TM Forum Specification

Document Management API REST Specification

TMF667
Release 17.0.1
November 2017

Latest Update: TM Forum Release 17	TM Forum Approved
Version 2.0.1	IPR Mode: RAND

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INTRODUCTION

The following document is intended to provide details of the REST API interface for Document Management. The intent of this API is to provide a consistent/standardized mechanism to create new documents, delete existing documents, retrieving information about uploaded documents.

Examples of Documents handled by the Document service include scanned passport details or other identification documents, Agreement documents, Customer Bill, etc

The query capabilities provided by this service will serve links (location references) as well as retrieve documents as binary objects.

Type of files that will be supported as binary objects are:

- Images (e.g TIFF, PNG, GIF..)
- Document types: PDF, TXT, PPT, DOC and PS
- Archive : ZIP, TAR
- Data formats:NC (netCDF).

SAMPLE USE CASES

Retrieve all the documents stored for a Customer

The Document Management API can be used to retrieve all the identification documents stored for a Customer in a Document Management system.

Upload a document in a Document Management System

The Document Management API can be used to upload a document in a Document Management System.

It can be an identification document during customer order capture or it can be a quote that was produced for a customer during Quote Management processes.

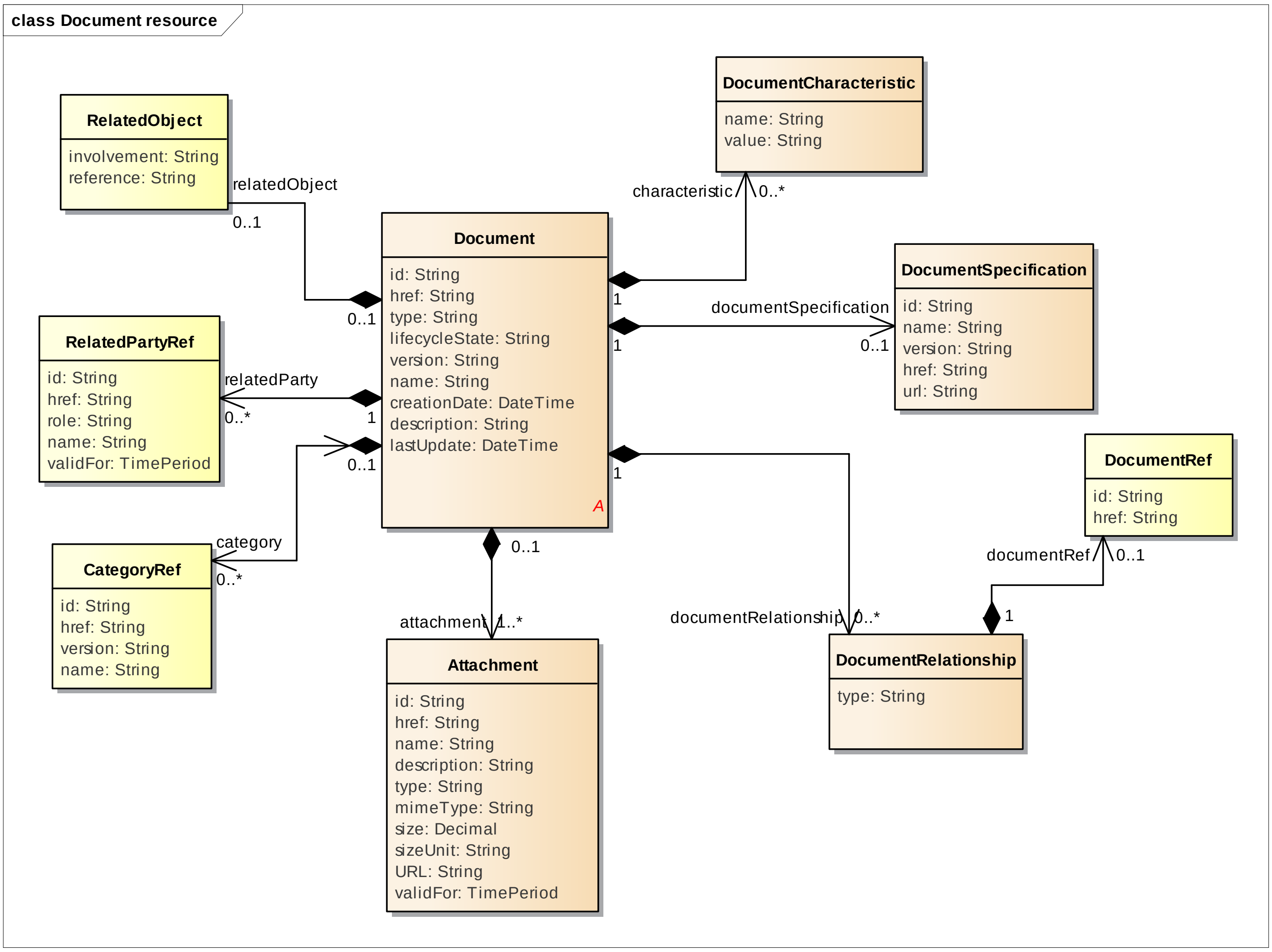
RESOURCE MODEL

Managed Entity and Task Resource Models

DOCUMENT RESOURCE

Document is a tangible output from an activity. It is an attachment for other API's. The document itself can be provided as a message payload or attachment, or as a location reference (URL).

