

TM Forum Specification

Appointment API Conformance Profile

TMF646B

Release 18.0.0

June 2018

Latest Update: TM Forum Release 18.0.0	Member Evaluation
Version 1.0.1	IPR Mode: RAND

NOTICE

Copyright © TM Forum 2018. All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to TM FORUM, except as needed for the purpose of developing any document or deliverable produced by a TM FORUM Collaboration Project Team (in which case the rules applicable to copyrights, as set forth in the [TM FORUM IPR Policy](#), must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by TM FORUM or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and TM FORUM DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Direct inquiries to the TM Forum office:

4 Century Drive, Suite 100
Parsippany, NJ 07054, USA
Tel No. +1 973 944 5100
Fax No. +1 973 944 5110
TM Forum Web Page: www.tmforum.org

TABLE OF CONTENTS

NOTICE.....	2
TABLE OF CONTENTS	3
INTRODUCTION	4
API DESCRIPTION.....	5
RESOURCE MODEL CONFORMANCE	6
API MANDATORY AND OPTIONAL RESOURCES.....	6
Appointment MANDATORY AND OPTIONAL ATTRIBUTES	6
NOTIFICATION MODEL CONFORMANCE	10
API MANDATORY AND OPTIONAL NOTIFICATIONS.....	10
API OPERATIONS CONFORMANCE	11
API MANDATORY AND OPTIONAL OPERATIONS.....	11
API GET OPERATION CONFORMANCE.....	12
GET /appointment /appointment?fields=...&{filtering}	12
GET /appointment /appointment/{ID}?fields=...&{filtering}.....	12
API POST OPERATION CONFORMANCE.....	13
POST /appointment /appointment	13
API PATCH OPERATION CONFORMANCE	15
API DELETE OPERATION CONFORMANCE	16
API CONFORMANCE TEST SCENARIOS	17
Appointment resource TEST CASES.....	17
ACKNOWLEDGEMENTS	25
Version History	25
Release History	25

INTRODUCTION

The following document is the REST API Conformance for the Appointment API (TMF 646).

API DESCRIPTION

Appointment API is one of Pre-Ordering Management API Family. An Appointment is an arrangement to do something or meet someone at a particular time and place. It is previously made during an interaction or may be necessary to solve a customer problem or to deliver a product order item. The appointment API goal is to manage an appointment with all the necessary characteristics. First, the API consists in searching free slots based on given parameters. Then, the appointment is created. The appointment has characteristics such as nature of appointment, place of appointment...

Appointment API allows to:

- Retrieve available time slots depending on filter criteria before creating or rescheduling an appointment
- Retrieve an existing appointment or a collection of appointments
- Create an appointment
- Update an appointment to cancel or reschedule it for example
- Delete an appointment

RESOURCE MODEL CONFORMANCE

API MANDATORY AND OPTIONAL RESOURCES

Resource Name	Mandatory or Optional	Comments
Appointment	M	
SearchTimeSlot	O	

Appointment MANDATORY AND OPTIONAL ATTRIBUTES

The table below summarizes mandatory and optional attributes for resource "Appointment"

Attribute Name	Mandatory or Optional	Comments
id	M (in response messages) O (otherwise)	Initially generated by the server and provided in the response upon resource creation. Accepted in entity-creation request if the server supports the incoming identifier as the reference to create new resource
href	M (in response messages) O (otherwise)	Value in response must be the same as the one set in location header provided upon entity creation
externalId	O	
description	O	
category	O	
status	M (in response messages) O (otherwise)	Generated by the server and provided in the response upon resource creation
creationDate	M (in response messages) O (otherwise)	Refers to the date when the appointment entity was created in the server. Only required in the response messages from the server when providing the appointment entity content

Attribute Name		Mandatory or Optional	Comments
lastUpdate		M (in response messages) O (otherwise)	Date set by the server when a creation or update are performed on an appointment resource
validFor		M	A time period
	startDateTime	M	
	endDateTime	M	
@baseType		O	
@type		O	
@schemaLocation		O	
attachment		O	An Array of attachments
	id	O	
	href	O	
	name	O	
	description	O	
	contentType	O	
	sizeUnit	O	
	size	O	
	url	O	
	@type	O	
	@schemaLocation	O	
calendarEvent		O	
	id	M (if calendarEvent included and href not provided) O (otherwise)	
	href	M (if calendarEvent included and id not provided) O (otherwise)	
	description	O	
	@referencedType	O	
relatedParty		O	Array of structures At least one related party is necessary Can be optional if relatedParty is not known and can be

