChangeEvent",
  "event": {
    "agreement": {
      "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/1140",
      "id": "1140",
      "@type": "Agreement",
      "status": "rejected"
    }
  },
  "reportingSystem": {
    "id": "959",
    "name": "APP-628",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "281",
    "name": "APP-436",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "AgreementStateChangeEvent"
}

```

## AgreementSpecification

### Create Event

Message example for AgreementSpecificationCreateEvent event

```
Content-Type: application/json

{
  "correlationId": "ecdala89-9ff5",
  "description": "AgreementSpecificationCreateEvent illustration",
  "domain": "Commercial",
  "eventId": "40bb-a450-ecbabb2e23ae",
  "eventTime": "2022-08-25T12:20:58.621Z",
  "eventType": "AgreementSpecificationCreateEvent",
  "priority": "3",
  "timeOccurred": "2022-08-25T12:20:55.865Z",
  "title": "AgreementSpecificationCreateEvent",
  "event": {
    "agreementSpecification": {
      "@type": "AgreementSpecification",
      "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
      "id": "1140",
      "name": "Moon Agreement Template",
      "lifecycleStatus": "Approved",
      "version": "2.0",
      "validFor": {
        "startDateTime": "2018-06-12T00:00:00Z",
        "endDateTime": "2019-01-11T00:00:00Z"
      },
      "specificationCharacteristic": [
        {
          "@type": "CharacteristicSpecification",
          "name": "fidelityProgram",
          "configurable": true,
          "valueType": "string"
        }
      ],
      "relatedParty": [
        {
          "@type": "RelatedPartyRefOrPartyRoleRef",
          "role": "agreement expert",
          "partyOrPartyRole": {
            "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/2778",
            "id": "2778",
            "name": "Jean Smith",
            "@type": "PartyRef",
            "@referredType": "Organization"
          }
        }
      ]
    },
    "reportingSystem": {
      "id": "959",
      "name": "APP-628",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    }
  }
}
```

```

    "source": {
      "id": "281",
      "name": "APP-436",
      "@type": "ReportingResource",
      "@referredType": "LogicalResource"
    },
    "@baseType": "Event",
    "@type": "AgreementSpecificationCreateEvent"
  }

```

## Delete Event

### Message example for AgreementSpecificationDeleteEvent event

Content-Type: application/json

```

{
  "correlationId": "47db624a-af7a",
  "description": "AgreementSpecificationDeleteEvent illustration",
  "domain": "Commercial",
  "eventId": "4cad-9c02-361e8fed9e8e",
  "eventTime": "2022-08-25T12:20:58.662Z",
  "eventType": "AgreementSpecificationDeleteEvent",
  "priority": "1",
  "timeOccurred": "2022-08-25T12:20:56.380Z",
  "title": "AgreementSpecificationDeleteEvent",
  "event": {
    "agreementSpecification": {
      "@type": "AgreementSpecification",
      "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
      "id": "1140"
    }
  },
  "reportingSystem": {
    "id": "959",
    "name": "APP-628",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "source": {
    "id": "281",
    "name": "APP-436",
    "@type": "ReportingResource",
    "@referredType": "LogicalResource"
  },
  "@baseType": "Event",
  "@type": "AgreementSpecificationDeleteEvent"
}

```

## Attribute Value Change Event

### Message example for AgreementSpecificationAttributeValueChangeEvent event

Content-Type: application/json

```

{

```

```

"correlationId": "b04d1155-3bfe",
"description": "AgreementSpecificationAttributeValueChangeEvent illustration",
"domain": "Commercial",
"eventId": "4ce0-85b4-3594a96eca18",
"eventTime": "2022-08-25T12:20:58.633Z",
"eventType": "AgreementSpecificationAttributeValueChangeEvent",
"priority": "1",
"timeOccurred": "2022-08-25T12:20:56.012Z",
"title": "AgreementSpecificationAttributeValueChangeEvent",
"event": {
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "@type": "AgreementSpecification",
    "validFor": {
      "startDateTime": "2018-06-12T00:00:00Z",
      "endDateTime": "2020-01-11T00:00:00Z"
    }
  }
},
"reportingSystem": {
  "id": "959",
  "name": "APP-628",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"source": {
  "id": "281",
  "name": "APP-436",
  "@type": "ReportingResource",
  "@referredType": "LogicalResource"
},
"@baseType": "Event",
"@type": "AgreementSpecificationAttributeValueChangeEvent"
}

```

## State Change Event

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

