



## *TM Forum Specification*

# Communication API Conformance Profile

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## INTRODUCTION

This document describes the REST API Conformance for the Communication API.

## API DESCRIPTION

This API provides a standardized mechanism for Communication management such as creation, update, retrieval, deletion and notification of the system communication events.

Communication API manages the following data resources:

- **Communication**

- o Communication means the system delivers a message to the final customer in the form and format which can be felt and understood by the customer. The message can reach the customer in different interaction channels, including: email, short message, mobile app notification (push).

Normally the communication is implemented as a common shared service for all the enterprise IT applications. Whenever there is an application which needs to send the message to the customer, this application can invoke the “communication” API to dispatch the notification.

Communication API performs the following operation on the resource of “Communication Message”.

- Retrieval of an existing Communication Message depending on filter criteria
- Creation of a new Communication message
- Send a message, including:
  - o Send a new message with the whole communication message body (POST operation)
  - o Send a message with the predefined communication message body (POST operation)
- Partial update of an existing Communication Message
- Deletion of an existing Communication Message
- Notification of events:
  - o Creation of Communication Message
  - o Updating Communication Message
  - o Deletion of Communication Message

This document identifies the parameters that must be included in a request related to the operations above as well as the parameters expected in the response.

The test scenarios in this document are intended to create a set of resources (Communication) and then retrieve the information stored in the server to confirm the resources created are stored with the values originally set. Additionally, some test scenarios are included to verify that the server replies with the corresponding error response in situations where a mandatory attribute is not included in the request.

## RESOURCE MODEL CONFORMANCE

### Communication API MANDATORY AND OPTIONAL RESOURCES

For the Resources defined by the API, here the following table indicates which are mandatory and which ones are optional.

Resource Name	Mandatory / Optional	Comments
Communication Message	M	

### Communication Message Resource MANDATORY AND OPTIONAL ATTRIBUTES

For every single resource managed by the API, please refer to the following table indicating which attributes are mandatory and which ones are optional.

Parameter	Mandatory/Optional	Comments
@type	O	
@schemaLocation	O	
@baseType	O	
Id	M (in response messages) O (otherwise)	Generated by the server and provided in the response upon resource creation. Accepted in entity-creation requests if the server supports the incoming identifier as the reference to create new resources.
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
Priority	O	
Type	M	
Subject	O	
Content	M	
SendTime	O	

sendTimeComplete	O	
status	O	
description	O	
logFlag	O	
callbackFlag	O	
tryTimes	O	
<b>CommunicationRequestCharacteristic</b>	<b>O</b>	<b>List of parameters. (CommunicationRequestCharacteristic[*])</b>
name	M	
value	M	
<b>Sender</b>	<b>M</b>	
email	O	
Id	O	
name	O	
phoneNumber	O	
<b>Receiver</b>	<b>M</b>	<b>List of receivers(Receiver[*])</b>
appUserId	O	
email	O	
Id	O	
Ip	O	
Name	O	
phoneNumber	O	
<b>RelatedParty</b>	<b>O</b>	
Id	M	



Href	M	
Name	M	
Role	M	
validFor	O	
<b>Attachment</b>		<b>List of attachments(Attachment[*])</b>
name	M	
Path	M	
description	O	
Href	O	
mimeType	O	
size	O	
sizeUnit	O	
URL	O	
validFor	O	

## API OPERATIONS CONFORMANCE

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

### Communication MANDATORY AND OPTIONAL OPERATIONS

Fill the following table and indicate which ones are mandatory and which ones are optional.

Uniform API Operation	Mandatory/Optional	Comments
GET (Retrieve)	M	GET must be used to retrieve a representation of a resource
POST	M	POST must be used to create a new resource
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

For every single resource, use the following template to specify the mandatory and optional features supported by the GET operation.

GET	O	THIS PATCH OPERATION
Status Code 200	M	
Other Status Codes	NA	

### GET /communicationMessage/{id}?fields=...&{filtering}

#### 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=severity, status) will provide in the response only the values assigned to attributes category and channel. Attribute selection capabilities are the same for collections retrieval and individual resource queries

The following table indicates attributes that are required to be sent

Note: “M” means mandatory, “O” means optional, “NA” means this attribute is not required.

Attribute name	Filtered search First Level	Attribute Selection First Level
Id	O	M
Href	NA	M
Priority	O	O
Type	O	O

Attribute name	Filtered search First Level	Attribute Selection First Level
Subject	<input type="radio"/>	<input type="radio"/>
Content	<input type="radio"/>	<input type="radio"/>
description	<input type="radio"/>	<input type="radio"/>
logFlag	<input type="radio"/>	<input type="radio"/>
callbackFlag	<input type="radio"/>	<input type="radio"/>
tryTimes	<input type="radio"/>	<input type="radio"/>
sendTimeComplete	<input type="radio"/>	<input type="radio"/>
SendTime	<input type="radio"/>	<input type="radio"/>
<b>Communication RequestCharacteristic</b>	NA	NA
<b>Sender</b>	<input type="radio"/>	<input type="radio"/>
<b>Receiver</b>	<input type="radio"/>	<input type="radio"/>
<b>Attachment</b>	NA	NA

## API POST OPERATION CONFORMANCE

For every single resource, use the following template to specify the mandatory and optional features supported by the POST operation.