Resource model



Lifecycle

No state machine for the resources detailed in this API.

Field descriptions

Document fields

href	A string. Reference of the document.
id	A string. "id" is the ID created for the document.
name	A string. "name" is the name of the document.
description	A string. Description of the document
lifecycleState	A string. The life cycle state of the document
type	A string. Name of the document type. E.g invoice, quote..etc
category	Reference to the category. A set of classifications for the document types.
version	A string. The version of the document.
creationDate	The date and time the document was created. A date and time formatted in compliance with the ISO8601 standard must be used.
lastUpdate	The date and time the document was last modified. A date and time formatted in compliance with the ISO8601 standard must be used.
documentRelationship	A list of resource relationships (DocumentRelationship [*]). Describes links with other documents.
documentSpecification	A document specification reference (DocumentSpecification).
relatedParty	A list of related party references (RelatedPartyRef [1..*]). A related party defines party or party role linked to a specific entity.
documentCharacteristic	A list of document characteristics (DocumentCharacteristic [*]). is a list of name value pairs that define the document characteristics.
relatedObject	Object related to the Document.
attachment	Attachment refers to extensions or additional parts that is or may be attached to something (agreements, contracts, appointments) to perform a particular function. They can be communication attachments, documents and other.

Attachment fields

Attachment refers to extensions or additional parts that is or may be attached to something (agreements, contracts, appointments) to perform a particular function. They can be communication attachments, documents and other.

id	A string. Identifier of the attachment
name	A string. Name of the attachment
type	A string. Identifies the sub-type of the instance of attachment
description	A string. Free-text description of the attachment.
size	A decimal. The size in Bytes of the document or attachment. If this component contains the embedded data then the size is the size of the embedded data; if it is a reference without the data then it is the size of the referenced document.
mimeType	A string. The mimeType of the attachment.
sizeUnit	A string. The unit of measure for the size.
URL	A string. The URL of the attachment.
validFor	A TimePeriod. The period for which the Attachment is valid.

DocumentSpecification fields

href	A string. Reference of the DocumentSpecification.
id	A string. Unique identifier of the DocumentSpecification.
name	A string. Name of the required DocumentSpecification.
version	A string. Service specification version.
URL	A string. Url of the DocumentSpecification.

DocumentCharacteristic sub-resource fields

is a list of name value pairs that define the document characteristics.

name	A string. Name of the characteristic.

value	A string (String). Value of the characteristic.

DocumentRelationship sub-resource

Describes links with other documents

type	A string. Describes links with other resource
DocumentRef	A document reference (DocumentRef). Useful to link document.

RelatedPartyRef relationship

RelatedParty reference. A related party defines party or party role linked to a specific entity.

href	A string. Reference of the related party, could be a party reference or a party role reference.
id	A string. Unique identifier of a related party.
name	A string. Name of the related party.
role	A string. Role of the related party.
validFor	A time period. Validity period of the related party.

CategoryRef relationship

Category reference. The category resource is used to group product offerings, service and resource candidates in logical containers. Categories can contain other categories and/or product offerings, resource or service candidates.

href	A string. Reference of the category.
id	A string. Unique identifier of a category
name	A string. Name of the category
version	A string. Version of the category.

RelatedObject relationship

Describes links with other objects.

involvement	A string. Describes the involvement to the related object.

reference	Identifier of the object.

Json representation sample

We provide below the json representation of an example of a Document resource object:

```
{
        "id": "42",
        "href": "http://server:port/documentManagement/document/42",
        "type": "Invoice",
        "lifecyleState": "Active ",
        "documentSpecification": {
                "id": "4",
                "href": " http://server:port/documentManagement/documentSpecification/4"
        },
        "documentCharacteristic": [{
                "name": "name of the characteristic",
                "value": "value of the characteristic"
        }],
        "documentRelationship": [{
                "type": "contains",
                "document": {
                        "id": "44",
                        "href": " http://server:port/documentManagement/document/44"
                }
        }],
        "attachment": [{
                "size": "123.0",
                "sizeUnit": "bytes",
                "mimeType": "application/pdf",
                "URL": "/ documentManagement / document /document.pdf "
        }],
        "relatedParty": [{
                "role": "customer",
                "id": "42",
                "href": "http://serverlocation:port/customerManagement/customer/42"
        }],
        "relatedObject": {
                "involvement": "related",
                "reference": "http: //serverlocation:port/billingManagement/customerBill/42"
        }


}
```

