***Frameworx Specification***

**Quote API REST Specification**

**TMF648**

**Release 16.0.0**

**April 2016**

|  |  |
| --- | --- |
| **Latest Update: Frameworx Release 16** | **Member Evaluation** |
| **Version 2.1.1** | **IPR Mode: RAND** |

# NOTICE

Copyright © TM Forum 2016. 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](http://www.tmforum.org/IPRPolicy/11525/home.html), 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:

240 Headquarters Plaza,

East Tower – 10th Floor,

Morristown, NJ  07960 USA

Tel No.  +1 973 944 5100

Fax No.  +1 973 944 5110

TM Forum Web Page: [www.tmforum.org](http://www.tmforum.org/)

# Table of Contents

[NOTICE 2](#_Toc453684821)

[Table of Contents 3](#_Toc453684822)

[List of Tables 5](#_Toc453684823)

[Introduction 6](#_Toc453684824)

[SAMPLE USE CASES 7](#_Toc453684825)

[RESOURCE MODEL 8](#_Toc453684826)

[Managed Entity and Task Resource Models 8](#_Toc453684827)

[Quote lifecycle 8](#_Toc453684828)

[Quote 10](#_Toc453684829)

[Notification Resource Models 21](#_Toc453684830)

[Quote Creation Notification 22](#_Toc453684831)

[Quote Remove Notification 27](#_Toc453684832)

[Quote State change Notification 28](#_Toc453684833)

[Quote Value Notification 28](#_Toc453684834)

[QUOTE Information Required Notification 29](#_Toc453684835)

[QUOTE APPROVAL REquIRED Required Notification 29](#_Toc453684836)

[QUOTE AGREEMENT SIGNUP REquIRED Notification 34](#_Toc453684837)

[API OPERATION TEMPLATES 39](#_Toc453684838)

[GET /quoteManagement/quote/{ID} 39](#_Toc453684839)

[GET /quoteManagement/quote?{field selector}&{filtering expression} 47](#_Toc453684840)

[PATCH /quoteManagement/quote/{ID} 54](#_Toc453684841)

[POST /quoteManagement/quote 64](#_Toc453684842)

[DELETE quoteManagement/Quote/{ID} 70](#_Toc453684843)

[API NOTIFICATIOn TEMPLATES 71](#_Toc453684844)

[REGISTER LISTENER POST /hub 71](#_Toc453684845)

[UNREGISTER LISTENER DELETE hub/{id} 71](#_Toc453684846)

[publish {EventTYPE} POST /listener 72](#_Toc453684847)

[ACKNOWLEDGMENTS 74](#_Toc453684848)

[VERSION HISTORY 74](#_Toc453684849)

[Release History 74](#_Toc453684850)

[Contributors to Document 74](#_Toc453684851)

# List of Tables

N/A

# Introduction

The following document is the specification of the REST API for customer quote management. It includes the model definition as well as all available operations. Possible actions are creating, updating and retrieving customer quotes.

The customer Quote API provides a standardized mechanism for placing a customer quote with all of the necessary quote parameters. The API consists of a simple set of operations that interact with CRM/Order Negotiation systems in a consistent manner. A customer quote is created based on a product offer that is defined in a catalog. The quote identifies the product or set of products that are available to a customer, and includes characteristics such as pricing (eventually special pricing for the customer described in the quote), product options and agreement.

Supplier Quote is not managed in the scope of this document.

Quote API performs the following operations on customer quote:

* Retrieval of a customer quote or a collection of customer quote depending on filter criteria
* Partial update of a customer quote (including updating rules)
* Creation of a customer quote (including versioning, default values and creation rules)
* Deletion of customer quote (for administration purposes)
* Notification of events on quote
  + Quote creation
  + Quote removal
  + Quote state change
  + Quote value change used to notify that any data in an quote has just changed
  + Quote information required used to notify that some data in the quote need to be filled / are missing
  + Quote is a pending state waiting approval (for the whole quote or only for quote item)
  + quote is accepted by the customer but there is a least one agreement to be signed

The following Assumptions were considered in the development of this document:

* The customer quote management system has access to the commercial catalog system.

# SAMPLE USE CASES

The following table maps out the UC case with Internal/External actors. An internal actor is a representative of the ISP – an external is typically a representative of the prospect/customer.

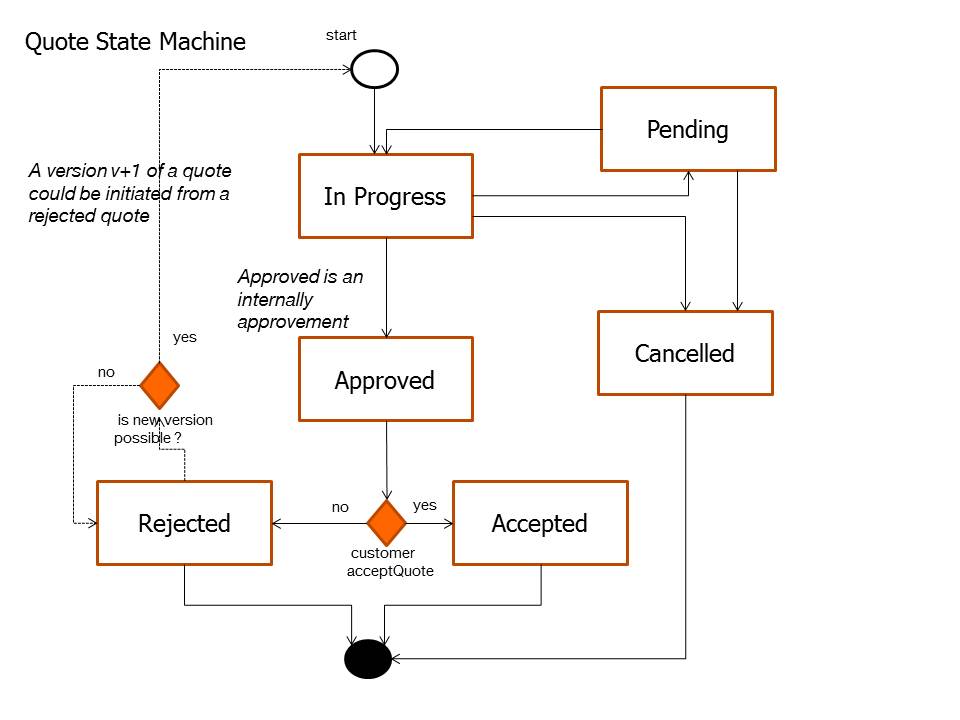
|  |  |  |
| --- | --- | --- |
| **UC** | **Actor** | **Rule** |
| A new quote or a new version of a quote is created | Operator/Operator Partner  Customer | A quote could be initialized by the customer who ask quotation for a set of offerings. |
| An existing quote should be updated or validated before sent to the customer | Operator/Operator Partner  Customer | Quote in status *In Progress* or *Pending* |
| An existing quote should be updated after submission to the customer | Operator/Operator Partner  Customer | Only status could be updated |
| a quote or a collection of quotes should be retrieved | Operator/Operator Partner  Customer | For an external access special checks and conditions are required (quote status, fields retrieved) |
| For technical reasons a quote should be removed | Internal |  |