```

Content-Type: application/json

{
  "correlationId": "eed80420-1889",
  "description": "AgreementSpecificationStateChangeEvent illustration",
  "domain": "Commercial",
  "eventId": "4594-809a-e75849cc782e",
  "eventTime": "2022-08-25T12:20:58.645Z",
  "eventType": "AgreementSpecificationStateChangeEvent",
  "priority": "5",
  "timeOccurred": "2022-08-25T12:20:49.658Z",
  "title": "AgreementSpecificationStateChangeEvent",
  "event": {
    "agreementSpecification": {
      "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
      "id": "1140",

```

```
        "@type": "AgreementSpecification",
        "lifecycleStatus": "Approved"
    },
    "reportingSystem": {
        "id": "959",
        "name": "APP-628",
        "@type": "ReportingResource",
        "@referredType": "LogicalResource"
    },
    "source": {
        "id": "281",
        "name": "APP-436",
        "@type": "ReportingResource",
        "@referredType": "LogicalResource"
    },
    "@baseType": "Event",
    "@type": "AgreementSpecificationStateChangeEvent"
}
```

## 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
Complete Update of an Entity	PUT Resource	PUT must be used to completely update a resource identified by its resource URI
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 Agreement

#### Retrieves a Agreement by ID

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

#### Description

This operation retrieves an Agreement 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 request for retrieving a specific Agreement resource

#### Request

```
GET /agreement/40
Content-Type: application/json
```

#### Response

200

```

{
  "@type": "Agreement",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/40",
  "id": "40",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "InProgress",
  "version": "1.0",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",
    "@referredType": "AgreementSpecification"
  },
  "agreementPeriod": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "engagedParty": [
    {
      "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/organization/500",
      "id": "500",
      "name": "Happy Travellers",
      "@type": "PartyRef",
      "@referredType": "Organization"
    }
  ],
  "characteristic": [
    {
      "name": "fidelityProgram",
      "@type": "StringCharacteristic",
      "value": "premium",
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "bill receiver",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/organization/2777",
        "id": "2777",
        "name": "John Doe Private Holdings",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ],
  "agreementItem": [
    {
      "id": "1",
      "@type": "AgreementItem",
      "termOrCondition": [
        {
          "id": "1",
          "description": "delivery should be done in France",

```

```

        "@type": "AgreementTermOrCondition"
      }
    ],
  },
  {
    "id": "2",
    "@type": "ProductAgreementItem",
    "productOffering": [
      {
        "id": "9559",
        "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
        "name": "Magic Offer",
        "version": "1.1",
        "@type": "ProductOfferingRef"
      }
    ],
    "product": [
      {
        "id": "7120",
        "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
        "name": "Magic Offer Instance",
        "@type": "ProductRef"
      }
    ],
    "termOrCondition": [
      {
        "id": "1",
        "description": "The product offering will be made available for
up to 10 users",
        "validFor": {
          "endTime": "2019-09-06T09:56:38.679Z",
          "startTime": "2020-09-06T09:56:38.679Z"
        },
        "@type": "AgreementTermOrCondition"
      }
    ]
  }
]
}

```

## List or find Agreement objects

**GET** /agreement?fields=...

### Description

This operation list Agreement 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

TBD - not retrievable from API

### Request