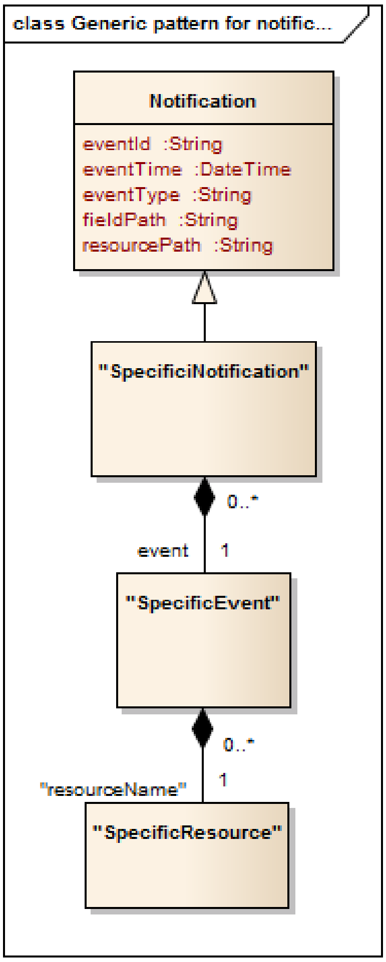
Notification Resource Models

5 notifications are defined for this API

Notifications related to Service:

- DocumentCreationNotification
- DocumentAttributeValueChangeNotification
- DocumentStateChangeNotification
- DocumentBatchNotification
- DocumentRemoveNotification

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



DOCUMENT CREATION NOTIFICATION

Notification sent when a new Document resource is created.

Json representation sample

We provide below the json representation of an example of a 'DocumentCreationNotification' notification object.

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"DocumentCreationNotification",
    "event": {
      "document" :
         {-- SEE document resource SAMPLE --}
   }
}
```

DOCUMENT ATTRIBUTE VALUE CHANGE NOTIFICATION

Notification sent when changing an attribute of a Document resource.

Json representation sample

We provide below the json representation of an example of a 'DocumentAttributeValueChangeNotification' notification object.

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"DocumentAttributeValueChangeNotification",
    "event": {
      "document" :
         {-- SEE Document RESOURCE SAMPLE --}
   }
}
```

DOCUMENT STATE CHANGE NOTIFICATION

Notification sent when changing the state of a Document Resource.

Json representation sample

We provide below the json representation of an example of a 'DocumentStateChangeNotification' notification object.

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"DocumentStateChangeNotification",
    "event": {
      "document" :
         {-- SEE Document RESOURCE SAMPLE --}
   }
}
```

DOCUMENT REMOVE NOTIFICATION

Notification sent when removing a Document resource.

Json representation sample

We provide below the json representation of an example of a ‘DocumentRemoveNotification' notification object.

```
{
   "eventId":"00001",
   "eventTime":"2015-11-16T16:42:25-04:00",
   "eventType":"DocumentRemoveNotification",
    "event": {
      "document" :
         {-- SEE Document RESOURCE SAMPLE --}
   }
}
```

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 RESOURCE

LIST DOCUMENT

```
GET /document?fields=...&{filtering}
```

Description

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

Usage Samples

Here's an example of a request for retrieving document resources.

Request

```
GET /documentManagement/document?type="invoice"&relatedParty.id=42
Accept: application/json
```

Response

```
    [
{
        "id": "42",
        "href": "http://server:port/documentManagement/document/42",
        "type": "Invoice",
        "lifecyleState": "Active ",
        "documentSpecification": {
            "id": "4",
            "href": " http://server:port/documentManagement/documentSpecification/4"
        },
        "documentCharacteristic": [{
            "name": "name of the characteristic",
            "value": "value of the characteristic"
        }],
        "documentRelationship": [{
            "type": "contains",
            "document": {
                "id": "44",
                "href": " http://server:port/documentManagement/document/44"
            }
        }],
        "attachment": [{
            "size": "123.0",
            "sizeUnit": "bytes",
            "mimeType": "application/pdf",
            "URL": "/ documentManagement / document /document.pdf "
        }],
        "relatedParty": [{
            "role": "customer",
            "id": "42",
            "href": "http://serverlocation:port/customerManagement/customer/42"
```

```
                        }],
                        "relatedObject": {
                                    "involvement": "related",
                                    "reference": "http: //serverlocation:port/billingManagement/customerBill/42"
                        }



            }
]
```

RETRIEVE DOCUMENT

GET /document/{id}?fields=...&{filtering}

Description

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

Usage Samples

Here's an example of a request for retrieving a Document resource.

Request