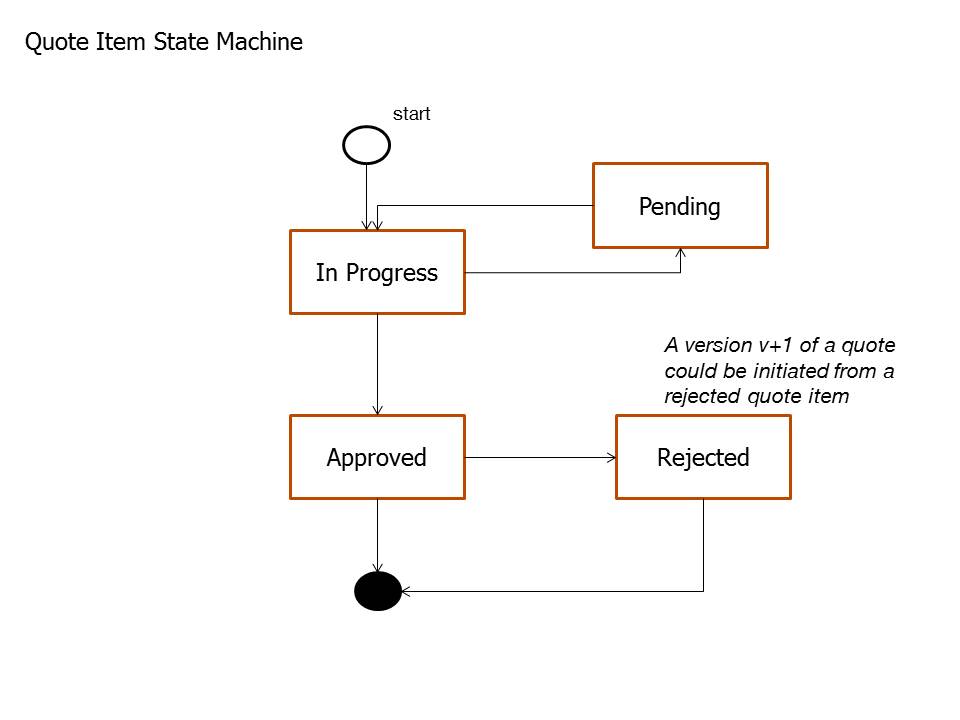
# RESOURCE MODEL

## Managed Entity and Task Resource Models

### Quote lifecycle

Here is the state machine diagram for a Quote and for Quote item. Each quote states are described in the tab below.





Note that the quote and quote item states are tightly linked and need to be consistent:

|  |  |
| --- | --- |
| **Quote status** | **Quote item status eligible** |
| In Progress | In Progress |
| Pending | Pending  In Progress |
| Validated | Validated |
| Cancelled | Pending  In Progress |
| Accepted | Validated |
| Rejected | Validated  Rejected |

|  |  |
| --- | --- |
| Quote State | Significance |
| In Progress | The *In Progress* state is when the quote is currently in the hands of the SP sales team to build it regarding customer requirements. The quote is under construction and needs more information. Everything should be updatable in this state |
| Pending | The *Pending* state is used when a quote needs to be validated from the SP perspective for tariff validation or to capture detailed information. The *Pending* state could be only for some quote items. |
| Approved | The *Approved* state is where the quote has been internally approved and sent to the customer. The quote is no longer updatable. |
| Cancelled | The *Cancelled* state is when the quote process is stopped from a SP decision. A *cancelled* quote has never been send to the customer. |
| Accepted | The *Accepted* state is used when the customer agreed to commit to the order and signed the quote. |
| Rejected | The *Rejected* state is used when the customer does not wish to progress with the quotation. It could his final decision and no other quote will be initiated from this quote or it could be during negotiation phase and a new quote version is triggered from this quote. This new version of the quote is created with the *in Progress* state. |

|  |  |
| --- | --- |
| Quote Item State | Significance |
| In Progress | The *In Progress* state is when the quote item is currently in the hands of the SP sales team to build it regarding customer requirements. The quote item is under construction and should need more information. Everything should be updatable in this state |
| Pending | The *Pending* state is used when a quote item needs to be validated from the SP perspective for tariff validation or to capture detailed information. |
| Approved | The *Approved* state is where the quote has been internally approved and sent to the customer. When the quote is shifted to the Approved state, all quote item are marked as Approved |
| Rejected | The *Rejected* state is used when the customer does not wish to progress with the quotation. It could be for the whole quote or for only some quote item. If at least one quote item is rejected the quote is rejected.  At the quote level it could his final decision and no other quote will be initiated from this quote or it could be during negotiation phase and a new quote version is triggered from this quote. All quote item will be set as *In Progress* in this new version. |

### Quote

Here under a quote composed of 4 quote lines (quoteItems):

The quote is valid for one week from now.

* Line “1”: quoting of a ‘TMF Voice Extra’ mobile plans – Catalog price ($35.00 per month)
* Line “2”: quoting of a mobile SamPhone i5s terminal – a specific discount to this customer is awarded (-10% of the handset catalog price) . The phone will be for Samantha, Bill’s wife.
* Line “3”: a ‘TMF Fiber+’ leased line from customer Site A to Site B (based on the speed and the length) – Catalog price
* Line “4”: quoting of a “TM TV+” bundled product composed of two atomic products (Movie and Sport channel) – Price is override (instead of $29.99 per month it will $23.87) for the bundle

Additionally a 5% discount is awarded globally on this quote for all recurring charges.

Customer is Joe Doe. The sale representative in charge of the quote is Bill Dupont. Bill needs Shinoju White approval for the global discount as well for the handset discount.