```
GET /agreement
Content-Type: application/json
{}
```

## Response

```
200
```

## Creates a Agreement

**POST** /agreement?fields=...

## Description

This operation creates an Agreement entity.

## Mandatory Attributes

Mandatory Attributes	Rule
agreementItem	
agreementItem.@type	
agreementItem.id	
agreementType	
engagedParty	
engagedParty.@type	
name	
@type	

## Usage samples

Here is an example of a request for creating an agreement.

## Request

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

{
  "@type": "Agreement",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "inProgress",
  "version": "1.0",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
```

```

    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",
    "@referredType": "AgreementSpecification"
  },
  "agreementPeriod": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "engagedParty": [
    {
      "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/500",
      "id": "500",
      "name": "Happy Travellers",
      "@type": "PartyRef",
      "@referredType": "Organization"
    }
  ],
  "characteristic": [
    {
      "name": "fidelityProgram",
      "@type": "StringCharacteristic",
      "value": "premium",
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "bill receiver",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
        "id": "2777",
        "name": "John Doe Private Holdings",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ],
  "agreementItem": [
    {
      "id": "1",
      "@type": "AgreementItem",
      "termOrCondition": [
        {
          "id": "1",
          "description": "delivery should be done in France",
          "@type": "AgreementTermOrCondition"
        }
      ]
    },
    {
      "id": "2",
      "@type": "ProductAgreementItem",
      "productOffering": [
        {
          "id": "9559",
          "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
          "name": "Magic Offer",
          "version": "1.1",
          "@type": "ProductOfferingRef"
        }
      ]
    }
  ]
}

```

```

    }
  ],
  "product": [
    {
      "id": "7120",
      "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
      "name": "Magic Offer Instance",
      "@type": "ProductRef"
    }
  ],
  "termOrCondition": [
    {
      "id": "1",
      "description": "The product offering will be made available for
up to 10 users",
      "validFor": {
        "endTime": "2019-09-06T09:56:38.679Z",
        "startTime": "2020-09-06T09:56:38.679Z"
      },
      "@type": "AgreementTermOrCondition"
    }
  ]
}
]
}

```

## Response

```

201

{
  "@type": "Agreement",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "inProgress",
  "version": "1.0",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",
    "@referredType": "AgreementSpecification"
  },
  "agreementPeriod": {
    "startTime": "2018-06-12T00:00:00Z",
    "endTime": "2019-01-11T00:00:00Z"
  },
  "engagedParty": [
    {
      "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/500",
      "id": "500",
      "name": "Happy Travellers",
      "@type": "PartyRef",
      "@referredType": "Organization"
    }
  ],
  "characteristic": [

```

```

    {
      "name": "fidelityProgram",
      "@type": "StringCharacteristic",
      "value": "premium",
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "bill receiver",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
        "id": "2777",
        "name": "John Doe Private Holdings",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ],
  "agreementItem": [
    {
      "id": "1",
      "@type": "AgreementItem",
      "termOrCondition": [
        {
          "id": "1",
          "description": "delivery should be done in France",
          "@type": "AgreementTermOrCondition"
        }
      ]
    },
    {
      "id": "2",
      "@type": "ProductAgreementItem",
      "productOffering": [
        {
          "id": "9559",
          "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
          "name": "Magic Offer",
          "version": "1.1",
          "@type": "ProductOfferingRef"
        }
      ],
      "product": [
        {
          "id": "7120",
          "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
          "name": "Magic Offer Instance",
          "@type": "ProductRef"
        }
      ],
      "termOrCondition": [
        {
          "id": "1",
          "description": "The product offering will be made available for
up to 10 users",
          "validFor": {
            "endTime": "2019-09-06T09:56:38.679Z",
            "startTime": "2020-09-06T09:56:38.679Z"
          }
        }
      ]
    }
  ]
}

```

```

    },
    "@type": "AgreementTermOrCondition"
  }
]
}

```

## Updates partially a Agreement

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

### Description

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

### Patchable and Non Patchable Attributes

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

Patchable Attributes	Rule
agreementAuthorization	
agreementItem	
agreementPeriod	
agreementRelationship	
agreementSpecification	
agreementType	
characteristic	
completionDate	
description	
engagedParty	
externalIdentifier	
initialDate	

Patchable Attributes	Rule
name	
relatedDocument	
relatedParty	
statementOfIntent	
status	
version	

## Usage samples

Here is an example of a request for patching an agreement. In this example, the agreement status is set.

