



**Draft Standard
MEF 80 Draft (R4)**

**Quote Management
Requirements and Use Cases**

July 2020

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1 List of Contributing Members

The following members of the MEF participated in the development of this specification and have requested to be included in this list.

Member Company
Amdocs
AT&T
Cataworx
Colt
Ericsson
Iometrix
Netcracker
Orange
Spirent Communications
Telus
Verizon

Table 1 – Contributing Member Companies

2 Abstract

This specification identifies the common Quote use cases and attributes needed to support inter-carrier Quote management. It supports the requirements defined in the MEF Lifecycle Service Orchestration (LSO) Reference Architecture and Framework (MEF 55 [9], “LSO RA”) requirements for Quotes over the Sonata Interface (interactions between a Service Provider and a Partner). Information contained within this specification will be utilized by both Buyer and Seller for the development of automated API systems.

3 Release Notes

This document is undergoing a Call for Comments Ballot. There are not outstanding issues that are known at this time. All comments from the previous Call for Comments Ballot have been addressed in this version of the document. Based on the ongoing review, issues may be identified that will be addressed prior to the document proceeding to Letter Ballot.

4 Terminology and Acronyms

This section defines the terms used in this specification. In many cases, the normative definitions to terms are found in other documents. In these cases, the third column is used to provide the reference that is controlling, in other MEF or external documents.

In addition, terms that are defined in MEF 10.3 [4], MEF 12.2 [5], MEF 26.2 [6], MEF 50.1 [7], MEF 51.1 [8], MEF 55 [9], MEF 57.1 [10], and MEF 79 [11] are included in this document by reference and are not repeated in the table below.

Term	Definition	Reference
Budgetary Quote	A quote that is provided quickly and with very little analysis such that the Buyer can get an idea of how much the requested Product Offering could cost. Monthly Recurring Charges and Non-Recurring Charges, if specified, are subject to change.	This document
Currency	A term used to describe money. Currency is represented by currency codes defined in ISO 4217:2015 [1].	This document
Deferred Quote Response	A Seller's response to a Buyer's Create Quote Request whereby the Seller immediately acknowledges that the Create Quote Request was received and, over time, sends notifications to update the Buyer on the status and results of the Create Quote Request (assuming the Buyer has subscribed to receive the notifications). The Buyer can also poll the Seller for the Quote Request Response and status associated with the Create Quote Request.	This document derived from MEF 79 [11]
Duration	A period of time specified in seconds, minutes, hours, business hours, business days, or calendar days.	This document

Term	Definition	Reference
Firm Quote	A quote provided to the Buyer based on a pre-order analysis. All Monthly Recurring Charges and Non-Recurring Charges specified on a Firm Quote are committed. A Firm Quote may expire at some date specified by the Seller.	This document
Firm – Subject to Feasibility Check Quote	A quote that is provided to the Buyer based on some, but not a complete, pre-order analysis. At this stage there is further analysis that the Seller can (and is willing) to undertake to provide a committed or firm price, but the Seller needs more time to complete this or the Seller may request that the Buyer use the Firm – Subject to Feasibility Check Quote to proceed to the Order process. Ordering may be possible based on the Firm – Subject to Feasibility Check Quote with some stipulations as to how cost identified during delivering is addressed. The Monthly Recurring Charges specified in the Quote Response are final. Non-Recurring Charges specified in the Quote Response are subject to change.	This document
Immediate Quote Response	A Seller’s response to the Buyer’s Create Quote Request, whereby the Seller responds immediately with the results of the request or indicates that the request cannot be processed. The maximum time to provide an Immediate Response is for further study but is expected to be less than 30 seconds.	This document derived from MEF 79 [11]
Money	A combination of a Currency and an amount in the currency specified.	This document
Monthly Recurring Charges	Charges for a product that are incurred by the Buyer each month for that product.	This document
MRC	Monthly Recurring Charge	This document

Term	Definition	Reference
Non-Recurring Charges	One-time charges for a product that are incurred by the Buyer. Examples are standard installation charges, construction charges, and expedite charges.	This document
NRC	Non-Recurring Charge	This document

Table 2 – Terminology and Abbreviations

5 Scope

This specification defines the process for MEF Quote Management between a Seller and Buyer. This specification is limited to the business process requirements depicted as Use Cases and attribute definitions needed for Quote Management.

6 Compliance Levels

The key words "**MUST**", "**MUST NOT**", "**REQUIRED**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**NOT RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this specification are to be interpreted as described in BCP 14 (RFC 2119, RFC 8174) when, and only when, they appear in all capitals, as shown here. All key words must be in bold text.

Items that are **REQUIRED** (contain the words **MUST** or **MUST NOT**) are labeled as [**Rx**] for required. Items that are **RECOMMENDED** (contain the words **SHOULD** or **SHOULD NOT**) are labeled as [**Dx**] for desirable. Items that are **OPTIONAL** (contain the words **MAY** or **OPTIONAL**) are labeled as [**Ox**] for optional.

7 Introduction

This specification defines the business requirements and process-related guidelines for the Product Quote process over the Sonata interface. The Sonata interface is defined in MEF 55 [9] as the Management Interface Reference Point supporting the management and operations interactions (e.g., ordering, billing, trouble management, etc.) between two network providers (e.g., Service Provider Domain and Partner Domain). The scope of this specification is limited to interactions between these parties; within this specification, they are referred to as the “Buyer” and the “Seller”.