A standard disclaimer agreement is added for the leased line. It is attached to the quote.

|  |  |
| --- | --- |
| |  | | --- | | {  "id":"42",  "href":"http://serverlocation:port/quoteManagement/Quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description":"A wonderful 42 quote for brand new products",  "category":"corporate",  "state":"Approved",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"1",  "state":"Approved",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/TMFVoiceEXtraRationale.pdf",  "type":"pdf"  },  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "productOffering":{  "id":"198",  "href":"http: //serverlocation: port/catalogManagement/productOffering/198"  },  "product":{  }  },  {  "id":"2",  "state":"Approved",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },  {  "id":"3",  "state":"Approved",  "note":[  {  "text":"The leased line should be directly plugged from Joe’s Office",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "productOffering":{  "id":" TMF Fiber+",  "href":"http: //serverlocation: port/catalogManagement/productOffering/TMFFiber+"  },  "product":{  "productCharacteristic":[  {  "name":"Speed",  "value":"100 Mo/s"  },  {  "name":"Site A",  "value":"12 Dupont Circle, 34511 Washington DC"  },  {  "name":"Site B",  "value":"436 25th Avenue, 34507 Washington DC"  }  ]  }  },  {  "id":"4",  "state":"Approved",  "itemQuoteProductOfferingPrice":[  {  "itemQuotePriceAlteration":{  "name":"Discount on Bundle TV channel",  "description":"Movie + sport is so fun",  "validFor":{  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "override":23.87  },  "recurringChargePeriod":"monthly",  "priceCondition":""  }  }  ],  "productOffering":{  "id":"TM TV+",  "href":"http://serverlocation:port/catalogManagement/productOffering/BundleTMTV+",  "bundledProductOffering":[  {  "id":" Sport TV Channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/SportChannel"  },  {  "id":" Movie TV channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/MovieChannel"  }  ]  }  }  ]  } | |

Field Descriptions:

Quote: is a quote which can be used to negotiate service and product acquisition or modification between a customer and a service provider.

|  |  |
| --- | --- |
| Field | Description |
| id | ID attributed by quoting system |
| href | Hyperlink to access the quote |
| externalId | ID given by the consumer and only understandable by him (to facilitate his searches afterwards) |
| description | Description of the quote |
| category | Used to categorize the quote from a business perspective that can be useful for the CRM system (e.g. “enterprise”, “residential”, ...) |
| state | State of the quote : described in the state-machine diagram above |
| version | Quote version because if the customer rejected the quote but negociations still open a new version of the quote is managed |
| quoteDate | Date when the quote was created |
| effectiveQuoteCompletionDate | Date when the quoted was Cancelled or Rejected or Accepted |
| fulfillmentStartDate | Date when product in the quote should be available |
| quoteCompletionDate | initial quote required by date from the requestor perspective |
| notificationContact | Contact attached to the quote to send back information regarding this quote |
| validFor.startDateTime | valid from |
| validFor.endDateTime | valid until |

BillingAccount: is the tentative billingAccount to use to bill the future products once ordered

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of the billing account |
| href | Reference of the billing account |

Note: Extra information about the quote (e.g. useful to add extra information that could be useful for a quote human process).

|  |  |
| --- | --- |
| Field | Description |
| date | Date of the note |
| author | Author of the note |
| text | Text of the note |

Characteristic: Characteristics of the quote to capture specific information (Business Unit, Business sector, etc.)

|  |  |
| --- | --- |
| Field | Description |
| name | Name of the characteristic |
| value | Value of the characteristic |

Customer: Defines the party for whom the quote is made

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of related party identified as customer |
| href | Reference of the relatedParty identified as customer, could be a party reference or a partyRole reference |
| name | Name of the related party identified as customer |

RelatedParty: Defines parties which are involved in the quote and the role they are playing. It may be the ISP sale representative managing the quote, sales manager in charge of discount approval.

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of related party |
| href | Reference of the relatedParty, could be a party reference or a partyRole reference |
| role | Role of the related party |
| name | Name of the related party |

Agreement: If special condition or disclaimer should be communicated to the customer they are managed as Agreement (example for a leased line building where some tariff update could be done only after the quote - once the delivery in progress).

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of the agreement |
| href | Reference of the agreement as per Agreement API |
| name | Name of the agreement |

QuoteAuthorization: If special discount or special product or service tariff need an approval for ISP Sales representative n+1 or n+2 – these approvals are described there. This is approval at the whole quote level.

|  |  |
| --- | --- |
| Field | Description |
| authorizationDate | date of the authorization |
| authorizationState | authorization state (approved or declined) |
| authorizationSignatureRepresentation | to specific a digital or manual signature |
| attachement.id | Id of the attachment describing the authorization |
| attachement.href | Reference of the attachment describing the authorization |
| attachement.type | Type of the attachment describing the authorization (ex: pdf) |

QuoteItem: quote items that have to be treated

|  |  |
| --- | --- |
| Field | Description |
| id | Identifier of the quote item (generally it is a sequence number 01, 02, 03, …) |
| state | State of the quote item : described in the state machine diagram |
| appointment | Used to precise that an appointment was set up with a related party for this quote item |

Attachment: attachment linked to the quote item.

|  |  |
| --- | --- |
| Field | Description |
| id | Identifier of the quote item attachment |
| href | reference of the quote item attachment |
| type | type of the quote item attachment |

RelatedParty: Defines parties which are involved in the quote item and the role they are playing.

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of related party |
| href | Reference of the relatedParty, could be a party reference or a partyRole reference |
| role | Role of the related party |
| name | Name of the related party |

ProductOffering: quoted offering. May be a bundle ProductOffering, in this case, it will contain the list of bundled offers that are quoted.

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of the product offering |
| href | Reference of the product offering |

Product: Configure the product characteristics (only configurable characteristics and necessary only if a non-default value is selected).

ProductCharacteristic: Characteristics of the product to instantiate or to modify

|  |  |
| --- | --- |
| Field | Description |
| name | Name of the characteristic |
| value | Value of the characteristic |

May be a bundle product instantiation, in this case, it will contain the list of bundled product to instantiate

|  |  |
| --- | --- |
| Field | Description |
| id | Unique identifier of the bundled product |
| href | Reference of the bundled product |

Note: Extra information about the quote item (e.g. useful to add extra information that could be useful for a quote item human process).

|  |  |
| --- | --- |
| Field | Description |
| text | Text of the note |
| date | Date of the note |
| author | Author of the note |

ItemQuoteAuthorization: If special discount or special product or service tariff need an approval for ISP Sales representative n+1 or n+2 – these approvals are described there. This is approval at the quote item level.

|  |  |
| --- | --- |
| Field | Description |
| authorizationDate | date of the authorization |
| authorizationState | authorization state (approved or declined) |
| authorizationSignatureRepresentation | to specific a digital or manual signature |
| attachement.id | Id of the attachment describing the authorization |
| attachement.href | Reference of the attachment describing the authorization |
| attachement.type | Type of the attachment describing the authorization (ex: pdf) |

QuoteItemPrice: if a special price or discount is awarding for a quote item this offering price and alteration are described here.

|  |  |
| --- | --- |
| Field | Description |
| name | Name of the quote item price |
| description | Description of the quote item price |
| unitOfMeasure |  |
| price | see below |
| QuoteItemPriceAlteration | see below |