### Request

```
PATCH /agreement/40
Content-Type: application/merge-patch+json

{
  "@type": "Agreement",
  "status": "rejected"
}
```

### Response

```
200

{
  "@type": "Agreement",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/40",
  "id": "40",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "rejected",
  "version": "1.0",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",
    "@referredType": "AgreementSpecification"
  },
  "agreementPeriod": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "engagedParty": [
    {
      "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/organization/500",
      "id": "500",

```

```

        "name": "Happy Travellers",
        "@type": "PartyRef",
        "@referredType": "Organization"
    }
],
"characteristic": [
    {
        "name": "fidelityProgram",
        "@type": "StringCharacteristic",
        "value": "premium",
        "valueType": "string"
    }
],
"relatedParty": [
    {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "bill receiver",
        "partyOrPartyRole": {
            "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
            "id": "2777",
            "name": "John Doe Private Holdings",
            "@type": "PartyRef",
            "@referredType": "Organization"
        }
    }
],
"agreementItem": [
    {
        "id": "1",
        "@type": "AgreementItem",
        "termOrCondition": [
            {
                "id": "1",
                "description": "delivery should be done in France",
                "@type": "AgreementTermOrCondition"
            }
        ]
    },
    {
        "id": "2",
        "@type": "ProductAgreementItem",
        "productOffering": [
            {
                "id": "9559",
                "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
                "name": "Magic Offer",
                "version": "1.1",
                "@type": "ProductOfferingRef"
            }
        ],
        "product": [
            {
                "id": "7120",
                "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
                "name": "Magic Offer Instance",
                "@type": "ProductRef"
            }
        ],
        "termOrCondition": [
            {

```

```

        "id": "1",
        "description": "The product offering will be made available for
up to 10 users",
        "validFor": {
            "endTime": "2019-09-06T09:56:38.679Z",
            "startTime": "2020-09-06T09:56:38.679Z"
        },
        "@type": "AgreementTermOrCondition"
    }
}
]
}

```

Here is an example of a request for patching an agreement. In this example, the agreement status is set.

### Request

```

PATCH /agreement/40
Content-Type: application/json

{
    "@type": "Agreement",
    "status": "rejected"
}

```

### Response

```

200

{
    "@type": "Agreement",
    "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/40",
    "id": "40",
    "name": "Moon",
    "agreementType": "commercial",
    "status": "rejected",
    "version": "1.0",
    "agreementSpecification": {
        "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
        "id": "1140",
        "name": "Moon Agreement Template",
        "@type": "AgreementSpecificationRef",
        "@referredType": "AgreementSpecification"
    },
    "agreementPeriod": {
        "startTime": "2018-06-12T00:00:00Z",
        "endTime": "2019-01-11T00:00:00Z"
    },
    "engagedParty": [
        {
            "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/500",
            "id": "500",
            "name": "Happy Travellers",

```



```

        "@type": "PartyRef",
        "@referredType": "Organization"
    }
],
"characteristic": [
    {
        "name": "fidelityProgram",
        "@type": "StringCharacteristic",
        "value": "premium",
        "valueType": "string"
    }
],
"relatedParty": [
    {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "bill receiver",
        "partyOrPartyRole": {
            "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
            "id": "2777",
            "name": "John Doe Private Holdings",
            "@type": "PartyRef",
            "@referredType": "Organization"
        }
    }
],
"agreementItem": [
    {
        "id": "1",
        "@type": "AgreementItem",
        "termOrCondition": [
            {
                "id": "1",
                "description": "delivery should be done in France",
                "@type": "AgreementTermOrCondition"
            }
        ]
    },
    {
        "id": "2",
        "@type": "ProductAgreementItem",
        "productOffering": [
            {
                "id": "9559",
                "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
                "name": "Magic Offer",
                "version": "1.1",
                "@type": "ProductOfferingRef"
            }
        ],
        "product": [
            {
                "id": "7120",
                "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
                "name": "Magic Offer Instance",
                "@type": "ProductRef"
            }
        ],
        "termOrCondition": [
            {
                "id": "1",

```

```

        "description": "The product offering will be made available for
up to 10 users",
        "validFor": {
            "endTime": "2019-09-06T09:56:38.679Z",
            "startTime": "2020-09-06T09:56:38.679Z"
        },
        "@type": "AgreementTermOrCondition"
    }
}
]
}

```

Here is an example of a request for patching an agreement. In this example, a new version is set, together with validity period.