```
GET /documentManagement/document/42
Accept: application/json
```

Response

```
200

{
                        "id": "42",
                        "href": "http://server:port/documentManagement/document/42",
                        "type": "Invoice",
                        "lifecyleState": "Active ",
                        "documentSpecification": {
                                    "id": "4",
                                    "href": " http://server:port/documentManagement/documentSpecification/4"
                        },
                        "documentCharacteristic": [{
                                    "name": "name of the characteristic",
                                    "value": "value of the characteristic"
                        }],
                        "documentRelationship": [{
```

```
                        "type": "contains",
                        "document": {
                                "id": "44",
                                "href": " http://server:port/documentManagement/document/44"
                        }
                }],
                "attachment": [{
                        "size": "123.0",
                        "sizeUnit": "bytes",
                        "mimeType": "application/pdf",
                        "URL": "/ documentManagement / document /document.pdf "
                }],
                "relatedParty": [{
                        "role": "customer",
                        "id": "42",
                        "href": "http://serverlocation:port/customerManagement/customer/42"
                }],
                "relatedObject": {
                        "involvement": "related",
                        "reference": "http: //serverlocation:port/billingManagement/customerBill/42"
                }


        }
```

CREATE DOCUMENT

POST /document

Description

This operation creates a document.

Mandatory and Non Mandatory Attributes

The following tables provides the list of mandatory and non mandatory attributes when creating a Document, including any possible rule conditions and applicable default values.

Mandatory Attributes	Rule
description	
type	
Attachment	

Non Mandatory Attributes	Default Value	Rule
name		
category		
version		
created		
lifecycleState		
documentRelationship		
documentSpecification		

relatedParty		
relatedObject		
documentCharacteristic		

Additional Rules

The following table provides additional rules indicating mandatory fields in sub-resources or relationships when creating a Document resource.

Context	Mandatory Sub-Attributes
documentSpecification	id, href
relatedParty	role, id or href
documentRelationship	type, Id OR href
relatedObject	involvement, reference
attachment	size, sizeUnit, mimeType

Usage Samples

Here's an example of a request for creating a Document resource. In this example the request only passes mandatory attributes.

Create a document of type invoice in a Document Management System.

Request

```
POST /documentManagement/document
Content-Type: application/json

{

              "description": "Description of the document",
              "type": "Type of the document",
             "Attachment": {
                          "size": "123.0",
                          "sizeUnit": "bytes",
                          "mimeType": "application/pdf",
                          "URL": "/ documentManagement / document /document.pdf "
                          }



}
```

Response

```
201

"{ JSON Resource Representation with every provided and default attribute}"
```

PATCH DOCUMENT

PATCH /document/{id}

Description

This operation allows partial updates of a document entity. Support of json/merge (https://tools.ietf.org/html/rfc7386) is mandatory, support of json/patch (http://tools.ietf.org/html/rfc5789) is optional.

Note: If the update operation yields to the creation of sub-resources or relationships, the same rules concerning mandatory sub-resource attributes and default value settings in the POST operation applies to the PATCH operation. Hence these tables are not repeated here.

Patchable and Non Patchable Attributes

The tables below provide the list of patchable and non patchable attributes, including constraint rules on their usage.

Patchable Attributes	Rule
name	
description	
category	
version	
lifecycleState	
type	
attachment	
documentRelationship	
documentSpecification	
relatedParty	
documentCharacteristic	

Non Patchable Attributes	Rule
id	
href	
creationDate	
lastUpdate	

Usage Samples

Here's an example of a request for patching a document resource.

Changing the document type (using json-patch)

Request

```
PATCH /documentManagement/document/42
Content-Type: application/json-patch+json
```

```
{
   "path": "/type",
   "value": "Bill",
   "op": "replace"
}
```

Response

```
201

{ Similar JSON as in GET response with type attribute  changed}
```

DELETE DOCUMENT

DELETE /document/{id}

Description

This operation deletes a document entity.

Usage Samples

Here's an example of a request for deleting a Document resource.

Request

```
DELETE /documentManagement/document/42
```

Response

```
204
```

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":null}
```

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.

ACKNOWLEDGMENTS

RELEASE HISTORY

Release Number	**Date**	**Release led by:**	**Description**
Release 1.0	04/15/2016	Pierre Gauthier TM Forum pgauthier@tmforum.org Nicoleta Stoica Vodafone Nicoleta.stoica@vodafone.com	
Release 2.0	06/19/2017	Pierre Gauthier TM Forum pgauthier@tmforum.org Nicoleta Stoica Vodafone Nicoleta.stoica@vodafone.com	Updates for Fx17
Release 17.0.1 Version 2.0.1	11/21/2017	Adrienne Walcott	Updated to reflect TM Forum Approved Status