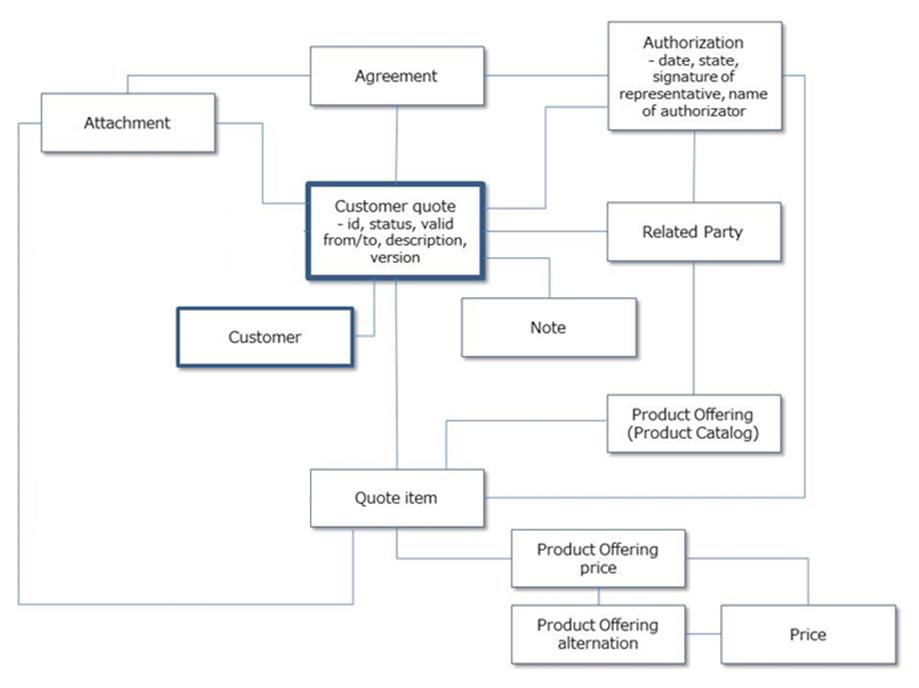
Price: prices are described there with includedTax and dutyFree amounts

|  |  |
| --- | --- |
| Field | Description |
| taxIncludedAmount | quote item price with tax included |
| dutyFreeAmount | quote item price without tax |
| taxRate | taxes rate |
| currencyCode | currency |
| percentage | used for price alteration based on percentage |
| priceType | indicate if the price is for recurrent or no-recurrent charge |
| recurringChargePeriod | period if the price modification is recurrent |

QuoteItemPriceAlteration: used to defined price alteration It could be a discount (net or %), it could be a price override.

|  |  |
| --- | --- |
| Field | Description |
| name | quote item price with tax included |
| description | quote item price without tax |
| priceAlterationType | taxes rate |
| unitOfMeasure | currency |
| applicationDuration | duration of the discount |
| recurringChargePeriod | period for the application duration |
| priority | price alteration priority |
| price | see above |

UML model:

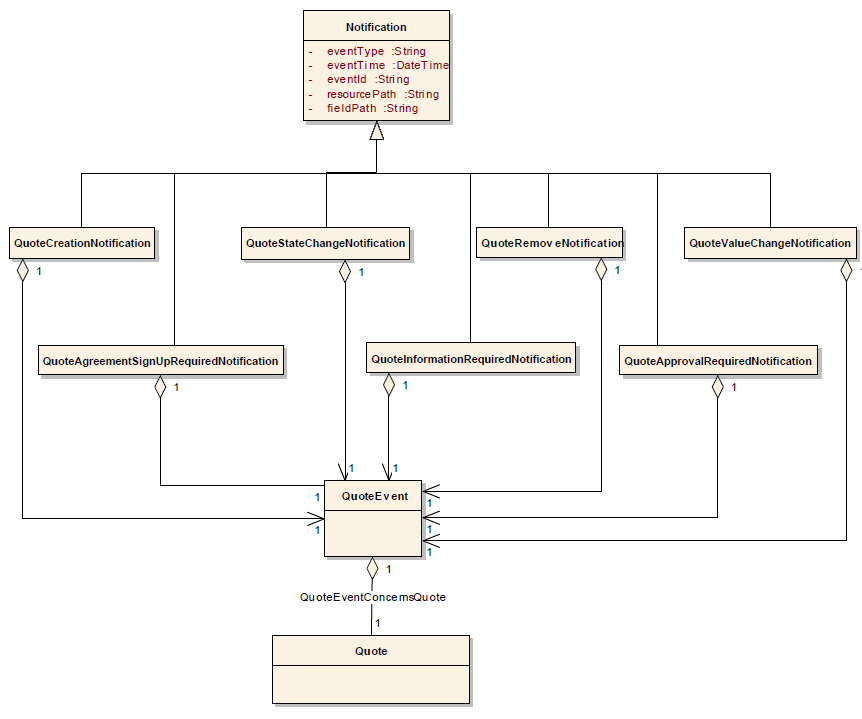


## Notification Resource Models

Seven notification types are defined:

* quoteCreationNotification
* quoteRemoveNotification
* quoteStateChangeNotification
* quoteValueChangeNotification
* quoteInformationRequiredNotification
* quoteApprovalRequiredNotification
* quoteAgreementSignUpRequiredNotification

UML model:



### Quote Creation Notification

Notification used to notify that a new quote (or a new version of a quote) has just been created.

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2013-04-19T16:42:25-04:00",  "eventType":"quoteCreationNotification",  "event":{  "quote":{  "id":"42",  "href":"http://serverlocation:port/quoteManagement/quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description":"A wonderful 42 quote for brand new products",  "category":"corporate",  "state":"Approved",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"1",  "state":"Approved",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/TMFVoiceEXtraRationale.pdf",  "type":"pdf"  },  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "productOffering":{  "id":"198",  "href":"http: //serverlocation: port/catalogManagement/productOffering/198"  },  "product":{  }  },  {  "id":"2",  "state":"Approved",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },  {  "id":"3",  "state":"Approved",  "note":[  {  "text":"The leased line should be directly plugged from Joe’s Office",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "productOffering":{  "id":" TMF Fiber+",  "href":"http: //serverlocation: port/catalogManagement/productOffering/TMFFiber+"  },  "product":{  "productCharacteristic":[  {  "name":"Speed",  "value":"100 Mo/s"  },  {  "name":"Site A",  "value":"12 Dupont Circle, 34511 Washington DC"  },  {  "name":"Site B",  "value":"436 25th Avenue, 34507 Washington DC"  }  ]  }  },  {  "id":"4",  "state":"Approved",  "itemQuoteProductOfferingPrice":[  {  "itemQuotePriceAlteration":{  "name":"Discount on Bundle TV channel",  "description":"Movie + sport is so fun",  "validFor":{  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "price":{  "override":23.87  },  "recurringChargePeriod":"monthly",  "priceCondition":""  }  }  ],  "productOffering":{  "id":"TM TV+",  "href":"http://serverlocation:port/catalogManagement/productOffering/BundleTMTV+",  "bundledProductOffering":[  {  "id":" Sport TV Channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/SportChannel"  },  {  "id":" Movie TV channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/MovieChannel"  }  ]  }  }  ]  }  } |