### POST /communicationMessage

This operation is used to create a managed entity for Communication.

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

POST	M
Status Code 201	M
Other Status Codes	NA

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

Attribute name	Mandatory/Option
Priority	O
Type	M
Subject	O
Content	M
SendTime	O
<b>CommunicationRequestCharacteristic</b>	<b>O</b>
<b>Sender</b>	<b>M</b>
<b>Receiver</b>	<b>M</b>

Attribute name	Mandatory/Option
<b>Attachment</b>	O

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 are included in the request and are supported by the server.

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.

## POST/communicationMessage/send

This operation is used to send a new Communication message from the “sender” to the “receiver”.

The response to this operation must include the status code to indicate whether the “sending” is successful or not.

POST	M
Status Code 200	M
Other Status Codes	NA

The following table indicates attributes that are required to be sent when “sending” a new Communication resource as well as attributes with special considerations.

All other attributes defining the resource are not required to be sent as a part of the BODY of the POST request message.

Attribute name	Mandatory/Option
Priority	O
Type	M
Subject	O

Attribute name	Mandatory/Option
Content	M
SendTime	O
<b>CommunicationRequestCharacteristic</b>	<b>O</b>
<b>Sender</b>	<b>M</b>
<b>Receiver</b>	<b>M</b>
<b>Attachment</b>	<b>O</b>

## POST /communicationMessage/{id}/send

This operation is used to send a pre-defined communication message from the “sender” to the “receiver”. In this mode, the message body should be created in advance. The “Communication Message Creation” needs to be invoked firstly, so the system can send the pre-defined message.

The response to this operation must include the status code to indicate whether the “sending” is successful or not.

POST	M
Status Code 200	M
Other Status Codes	NA

The request needs to contain the ID of an existing communication message.

Attribute name	Mandatory/Option
id	M

## API PATCH OPERATION CONFORMANCE

### PATCH /communicationMessage/{id}

This patch operation is used to partially update the representation of a managed entity for communication.

PATCH	O	THIS PATCH OPERATION
Status Code 200	M	
Other Status Codes	NA	

The mandatory and optional attributes of the API are same as the following:

Attribute name	Patchable
id	N
href	N
Priority	Y
sendTimeComplete	Y
status	Y
description	Y
logFlag	Y
callbackFlag	Y
tryTimes	Y
Type	N
Subject	Y
Content	Y
SendTime	Y



Attribute name	Patchable
<b><i>CommunicationRequestCharacteristic</i></b>	Y
<b><i>Sender</i></b>	Y
<b><i>Receiver</i></b>	Y
<b><i>Attachment</i></b>	Y

## API DELETE OPERATION CONFORMANCE

## DELETE /communicationMessage/{id}

This operation is used to remove the representation of a managed entity for Communication.

For this operation, only the “id” field is mandatory for the client of the API. All other fields are not required.

DELETE	O	THIS PATCH OPERATION
Status Code 200	M	
Other Status Codes	NA	

## 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.

### Communication API MANDATORY AND OPTIONAL NOTIFICATIONS

For the Notifications defined by the API, it is filled in the following table to indicate which ones are mandatory and which ones are optional.

All notifications are optional.

Resource Name	Mandatory or Optional	Comments
CommunicationMessageCreationNotification	O	
CommunicationMessageDeletionNotification	O	
CommunicationMessageUpdateNotification	O	

## ADMINISTRATIVE APPENDIX

### VERSION HISTORY

Version Number	Date	Modified by	Description
Version 1.0.0	8/05/2017	Ma Xu <a href="mailto:Maxu@huawei.com">Maxu@huawei.com</a>  Hongxia Hao <a href="mailto:haohongxia@huawei.com">haohongxia@huawei.com</a>	initial version
Version 1.01	14-Jun-2017		Updated version
Version 1.02	9-Sep-2017	Hongxia Hao <a href="mailto:haohongxia@huawei.com">haohongxia@huawei.com</a>  Ma Xu <a href="mailto:Maxu@huawei.com">Maxu@huawei.com</a>	Align with the newest specification document
Version 1.0.3	23-Jan-2018	Adrienne Walcott	Formatting/style edits prior to publishing

### RELEASE HISTORY

Release Number	Date	Release led by:	Description
17.5.0	January 2018	Hongxia Hao, Ma Xu	Initial Release

### ACKNOWLEDGMENTS

This document was reviewed by members of the TM Forum API Program team.

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