### Request

```

PATCH /agreement/40
Content-Type: application/json-patch+json

[
  {
    "op": "replace",
    "path": "version",
    "value": "2.0"
  },
  {
    "op": "replace",
    "path": "agreementPeriod",
    "value": {
      "startDateTime": "2018-06-12T00:00:00Z",
      "endDateTime": "2020-01-11T00:00:00Z"
    }
  }
]

```

### Response

```

200

{
  "@type": "Agreement",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/40",
  "id": "40",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "inProgress",
  "version": "1.1",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",
    "@referredType": "AgreementSpecification"
  },
}

```

```

    "agreementPeriod": {
      "startDateTime": "2018-06-12T00:00:00Z",
      "endDateTime": "2020-01-11T00:00:00Z"
    },
    "engagedParty": [
      {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/500",
        "id": "500",
        "name": "Happy Travellers",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    ],
    "characteristic": [
      {
        "name": "fidelityProgram",
        "@type": "StringCharacteristic",
        "value": "premium",
        "valueType": "string"
      }
    ],
    "relatedParty": [
      {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "bill receiver",
        "partyOrPartyRole": {
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
          "id": "2777",
          "name": "John Doe Private Holdings",
          "@type": "PartyRef",
          "@referredType": "Organization"
        }
      }
    ],
    "agreementItem": [
      {
        "id": "1",
        "@type": "AgreementItem",
        "termOrCondition": [
          {
            "id": "1",
            "description": "delivery should be done in France",
            "@type": "AgreementTermOrCondition"
          }
        ]
      },
      {
        "id": "2",
        "@type": "ProductAgreementItem",
        "productOffering": [
          {
            "id": "9559",
            "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
            "name": "Magic Offer",
            "version": "1.1",
            "@type": "ProductOfferingRef"
          }
        ],
        "product": [
          {

```

```

        "id": "7120",
        "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
        "name": "Magic Offer Instance",
        "@type": "ProductRef"
    },
    ],
    "termOrCondition": [
        {
            "id": "1",
            "description": "The product offering will be made available for
up to 10 users",
            "validFor": {
                "endTime": "2019-09-06T09:56:38.679Z",
                "startTime": "2020-09-06T09:56:38.679Z"
            },
            "@type": "AgreementTermOrCondition"
        }
    ]
}

```

Here is an example of a request for patching an agreement. In this example, a characteristic value is updated.

### Request

```

PATCH /agreement/40
Content-Type: application/json-patch-query+json

[
  {
    "op": "replace",
    "path": "/characteristic/value?/characteristic/name=fidelityProgram",
    "value": "standard"
  }
]

```

### Response

```

200

{
  "@type": "Agreement",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreement/40",
  "id": "40",
  "name": "Moon",
  "agreementType": "commercial",
  "status": "inProgress",
  "version": "1.0",
  "agreementSpecification": {
    "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
    "id": "1140",
    "name": "Moon Agreement Template",
    "@type": "AgreementSpecificationRef",

```

```

    "@referredType": "AgreementSpecification"
  },
  "agreementPeriod": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "engagedParty": [
    {
      "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/500",
      "id": "500",
      "name": "Happy Travellers",
      "@type": "PartyRef",
      "@referredType": "Organization"
    }
  ],
  "characteristic": [
    {
      "name": "fidelityProgram",
      "@type": "StringCharacteristic",
      "value": "standard",
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "bill receiver",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/organization/2777",
        "id": "2777",
        "name": "John Doe Private Holdings",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ],
  "agreementItem": [
    {
      "id": "1",
      "@type": "AgreementItem",
      "termOrCondition": [
        {
          "id": "1",
          "description": "delivery should be done in France",
          "@type": "AgreementTermOrCondition"
        }
      ]
    },
    {
      "id": "2",
      "@type": "ProductAgreementItem",
      "productOffering": [
        {
          "id": "9559",
          "href": "https://mycsp.com:8080/tmf-
api/productCatalog/v5/productOffering/9559",
          "name": "Magic Offer",
          "version": "1.1",
          "@type": "ProductOfferingRef"
        }
      ]
    }
  ],

```

```

    "product": [
      {
        "id": "7120",
        "href": "https://mycsp.com:8080/tmf-
api/productInventory/v5/product/7120",
        "name": "Magic Offer Instance",
        "@type": "ProductRef"
      }
    ],
    "termOrCondition": [
      {
        "id": "1",
        "description": "The product offering will be made available for
up to 10 users",
        "validFor": {
          "endTime": "2019-09-06T09:56:38.679Z",
          "startTime": "2020-09-06T09:56:38.679Z"
        },
        "@type": "AgreementTermOrCondition"
      }
    ]
  }
}

```

## Deletes a Agreement

**DELETE** /agreement/{id}

### Description

This operation deletes an Agreement entity.