### Quote Remove Notification

This notification is used to notify that a versioned quote has been deleted.

|  |
| --- |
| {       "eventId":"00002",       "eventTime":"2013-04-19T16:42:25-30:00",       "eventType":"quoteRemoveNotification",       "quote":{          "id":" 42",      "href":"http://serverlocation:port/quoteManagement/Quote/42",           "externalID":"NiceNameForTheConsumer\_42",  "version": "1.0"      } } |

### Quote State change Notification

Used to notify that a versioned quote state is evolving.

|  |
| --- |
| {       "eventId":"00003",       "eventTime":"2013-04-19T16:42:25-30:00",       "eventType":"quoteStateChangeNotification",       "quote":{          "id":" 42",      "href":"http://serverlocation:port/quoteManagement/Quote/42",          "externalID":"NiceNameForTheConsumer\_42",           "state":"Completed",  "version": "1.0"  } } |

### Quote Value Notification

Used to notify that any data in a versioned quote has just changed.

|  |
| --- |
| {       "eventId":"00004",       "eventTime":"2013-04-19T16:42:25-30:00",       "eventType":"quoteValueChangeNotification",       "quote":{          "id":" 42",      "href":"http://serverlocation:port/quoteManagement/Quote/42",          "externalID":"NiceNameForTheConsumer\_42",  "version": "1.0",           "quoteItem":[             {                "id":"1",                "product":{                   "productCharacteristic":[                      {                         "name":"Colour",                         "value":"Black"                      }                   ]                }             }  ]  } } |

### QUOTE Information Required Notification

Used to notify that some data in the quote needs to be filled / is missing.

* “resourcePath” allows to precise if it is a data at quote level or at quote Item level (and which one of them) that is missing
* “fieldPath” details which field is missing, its structure is quite similar to GET filter criteria
  + “missing=” points at the missing field
  + “&<criteria>” can be used to identify a specific element in lists

Simple example : product characteristic is missing

|  |
| --- |
| {    "eventId":"00005",    "eventTime":"2013-04-19T16:42:25-30:00",    "eventType":"quoteInformationRequiredNotification",    "resourcePath":"/quote/42/quoteItem/3 ",    "fieldPath":"missing=product.characteristic/?name = "Speed”,    "quote":{       "id":" 42",       "href":"http://serverlocation:port/quoteManagement/Quote/42",       "externalID":"NiceNameForTheConsumer\_42",  "version": "1.0"    } } |

Complex example: for a quote we looking for the price for a quote item level

|  |
| --- |
| {    "eventId":"00006",    "eventTime":"2013-04-19T16:42:25-30:00",    "eventType":"quoteInformationRequiredNotification",    "resourcePath":"/quote/42/quoteItem/1",    "fieldPath":"missing= itemQuoteProductOfferingPrice ",    "quote":{       "id":" 42",       "href":"http://serverlocation:port/quoteManagement/Quote/42",       "externalID":"NiceNameForTheConsumer\_42",  "version": "1.0"    } } |

### QUOTE APPROVAL REquIRED Required Notification

This notification is used to notify that a quote require approval.

An approval could be for a quote with optionally only quote item related to the approval.

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2013-04-19T16:42:25-04:00",  "eventType":"quoteApprovalRequiredNotification",  "event":{  "quote":{  "id":"42",  "href":"http://serverlocation:port/quoteManagement/quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description":"A wonderful 42 quote for brand new products",  "category":"corporate",  "state":"Pending",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"Pending",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"2",  "state":"Pending",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },    ]  }  } |

### QUOTE AGREEMENT SIGNUP REquIRED Notification

This notification is used to notify that a quote require agreements to be signed.

The state of the Quote may be set to Accepted but there is still some agreement to be signed the system has to send Notifications.

QuoteId and Agreement to be signed should be indicated in the Notifications.

Agreement related party should be used to target the Notifications.

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2013-04-19T16:42:25-04:00",  "eventType":"quoteApprovalRequiredNotification",  "event":{  "quote":{  "id":"42",  "href":"http://serverlocation:port/quoteManagement/quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description":"A wonderful 42 quote for brand new products",  "category":"corporate",  "state":"Accepted",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"Pending",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"2",  "state":"Approved",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"Pending",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },    ]  }  } |

# API OPERATION TEMPLATES

The following table collects the usual Contract:

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

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

Notifications are also described in a subsequent section.

## GET /quoteManagement/quote/{ID}

Note that collections can be retrieved via GET /quoteManagement/Quote with no {ID}

Description:

This operation is used to retrieve quote information using the ID. If the version is not filled, by default only the most current version is returned. To get a specific version of an entity the (Version=X) directive is added to the ID – example to get the Quote versioned 1.1 we could use /quoteManagement/Quote/id=42:(version=1.1)

Note that the resources in this case may have the same ID but may be distinguished by the inclusion of the version number in their ID i.e /42:(version=1.0), /42:(version=2.0).

Attribute selection is enabled on all first level attributes but not on inner classes.

Attribute selection may optionally be enabled on all attributes and inner classes.

Behavior:

* Return status codes
  + 200 OK - the request was successful
  + 404 Not found - the supplied ID does not match a known Quote

Use case: Get a specific quote based on its ID

Special conditions apply if the API consumer is an external system or actor – in this case:

* only *Approved*, *Accepted* and *Rejected* quote should be retrieved.
* only quote last version should be retrieved.
* a filter should be applied on the response to remove fields with only internal use as for example all information related to the authorization or the ISP parties linked to the quote.