Attribute Name		Mandatory or Optional	Comments
			assigned later on. Anonymous appointments where never a related party will be assigned can also be possible.
	id	M (if relatedParty included and href not provided) O (otherwise)	
	href	M (if relatedParty included and id not provided) O (otherwise)	
	role	M	
	name	O	
	@referredType	O	
place		O	
	id	M (if href not provided) O (otherwise)	
	href	M (if id not provided) O (otherwise)	
	name	M	
	role	O	
	@referredType	O	
	@schemaLocation	O	
contactMedium		O	
	type	O	
	characteristic	O	Contact medium characteristic
	phoneNumber	M (if emailAddress not provided) O (otherwise)	
	emailAddress	M (if phoneNumber not provided) O (otherwise)	
	@type	O	
	@schemaLocation	O	
relatedEntity		O	Array of structures
	id	M (if relatedEntity included and href not provided)	

Attribute Name		Mandatory or Optional	Comments
		O (otherwise)	
	href	M (if relatedEntity included and id not provided) O (otherwise)	
	role	O	
	name	O	
	@referredType	M	
note		O	Array of notes
	date	M	
	author	O	
	text	M	

NOTIFICATION MODEL CONFORMANCE

The Pub/Sub models are common and described in the TMF REST Design Guidelines. Use the following templates to describe the Hub Mandatory and Optional attributes and filtering support.

API MANDATORY AND OPTIONAL NOTIFICATIONS

For the Notifications defined by the API the following table indicates which ones are mandatory and which ones are optional.

Notification Name	Mandatory or Optional	Comments
AppointmentCreationNotification	O	
AppointmentStateChangeNotification	O	
AppointmentAttributeValueChangeNotification	O	
AppointmentRemoveNotification	O	

All attributes of the resource associated with the notification are mandatory

API OPERATIONS CONFORMANCE

For every single resource use the following templates and define what operations are optional and what operations are mandatory.

API MANDATORY AND OPTIONAL OPERATIONS

The following table indicates which ones are mandatory and which ones are optional for each one of the resources in the API (default is for all resources).

Uniform API Operation	Mandatory/Optional	Comments
GET	M	GET must be used to retrieve a representation of a resource
POST	M	POST must be used to create a new resource
PUT	O	PUT must be used to completely update a resource identified by its resource URI
PATCH	O	PATCH must be used to partially update a resource
DELETE	O	DELETE must be used to remove a resource

API GET OPERATION CONFORMANCE

Definitions

Filtered Search: A filtered search can be applied using query parameters in order to obtain only the resource entities that meet the criteria defined by the filtering parameters included in the query request. Several elements can be applied to the filtered search. In that case logic, a logical AND is applied to combine the criteria (e.g.:?severity=<value> &status=<value>)

Filtered Data (Attribute selection): In order to apply a filter and limit the number of attributes included in the response, the GET request can include the “?fields=” query parameter. Several elements can be applied to the filter. In that case, a logical AND is applied to combine the values (e.g.:?fields=category,state) will provide in the response only the values assigned to attributes category and state. Attribute selection capabilities are the same for collections retrieval and individual resource queries

All the GET operations in this API share the same status code pattern.

GET	M	
Response Status Code 200	M	With JSON appointment objects as body response.
Response Status Code 404	M	When resource can't be found
Other Status Codes	NA	

GET /appointment /appointment?fields=...&{filtering}

This operation list appointment entities.

Attribute selection is enabled for all first level attributes.

Filtering is mandatory for appointment to avoid answer with too many appointment occurrences.

GET /appointment /appointment/{ID}?fields=...&{filtering}

This Uniform Contract operation is used to returns a specific appointment with given {ID}, where {ID} indicates the identifier assigned by the server when an appointment resource was created.

Attribute selection is mandatory for all first level attributes.

Filtering on sub-resources is optional for all compliance levels.

API POST OPERATION CONFORMANCE

All the POST operations in this API share the same status code pattern:

POST	M	
Response Status Code 201	M	
Other Status Codes	NA	

POST /appointment /appointment

This Uniform Contract operation is used to create an Appointment resource in the server.

The response to this operation must include a Location header set to /appointment/appointment/{ID} where {ID} indicates the identifier assigned by the server to the new appointment resource created

The following table indicates attributes that are required to be sent when creating a new appointment as well as attributes with special considerations. All other attributes defining the resource are not required to be sent as part of the BODY of the POST request message:

Attribute name	Mandatory	Default	Rule
status	N	initialized	
validFor.startDateTime	Y		
validFor.endDateTime	Y		
relatedParty.id or relatedParty.href	Y		for each related party provided
relatedParty.role	N		
relatedParty.name	N		
place	N		id or href must be provided
relatedEntity	N		id or href must be provided for each entity provided

The response from the server must include a BODY with the contents of the new resource created, filled with at least the same information elements that were included in the request and are supported by the server. Notice that the value stored by the server may be different than the one set in the request.

If the POST request includes optional parameters (as per the model resource definition) that are not supported by the server, then the server must reject the request (replying with a 4xx error response) indicating the parameter not supported.