## Operations on AgreementSpecification

### Retrieves a AgreementSpecification by ID

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

### Description

This operation retrieves an AgreementSpecification 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 request for retrieving an AgreementSpecification resource

### Request

```

GET /agreementSpecification/1140
Content-Type: application/json

```

## Response

```

200

{
  "@type": "AgreementSpecification",
  "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
  "id": "1140",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "Approved",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "2.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {
      "@type": "CharacteristicSpecification",
      "name": "fidelityProgram",
      "configurable": true,
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "agreement expert",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
        "id": "2778",
        "name": "Jean Smith",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ]
}

```

## List or find AgreementSpecification objects

**GET** /agreementSpecification?fields=...

### Description

This operation list AgreementSpecification 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

TBD - not retrievable from API

### Request

```
GET /agreementSpecification
Content-Type: application/json
{}
```

## Response

```
200
```

## Creates a AgreementSpecification

**POST** /agreementSpecification?fields=...

## Description

This operation creates an AgreementSpecification entity.

## Mandatory Attributes

Mandatory Attributes	Rule
lastUpdate	
lifecycleStatus	
name	
@type	

## Usage samples

Here is an example of a request for creating an agreement specification.

## Request

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

{
  "@type": "AgreementSpecification",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "In progress",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "1.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {
      "@type": "CharacteristicSpecification",
      "name": "fidelityProgram",
      "configurable": true,
      "valueType": "string"
    }
  ]
}
```



```

    "relatedParty": [
      {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "agreement expert",
        "partyOrPartyRole": {
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
          "id": "2778",
          "name": "Jean Smith",
          "@type": "PartyRef",
          "@referredType": "Organization"
        }
      }
    ]
  }
}

```

## Response

```

201

{
  "@type": "AgreementSpecification",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "In progress",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "1.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {
      "@type": "CharacteristicSpecification",
      "name": "fidelityProgram",
      "configurable": true,
      "valueType": "string"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "agreement expert",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
        "id": "2778",
        "name": "Jean Smith",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ]
}

```

## Updates partially a AgreementSpecification

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

## Description

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

## Patchable and Non Patchable Attributes

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

Patchable Attributes	Rule
attachment	
category	
description	
externalIdentifier	
isBundle	
lifecycleStatus	
name	
relatedParty	
specificationCharacteristic	
specificationRelationship	
validFor	
version	

## Usage samples

Here is an example of a request for patching an agreement specification. In this example, the agreement specification status is set.

## Request

```
PATCH /agreementSpecification/1140
Content-Type: application/merge-patch+json
```

```
{
  "@type": "Agreement",
  "attachment": [
    {
      "@type": "Attachment",
      "name": "Detailed description of Moon template",
      "url": "https://www.allmydocs.fr/agreement_standard.pdf",
      "mimeType": "application/pdf"
    }
  ]
}
```

## Response

```
200

{
  "@type": "AgreementSpecification",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
  "id": "1140",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "Approved",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "2.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {
      "@type": "CharacteristicSpecification",
      "name": "fidelityProgram",
      "configurable": true,
      "valueType": "string"
    }
  ],
  "attachment": [
    {
      "@type": "Attachment",
      "name": "Detailed description of Moon template",
      "url": "https://www.allmydocs.fr/agreement_standard.pdf",
      "mimeType": "application/pdf"
    }
  ],
  "relatedParty": [
    {
      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "agreement expert",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-api/partyManagement/v5/individual/2778",
        "id": "2778",
        "name": "Jean Smith",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ]
}
```

```
}
```

Here is an example of a request for patching an agreement specification. In this example, the agreement specification status is set.

## Request

```
PATCH /agreementSpecification/1140
Content-Type: application/json

{
  "@type": "Agreement",
  "attachment": [
    {
      "@type": "Attachment",
      "name": "Detailed description of Moon template",
      "url": "https://www.allmydocs.fr/agreement_standard.pdf",
      "mimeType": "application/pdf"
    }
  ]
}
```

## Response