If the API is an internal system or actor:

* If the quote ID is filled but without version – all quote versions are retrieved in the response.

|  |
| --- |
| **REQUEST** |
| GET /quoteManagement/Quote/42  Accept: application/json |
| **RESPONSE** |
| 200  Content-Type: application/json  {  "id":"42",  "href":"http://serverlocation:port/quoteManagement/Quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description":"A wonderful 42 quote for brand new products",  "category":"corporate",  "state":"Approved",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"1",  "state":"Approved",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/TMFVoiceEXtraRationale.pdf",  "type":"pdf"  },  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "productOffering":{  "id":"198",  "href":"http: //serverlocation: port/catalogManagement/productOffering/198"  },  "product":{  }  },  {  "id":"2",  "state":"Approved",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },  {  "id":"3",  "state":"Approved",  "note":[  {  "text":"The leased line should be directly plugged from Joe’s Office",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "productOffering":{  "id":" TMF Fiber+",  "href":"http: //serverlocation: port/catalogManagement/productOffering/TMFFiber+"  },  "product":{  "productCharacteristic":[  {  "name":"Speed",  "value":"100 Mo/s"  },  {  "name":"Site A",  "value":"12 Dupont Circle, 34511 Washington DC"  },  {  "name":"Site B",  "value":"436 25th Avenue, 34507 Washington DC"  }  ]  }  },  {  "id":"4",  "state":"Approved",  "itemQuoteProductOfferingPrice":[  {  "itemQuotePriceAlteration":{  "name":"Discount on Bundle TV channel",  "description":"Movie + sport is so fun",  "validFor":{  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "override":23.87  },  "recurringChargePeriod":"monthly",  "priceCondition":""  }  }  ],  "productOffering":{  "id":"TM TV+",  "href":"http://serverlocation:port/catalogManagement/productOffering/BundleTMTV+",  "bundledProductOffering":[  {  "id":" Sport TV Channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/SportChannel"  },  {  "id":" Movie TV channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/MovieChannel"  }  ]  }  }  ]  } |

## GET /quoteManagement/quote?{field selector}&{filtering expression}

Description:

This operation is used to retrieve quote information using filter criteria.

If the version is not filled, by default only the most current version is returned.

Filtering selection is enabled on all first level attributes but not on inner classes with the exception of relatedParties.

Filtering may optionally be enabled on all attributes and inner classes.

Attribute selection is enabled on all first level attributes but not on inner classes.

Attribute selection may optionally be enabled on all attributes and inner classes.

Behavior:

* Return status codes
  + 200 OK - the request was successful (includes situation in which no quote matched supplied criteria)
  + 400 Bad Request - error

Use case: Get all the quote for a given customer that were completed before a specified date

Special conditions apply if the API consumer is an external system or actor – in this case:

* only *Approved*, *Accepted* and *Rejected* quote should be retrieved.
* only quote last version should be retrieved.
* a filter should be applied on the response to remove fields with only internal use as for example all information related to the authorization or the ISP parties linked to the quote.

If the API is an internal system or actor:

* If the quote ID is filled but without version – all quote versions are retrieved in the response.

|  |
| --- |
| **REQUEST** |
| GET /quoteManagement/quote?relatedParty.role=customer& relatedParty.id=345221&completionDate.lt=2013-09-10T00:00:00-04:00  Accept: application/json |
| **RESPONSE** |
| 200  Content-Type: application/json  [ {  "id":"42",  "href":"http://serverlocation:port/quoteManagement/Quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description":"A wonderful 42 quote for brand new products",  "category":"corporate",  "state":"Approved",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"1",  "state":"Approved",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/TMFVoiceEXtraRationale.pdf",  "type":"pdf"  },  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "productOffering":{  "id":"198",  "href":"http: //serverlocation: port/catalogManagement/productOffering/198"  },  "product":{  }  },  {  "id":"2",  "state":"Approved",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },  {  "id":"3",  "state":"Approved",  "note":[  {  "text":"The leased line should be directly plugged from Joe’s Office",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "productOffering":{  "id":" TMF Fiber+",  "href":"http: //serverlocation: port/catalogManagement/productOffering/TMFFiber+"  },  "product":{  "productCharacteristic":[  {  "name":"Speed",  "value":"100 Mo/s"  },  {  "name":"Site A",  "value":"12 Dupont Circle, 34511 Washington DC"  },  {  "name":"Site B",  "value":"436 25th Avenue, 34507 Washington DC"  }  ]  }  },  {  "id":"4",  "state":"Approved",  "itemQuoteProductOfferingPrice":[  {  "itemQuotePriceAlteration":{  "name":"Discount on Bundle TV channel",  "description":"Movie + sport is so fun",  "validFor":{  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "override":23.87  },  "recurringChargePeriod":"monthly",  "priceCondition":""  }  }  ],  "productOffering":{  "id":"TM TV+",  "href":"http://serverlocation:port/catalogManagement/productOffering/BundleTMTV+",  "bundledProductOffering":[  {  "id":" Sport TV Channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/SportChannel"  },  {  "id":" Movie TV channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/MovieChannel"  }  ]  }  }  ]  }  ] |

## PATCH /quoteManagement/quote/{ID}

Description :

This operation is used to modify quote and/or their items.

By default PATCH will be acting only on the latest version of the Resource.

To update a specific version of an entity the (Version=X) directive is added to the ID (i.e /id:(version=x). Note that this capability is only available to API users having the proper authorizations to change the catalog entities with specific version numbers.

Behavior:

* Return status codes
  + 200 OK - the request was successful
  + 400 Bad Request - error

|  |  |  |
| --- | --- | --- |
| Attribute name | Patchable | Rule |
| id | No |  |
| href | No |  |
| externalID | No |  |
| description | Yes | Only when quote is *In Progress* or *Pending* state |
| category | Yes | Only when quote is *In Progress* or *Pending* state |
| state | Yes | To manage the quote lifecycle: in progress, pending, approved, rejected, accepted, cancelled.  Influence the quoteItem state – see following consistency table |
| version | No |  |
| quoteDate | No | This date should be automatically filled and not modifiable |
| effectiveQuoteCompletionDate | No | This date should be automatically filled and not modifiable |
| quoteCompletionDate | Yes | Only when quote is *In Progress* or *Pending* state |
| notificationContact | Yes |  |
| validFor.startDateTime | Yes | Only when quote is *In Progress* or *Pending* state |
| validFor.endDateTime | Yes | Only when quote is *In Progress* or *Pending* state |
| billingAccount | Yes | Only when quote is *In Progress* or *Pending* state |
| note | Yes | Only when quote is *In Progress* or *Pending* state |
| characteristic | Yes | Only when quote is *In Progress* or *Pending* state |
| customer | No |  |
| relatedParty | Yes | Only when quote is *In Progress* or *Pending* state |
| agreement | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteAuthorization | Yes | Only when quote is in *Pending* state |
| quoteAuthorization.attachment | Yes | Only when quote is in *Pending* state |
| quoteProductOfferingPrice.quotePriceAlteration | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.id | No |  |
| quoteItem.state | Yes | To manage the quote item process : in Progress, pending, approved, rejected  see table for consistence with quote state |
| quoteItem.appointment | Yes |  |
| quoteItem.attachment | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.relatedParty | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.productOffering | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.ProductCharacteristic.name | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.ProductCharacteristic.value | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.Bundledproduct.id | Yes | Only when quote is *In Progress* or *Pending* state |
| quoteItem.Bundledproduct.href | Yes | Only when quote is *In Progress* or *Pending* state |
| note | Yes | Only when quote is *In Progress* or *Pending* state |
| itemQuoteAuthorization | Yes | Only when quote is *Pending* state and quote item also in *Pending* state |
| itemQuoteProductOfferingPrice | Yes | Only when quote is *In Progress* or *Pending* state |