The BODY of the response from the server must include attribute “href” set to the same value as the one in the Location header.

The server must include in the BODY of the response, even if they are not included in the request, the following attributes that are mandatory in the definition of an Appointment as per the resource model defined

- id
- href
- status

The BODY of the response from the server must include attribute “href” (or “reference”) under each one of the entities within the Appointment model that can be addressed individually and were included in the response. This applies to any of the following entities

- relatedParty
- relatedEntity
- calendarEvent
- place

API PATCH OPERATION CONFORMANCE

This section defines which attributes are patchable.

Since PATCH operation is optional and not included in the basic CONNECT certification this is not applicable in this conformance document.

API DELETE OPERATION CONFORMANCE

This section defines what operations can be used to delete an appointment resource.

Since DELETE operation is optional and not included in the basic CONNECT certification this is not applicable in this conformance document

API CONFORMANCE TEST SCENARIOS

This section describes the test scenarios required for the basic CONNECT certification of appointment API.

Test Cases must be executed in the order defined for each resource because the result from one of the scenarios will be input for the next one.

Requests must be addressed to the endpoint provided for certification, specifically they must be addressed to the URI defined by the concatenation of the {apiRoot} and the specific resource, where the {apiRoot} is defined as {serverRoot}/appointmentManagement/v1, being {serverRoot} defines the certification endpoint

Appointment resource TEST CASES

Nominal Scenarios

TC_Appointment_N1 – Check available time slots in a calendar

- Send a POST message to {apiRoot}/searchTimeSlot with the following contents in the BODY

```
{
  "validFor" : {
    "startDateTime": "2018-02-15T100:00:00.071Z",
    "endDateTime": "2018-02-18T00:00:00.071Z"
  },
  "place": {
    "role": "interventionAddress",
    "@referredType": "geographicAddress",
    "geographicAddress": {
      "streetNr": "96",
      "streetType": "avenue",
      "streetName": "de Versailles",
      "postCode": "75016",
      "city": "Paris",
      "country": "France"
    }
  }
}
```

- Wait for a response from the server with the following characteristics
 - Response Code 201-OK
 - The response message contains a list of available time slots.

TC_Appointment_N2 – Create new Appointment with minimum set of parameters supported by server

- Send a POST message to {apiRoot}/appointment with the following contents in the BODY:

```
{
  "category": "intervention",
  "description": "Fix an internet connexion problem for a customer",
  "validFor": {
    "startDateTime": "2018-02-15T14:00:00.071Z",
    "endDateTime": "2018-02-15T16:00:00.071Z"
  },
  "relatedParty": [
    {
      "id": "32",
      "href": "https://host:port/partyManagement/individual/32",
      "name": "Kate Smith",
      "role": "customer"
    },
    {
      "id": "56",
      "href": "https://host:port/partyManagement/individual/56",
      "name": "John Doe",
      "role": "technician"
    }
  ],
  "place": {
    "role": "interventionAddress",
    "@referredType": "geographicAddress",
    "geographicAddress": {
      "streetNr": "96",
      "streetType": "avenue",
      "streetName": "de Versailles",
      "postCode": "75016",
      "city": "Paris",
      "country": "France"
    }
  }
}
```

- Wait for a response from the server with the following characteristics:
 - Response Code 201-Created

- Include a location header in the body set to `/{apiRoot}/appointment/{IDAP1}` where {IDAP1} indicates the identifier assigned by the server to the new Appointment resource
 - The response message includes all mandatory parameters
 - The body of the response matches the values set in the original request
- Send a GET message to `/{apiRoot}/appointment/{IDAP1}`
 - Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes one appointment resource with ID set to {IDAP1}, the same identifier as assigned by the server to the new resource created
 - The response message includes all mandatory parameters
 - The body of the response for the resource with identifier {IDAP1} matches the values set in the original request

TC_Appointment_N3 – Create new Appointment with minimum set of parameters

- Send a POST message to `{apiRoot}/appointment` with the following contents in the BODY:

```
{
  "category": "customerProblem",
  "description": "Customer bill problem explanation",
  "validFor" : {
    "startDateTime": "2018-02-15T14:00:00.071Z",
    "endDateTime": "2018-02-15T15:00:00.071Z"
  },
  "relatedParty": [
    {
      "id": "32",
      "href": "https://host:port/partyManagement/individual/32",
      "name": "Kate Smith",
      "role": "customer"
    },
    {
```

```
"id":"62",
"href":"https://host:port/partyManagement/individual/62",
"name":"Adam Smith",
"role":"customerRepresentative"
}
],
"contactMedium":{
  "type":"phoneNumber",
  "characteristic":{
    "phoneNumber":"0901020304"
  }
}
}
}
```