```
200

{
  "@type": "AgreementSpecification",
  "href": "https://mycsp.com:8080/tmf-api/agreementManagement/v5/agreementSpecification/1140",
  "id": "1140",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "Approved",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "2.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {
      "@type": "CharacteristicSpecification",
      "name": "fidelityProgram",
      "configurable": true,
      "valueType": "string"
    }
  ],
  "attachment": [
    {
      "@type": "Attachment",
      "name": "Detailed description of Moon template",
      "url": "https://www.allmydocs.fr/agreement_standard.pdf",
      "mimeType": "application/pdf"
    }
  ],
  "relatedParty": [
    {

```

```

      "@type": "RelatedPartyRefOrPartyRoleRef",
      "role": "agreement expert",
      "partyOrPartyRole": {
        "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
        "id": "2778",
        "name": "Jean Smith",
        "@type": "PartyRef",
        "@referredType": "Organization"
      }
    }
  ]
}

```

Here is an example of a request for patching an agreement specification. In this example, a new version is set, together with validity period.

### Request

```

PATCH /agreementSpecification/1140
Content-Type: application/json-patch+json

[
  {
    "op": "replace",
    "path": "version",
    "value": "2.0"
  },
  {
    "op": "replace",
    "path": "validFor",
    "value": {
      "startDateTime": "2018-06-12T00:00:00Z",
      "endDateTime": "2020-01-11T00:00:00Z"
    }
  }
]

```

### Response

```

200

{
  "@type": "AgreementSpecification",
  "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
  "id": "1140",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "Approved",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "2.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2020-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {

```

```

        "@type": "CharacteristicSpecification",
        "name": "fidelityProgram",
        "configurable": true,
        "valueType": "string"
      },
    ],
    "relatedParty": [
      {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "agreement expert",
        "partyOrPartyRole": {
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
          "id": "2778",
          "name": "Jean Smith",
          "@type": "PartyRef",
          "@referredType": "Organization"
        }
      }
    ]
  }
}

```

Here is an example of a request for patching an agreement specification. In this example, role of related party is adjusted.

### Request

```

PATCH /agreementSpecification/1140
Content-Type: application/json-patch-query+json

[
  {
    "op": "replace",
    "path": "/relatedParty/role?/relatedParty/partyOrPartyRole/id=2778",
    "value": "Agreement Authority"
  }
]

```

### Response

```

200

{
  "@type": "AgreementSpecification",
  "href": "https://mycsp.com:8080/tmf-
api/agreementManagement/v5/agreementSpecification/1140",
  "id": "1140",
  "name": "Moon Agreement Template",
  "lifecycleStatus": "Approved",
  "lastUpdate": "2018-06-05T00:00:00Z",
  "version": "2.0",
  "validFor": {
    "startDateTime": "2018-06-12T00:00:00Z",
    "endDateTime": "2019-01-11T00:00:00Z"
  },
  "specificationCharacteristic": [
    {

```

```
        "@type": "CharacteristicSpecification",
        "name": "fidelityProgram",
        "configurable": true,
        "valueType": "string"
      },
    ],
    "relatedParty": [
      {
        "@type": "RelatedPartyRefOrPartyRoleRef",
        "role": "Agreement Authority",
        "partyOrPartyRole": {
          "href": "https://mycsp.com:8080/tmf-
api/partyManagement/v5/individual/2778",
          "id": "2778",
          "name": "Jean Smith",
          "@type": "PartyRef",
          "@referredType": "Organization"
        }
      }
    ]
  }
}
```

## Deletes a AgreementSpecification

**DELETE** /agreementSpecification/{id}

### Description

This operation deletes an AgreementSpecification entity.

# 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
Release 1.0	15/04/2016	Pierre Gauthier TM Forum <a href="mailto:pgauthier@tmforum.org">pgauthier@tmforum.org</a>  Mariano Belaunde Orange <a href="mailto:mariano.belaunde@orange.com">mariano.belaunde@orange.com</a>	First Release of the Document. Generated from the API Data Model.
Release 2.0	24/04/2018	Mariano Belaunde	Update with minor changes to comply with Guidelines V3.0
Release 4.0	30/05/2019	Mariano Belaunde Orange Labs	Regeneration after schematization
Release 5.0	01/09/2024	Jonathan Goldberg	Update to version 5

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