Further document any rules that must be implemented when patching attributes.

|  |  |
| --- | --- |
| Rule name | Rule/Pre Condition/Side Effects/Post Conditions |
| Quote State patches | When patching an quote state to :   * “In Progress”: all quote items should be set to “InProgress” * “Approved”: all quote items should be set to “Approved”   When patching an quote item state to :   * “Pending”: the quote state itself should be set to “Pending” * “Rejected”: the quote state itself should be set to “Rejected”   Patch API is not allowed to set quote item state to *Approved* (only a state quote could be patched to *Approved*) |

|  |
| --- |
| **REQUEST** |
| PATCH quoteManagement/quote/42  Content-type: application/json  {    "description": "A new description…" } |
| **RESPONSE** |
| 201  Content-Type: application/json  {  "id":"42",  "href":"http://serverlocation:port/quoteManagement/Quote/42",  "externalId":"QuoteForTheConsumer\_42",  "description": "A new description…",  "category":"corporate",  "state":"Approved",  "version":"1.0",  "quoteDate":"2013-04-12T16:42:23-04:00",  "effectiveQuoteCompletionDate":"",  "quoteCompletionDate":"2013-04-19T16:42:23-04:00",  "notificationContact":"bill.dupont@hotmail.com",  "validFor":{  "startDateTime":"2013-04-12T16:42:23-04:00",  "endDateTime":"2013-04-19T00:00:00-04:00"  },  "billingAccount":[  {  "id":"123456",  "href":"http://serverlocation:port/billingManagement/billingAccount/123456"  }  ],  "note":[  {  "text":"Quote following opportunity #2345",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "characteristic":[  {  "name":"Business Unit",  "value":"London South West Cor^porate"  }  ],  "customer":{  "id":"345221",  "href":"http://serverlocation:port/customerManagement/customer/345221",  "name":"John Doe"  },  "relatedParty":[  {  "role":"authorizer",  "id":"57",  "href":"http://serverlocation:port/partyManagement/partner/57",  "name":"Shinoju White"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "agreement":[  {  "id":"45",  "href":"http://serverlocation:port/engagedPartyManagement/agreement/45",  "name":" standard disclaimer"  }  ],  "quoteAuthorization":[  {  "authorizationDate":"2013-04-12T16:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"pdf"  },  "quoteProductOfferingPrice":[  {  "quotePriceAlteration":{  "name":"Global Discount",  "description":"5% for all recurring charge",  "validFor":"",  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "percentage":5  },  "recurringChargePeriod":"",  "priceCondition":"applied if all quote items are purchased"  }  ]  }  ],  "quoteItem":[  {  "id":"1",  "state":"Approved",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/TMFVoiceEXtraRationale.pdf",  "type":"pdf"  },  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563",  "name":"Bill Dupont"  }  ],  "productOffering":{  "id":"198",  "href":"http: //serverlocation: port/catalogManagement/productOffering/198"  },  "product":{  }  },  {  "id":"2",  "state":"Approved",  "note":[  {  "text":"xxxx",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "itemQuoteAuthorization":[  {  "authorizationDate":"2013-04-12T18:42:23-04:00",  "authorizationState":"approved",  "authorizationSignatureRepresentation":"digital ",  "attachment":{  "id":"22",  "href":"http://serverlocation:port/documentManagement/attachment/22",  "type":"JPG"  },  "relatedParty":[  {  "role":"authorizer",  "id":"242",  "href":"http://serverlocation:port/partyManagement/partner/242",  "name":"Shinoju White"  }  ]  }  ],  "productOffering":{  "id":" SamPhone i5s ",  "href":"http: //serverlocation: port/catalogManagement/productOffering/SamPhonei5s "  },  "product":{  "productCharacteristic":[  {  "name":"color",  "value":"pink"  }  ],  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Samantha Doe"  }  ]  }  },  {  "id":"3",  "state":"Approved",  "note":[  {  "text":"The leased line should be directly plugged from Joe’s Office",  "date":"2013-04-12T16:42:23-04:00",  "author":"Bill Dupont"  }  ],  "productOffering":{  "id":" TMF Fiber+",  "href":"http: //serverlocation: port/catalogManagement/productOffering/TMFFiber+"  },  "product":{  "productCharacteristic":[  {  "name":"Speed",  "value":"100 Mo/s"  },  {  "name":"Site A",  "value":"12 Dupont Circle, 34511 Washington DC"  },  {  "name":"Site B",  "value":"436 25th Avenue, 34507 Washington DC"  }  ]  }  },  {  "id":"4",  "state":"Approved",  "itemQuoteProductOfferingPrice":[  {  "itemQuotePriceAlteration":{  "name":"Discount on Bundle TV channel",  "description":"Movie + sport is so fun",  "validFor":{  "startDateTime":"2013-04-19T16:42:23.0Z"  },  "priceType":"recurrent",  "unitOfMeasure":"",  "price":{  "override":23.87  },  "recurringChargePeriod":"monthly",  "priceCondition":""  }  }  ],  "productOffering":{  "id":"TM TV+",  "href":"http://serverlocation:port/catalogManagement/productOffering/BundleTMTV+",  "bundledProductOffering":[  {  "id":" Sport TV Channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/SportChannel"  },  {  "id":" Movie TV channel",  "href":"http://serverlocation:port/catalogManagement/productOffering/MovieChannel"  }  ]  }  }  ]  } |

## POST /quoteManagement/quote

Description:

This operation is used to create a new quote (V1.0) or a new version of an existing quote (Vn.n n=> 1)

Behavior :

* Return status codes
  + 201 Created - the request was successful
  + 400 Bad Request – error

ID Management :

For a quote in V1.0 POST should be used without specifying the id, the quote system is in charge of generating the id.

For a quote creation in other version than V1.0, the id should be specified.