- Wait for a response from the server with the following characteristics:
 - Response Code 201-Created
 - Include a location header in the body set to `/{apiRoot}/appointment/{IDAP2}` where `{IDAP2}` indicates the identifier assigned by the server to the new Appointment resource
 - The response message includes all mandatory parameters
 - The body of the response matches the values set in the original request
- Send a GET message to `/{apiRoot}/appointment/{IDAP2}`
- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes one appointment resource with ID set to `{IDAP2}`, the same identifier as assigned by the server to the new resource created
 - The response message includes all mandatory parameters
 - The body of the response for the resource with identifier `{IDAP2}` matches the values set in the original request

TC_Appointment_N4 – Search for Appointment with specific characteristics

- Send a GET message to `/{apiRoot}/appointment`
- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes at least two appointment resources referring to {IDAP1} and {IDAP2}
 - The body of the response for the resource with each identifier matches the values in the corresponding original request
- Send a GET message to `/{apiRoot}/appointment?relatedParty.id=56`
- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes one appointment resource referring to {IDAP1} and there is no reference to appointment resource {IDAP2}
 - The response message includes all mandatory parameters
 - The body of the response for the resource with identifier {IDAP1} matches the values in the original request
- Send a GET message to `/{apiRoot}/appointment?relatedParty.id=62`
- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes one appointment resource referring to {IDAP2} and there is no reference to appointment resource {IDAP1}
 - The response message includes all mandatory parameters
 - The body of the response for the resource with identifier {IDAP2} matches the values in the original request

TC_Appointment_N5 – Filtered retrieval of Appointment

- Send a GET message to
`/{apiRoot}/appointment/{IDAP1}?fields=id,state,validFor,relatedParty.id,relatedParty.name,relatedParty.role`
- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes one appointment resource referring to {IDAP1} and including only attributes appointment id, state and validFor, and an array of relatedParty with id, name and role.

TC_Appointment_N6 – Filtered Search and Filtered data response

- Send a GET message to
`/{apiRoot}/appointment?relatedParty.id=62&fields=id,state`
- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The body of the response includes one appointment resource referring to {IDAP2} and there is no reference to appointment resource {IDAP1}
 - The body of the response for the resource includes only attributes id and state, matching the values in the corresponding original request

Notice that this test case is using the parameter "relatedParty.id" to filter the data included in the response but any other parameter could be used.

TC_Appointment_N7 – Cancel an existing appointment

- Send a PATCH message to `/{apiRoot}/appointment/{IDAP1}` with the following contents in the body:

```
{
  "status":"cancelled"
}
```

- Wait for a response from the server with the following characteristics:
 - Response Code 200-OK
 - The response message contains a list of available slots that can be used for this appointment.

TC_Appointment_N8 – Delete an appointment

- Send a DELETE message to `/{apiRoot}/appointment/{IDAP1}`
- Wait for a response from the server with the following characteristics:
 - Response Code 204 - OK
- Send a GET message to `/{apiRoot}/appointment/{IDAP1}`
- Wait for a response from the server with the following characteristics:
 - Response Code 404 – NOT FOUND

Error Scenarios

TC_Appointment_E1 – Unknown Appointment identifier

- Send a GET message to `/{apiRoot}/appointment/{IDAP3}`, where {IDAP3} does not match any of the identifiers previously created in the server
- Wait for a response from the server with the following characteristics
 - Response Code 404-Not Found

TC_Appointment_E2 – Invalid Request – Missing mandatory parameter

- Send a POST message to `{apiRoot}/appointment` with the following contents in the BODY:

```
{
  "category":"intervention",
  "description":"Fix an internet connexion problem for a customer",
  "relatedParty": [
    {
      "id":"32",
```

```
"href":"https://host:port/partyManagement/individual/32",
"name":"Kate Smith",
"role":"customer"
},
{
  "id":"56",
  "href":"https://host:port/partyManagement/individual/56",
  "name":"John Doe",
  "role":"technician"
}
],
"place":{
  "role":"interventionAddress",
  "@referredType": "geographicAddress",
  "geographicAddress":{
    "streetNr":"96",
    "streetType": "avenue",
    "streetName": "de Versailles",
    "postCode": "75016",
    "city": "Paris",
    "country": "France"
  }
}
}
```

Notice that this request is missing a `validFor` but any other mandatory parameter could be used.

- Wait for an error response from the server indicating the mandatory parameter is missing in the request

ACKNOWLEDGEMENTS**VERSION HISTORY**

Version Number	Date	Release led by:	Description
1.0.0	10/04/2018	Orange Team	New, also incorporating API updates for release 18.0: new features from guidelines 3.0, remarks from SID mapping, remarks from NTS Retail API implementation
1.0.1	27-Jun-2018	Adrienne Walcott	Formatting/style edits prior to R18 publishing

RELEASE HISTORY

Release Number	Date	Release led by:	Description
Release 18.0.0	25-Jun-2018	Orange Team	Initial Release