In all case the href should not be filled because , the quote system is in charge of generating href for the new version of the Quote

When performing a POST, these are the allowed attributes:

| Attribute name | Mandatory | Default | Rule |
| --- | --- | --- | --- |
| id | Y/N\* | N/A | \*See specific rule above |
| href |  |  |  |
| externalID | N | N/A |  |
| description | N | N/A |  |
| category | N | “uncategorized” |  |
| state | N | *in Progress* |  |
| version | Y | N/A | See specific rule above.  + version should be consistent with previous version in |
| quoteDate |  |  |  |
| effectiveQuoteCompletionDate |  |  |  |
| quoteCompletionDate | N | No specified default value |  |
| notificationContact | N | No specified default value |  |
| validFor.startDateTime | N |  |  |
| validFor.endDateTime | N |  | endDateTime should be later than startDateTime |
| billingAccount | N | No specified default value |  |
| note | N | No specified default value |  |
| characteristic | N |  |  |
| customer | Y |  |  |
| relatedParty | N |  |  |
| agreement | N |  |  |
| quoteAuthorization | N |  |  |
| quoteAuthorization.attachment | N |  |  |
| quoteProductOfferingPrice.quotePriceAlteration | N |  |  |
| quoteItem.id | Y |  | A quote should I havet least one quote item |
| quoteItem.state | N | “In Progress” |  |
| quoteItem.appointment | N |  |  |
| quoteItem.attachment | N |  |  |
| quoteItem.relatedParty | N |  |  |
| quoteItem.productOffering | Y |  |  |
| quoteItem.ProductCharacteristic.name | N |  |  |
| quoteItem.ProductCharacteristic.value | N |  |  |
| quoteItem.Bundledproduct.id | N |  |  |
| quoteItem.Bundledproduct.href | N |  |  |
| note | N |  |  |
| itemQuoteAuthorization | N |  |  |
| itemQuoteProductOfferingPrice |  |  |  |

* Further specify any rules on the creation of the entity

|  |  |
| --- | --- |
| Rule name | Rule |
| Customer and related party | Customer should mandatory specified in the quote header through a specific customer data and not with the relatedParty structure.  For the quote item there is no specific customer structure. |

|  |
| --- |
| **REQUEST** |
| POST /quoteManagement/quote  Content-type: application/json  {  "note":[  {  "text":"A free text detailing the note"  }  ],  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563"  }  ],  "quoteItem":[  {  "id":"1",  "action":"add",  "billingAccount":[  {  "id":"1789",  "href":"http://serverlocation:port/billingManagement/billingAccount/1789"  }  ],  "productOffering":{  "id":"42",  "href":"http: //serverlocation: port/catalogManagement/productOffering/42"  },  "product":{  "productCharacteristic":[  {  "name":"Colour",  "value":"White"  },  {  "name":"Memory",  "value":"16"  }  ]  }  },  {  "id":"2",  "action":"modify",  "product":{  "id":"456",  "href":"http: //serverlocation: port/inventoryManagement/product/456",  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Jimmy Doe"  }  ]  }  },  {  "id":"3",  "action":"delete",  "product":{  "id":"456",  "href":"http: //serverlocation: port/inventoryManagement/product/456"  }  }  ]  } |
| **RESPONSE** |
| 201  Content-Type: application/json  {  "note":[  {  "text":"A free text detailing the note"  }  ],  "relatedParty":[  {  "role":"customer",  "id":"345221",  "href":"http://serverlocation:port/partyManagement/customer/345221",  "name":"John Doe"  },  {  "role":"seller",  "id":"4563",  "href":"http://serverlocation:port/partnerManagement/partner/4563"  }  ],  "quoteItem":[  {  "id":"1",  "action":"add",  "billingAccount":[  {  "id":"1789",  "href":"http://serverlocation:port/billingManagement/billingAccount/1789"  }  ],  "productOffering":{  "id":"42",  "href":"http: //serverlocation: port/catalogManagement/productOffering/42"  },  "product":{  "productCharacteristic":[  {  "name":"Colour",  "value":"White"  },  {  "name":"Memory",  "value":"16"  }  ]  }  },  {  "id":"2",  "action":"modify",  "product":{  "id":"456",  "href":"http: //serverlocation: port/inventoryManagement/product/456",  "relatedParty":[  {  "role":"user",  "id":"5667443",  "href":"http://serverlocation:port/partyManagement/user/5667443",  "name":"Jimmy Doe"  }  ]  }  },  {  "id":"3",  "action":"delete",  "product":{  "id":"456",  "href":"http: //serverlocation: port/inventoryManagement/product/456"  }  }  ]  } |

## DELETE quoteManagement/Quote/{ID}

This operation is used to delete a managed entity or a quote entirely.

***Warning: it should only be used for administration matters***

Description:

This operation is used to delete a quote.

The only usable and also mandatory attributes for the deletion are id AND/OR href.

If the id+version are specified only the versioned quote is deleted.

If only id is specified all quote with this id are deleted (all versions are deleted)

Behavior :

* Returns HTTP/1.1 status code 200 if the request was successful.
* 404 if the quote does not exist
* 403 if the operation is forbidden

|  |
| --- |
| **REQUEST** |
| DELETE /quoteManagement/quote/5868839 |
| **RESPONSE** |
| 200 |

# API NOTIFICATIOn TEMPLATES

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.

|  |
| --- |
| **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.

|  |
| --- |
| **REQUEST** |
| DELETE /api/hub/{id}  Accept: application/json |
| **RESPONSE** |
| 204 |

## publish {EventTYPE} POST /listener

Description :

Provide the Event description

Behavior :

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

|  |
| --- |
| **REQUEST** |
| POST /client/listener  Accept: application/json  {    "event": {  EVENT BODY   },  "eventType": "eventType" } |
| **RESPONSE** |
| 201  Content-Type: application/json |

Example: see TMF REST Design Guidelines.

# ACKNOWLEDGMENTS

## VERSION HISTORY

|  |  |  |  |
| --- | --- | --- | --- |
| **Version Number** | **Date** | **Modified by** | **Description** |
| Version 1.0.0 | 15/04/2013 | Pierre Gauthier  TM Forum | First issue |
| Version 2.0.0 |  | Pierre Gauthier  TM Forum | Updated for use in the Paris Spec Jam – and rebranded |
| Version 2.1.0 | 15/04/2016 | Pierre Gauthier  TM Forum | Updates for Fx16 |
| Version 2.1.1 | 14/06/2016 | Alicja Kawecki  TM Forum | Updated cover; minor formatting/style corrections prior to publishing for Fx16 |

## Release History

|  |  |  |  |
| --- | --- | --- | --- |
| **Release Number** | **Date** | **Release led by:** | **Description** |
| Release 1.0 | 04/15/2013 | Pierre Gauthier  TM Forum  [pgauthier@tmforum.org](mailto:pgauthier@tmforum.org) | First Release of Draft Version of the Document. |
| Release 1.1 |  |  | Updated for use in the Paris Spec Jam – and rebranded |

## Contributors to Document

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