The Buyer requests a quote for the installation of one or more of the Seller’s Product Offerings or for an action to be performed on an existing Product. Product Offerings and Products are defined in MEF 79 [11]. For an INSTALL, the Buyer references the Product Offering using the Seller’s Product Offering Identifier. If the Buyer is requesting a quote to CHANGE or DISCONNECT one of their existing services that is in the Seller’s inventory, the Buyer references the Seller’s Product Identifier. A Buyer might request a quote for a DISCONNECT to determine if there are any early termination charges.

There are 2 associated “patterns” to the interactivity between the Buyer and Seller when the Buyer issues a Quote request:

1. The Seller may respond immediately with the results of the request.
2. The Seller may acknowledge that they received the request, but will process it later, and send notifications to update the Buyer on the status (assuming the Buyer has subscribed to receive the notifications).

Note: The Buyer may retrieve the Quote at any time to obtain status and details on the Quote.

The Seller may indicate they are unable to process the request (immediately or after processing) if they do not support the Product Offering at a requested location, cannot change the Product Identifier to the requested attributes, or for other exceptions.

A Buyer may request either a Budgetary or Firm Quote Level. A Seller returns a Budgetary Quote Level response if the Buyer requested a Budgetary Quote Level. All Quote Items in the Seller’s response must be at the Budgetary level. A Seller returns a Firm or Firm – Subject to Feasibility Check Quote Level response if the Buyer requested a Firm Quote Level. All Quote Items in the Seller’s response must be at either the Firm or Firm – Subject to Feasibility Check level. While these are defined in section 4, why a Buyer or Seller might use one type versus the other is important to understand.

A Budgetary Quote Level provides an estimated Monthly Recurring Charge (MRC) and, where applicable, estimated Non-Recurring Charges (NRCs) for the service install, change, or disconnect. A Budgetary Quote Level might be requested by a Buyer while they are in negotiations with a customer for a service. They are simply seeking a high-level estimate of the cost associated with the service. The seller must return a Budgetary response if the Buyer requests a Budgetary Quote Level.

A Buyer requests a Firm Quote Level when they need committed charges. As an example, if they are trying to provide pricing to an end customer, the Buyer may require firm MRC and if possible, NRCs to provide the end customer with committed pricing.

A Seller responds with a Firm Quote Level when they can provide a committed MRC and, where applicable, committed NRCs for the service install, change, or disconnect. A Seller returns a Firm Quote Level if they have had time to complete analysis of the Buyer's Quote request or the Quote request is for a product offering that has pre-agreed to pricing. When the Seller responds with a Firm Quote Level, they are telling the Buyer that the pricing will not increase unless there are additional actions requested by the Buyer such as an Expedite request.

A Seller responds with a Firm – Subject to Feasibility Check Quote Level when they require additional work on the Buyer's request before they can provide the commitments included in a Firm Quote Level. A Seller may not be willing to perform the additional work on a Quote Request, instead providing that pricing if the Buyer submits a Product Order. A Firm - Subject to Feasibility Check Quote Level allows the Seller to provide an indication of the pricing without the commitment of a Firm Quote Level. The Firm – Subject to Feasibility Check Quote Level response includes a committed MRC and a combination of committed and estimated NRCs. Some NRCs may not be included in the Firm – Subject to Feasibility Check Quote Level response.

In addition to the Quote Level, there are two states related to the Quote Response that provide information to the Customer. These are the IN_PROGRESS_DRAFT state and the ORDERABLE_ALTERNATE state. The IN_PROGRESS_DRAFT state is used by the Seller to provide a Quote Response that is not yet fully completed. It indicates that the Seller has provided some of the requested information from the Quote Request but has not fully completed their work on the Quote Response. A Quote Response in the IN_PROGRESS_DRAFT state may have a Quote Level of Budgetary or Firm – Subject to Feasibility Check. A Quote Response in the ORDERABLE_ALTERNATE state indicates that the Seller has completed all the work on the Quote Request that they are willing to do. It indicates that the Seller is not willing to match the Buyer's Quote Request (e.g., Buyer requests a Firm Response and Seller does not provide a Firm Response during the Quote cycle) or is not able to exactly match non-product configuration attributes (e.g., Term, Quote Level) of the Quote Request. A Quote Response in the ORDERABLE_ALTERNATE state may have a Quote Level of Firm – Subject to Feasibility Check, or Firm. See section 10 for detailed definitions of these states.

To fully define the business interactions associated with inter-carrier quotes, this specification is focused on the following key areas:

- Quote Management Use Cases and Business Process Definitions
- Specific Quote Attributes supported in this specification
- Process Flows for Quotes

8 Quote Use Cases and Business Process Definitions

8.1 High-Level Use Cases

This section provides the complete set of Use Cases needed to support Product Quote Management and expands on the quote process defined in MEF 50.1 [7]. These Use Cases are based on business process standards of interactions between Buyers and Sellers of Products. The specific attributes associated with each Use Case are defined in section 9. Prior arrangements for Buyer authentication, security verification, and system interface requirements are not addressed within these use cases. All onboarding requirements must be defined and e.g., negotiated between the Buyer and Seller prior to the creation and retrieval of quotes.

The Buyer might have performed an Address or Site check or a Product Offering Qualification (POQ) as specified in MEF 79 [11] prior to the process of establishing a quote. The Seller may mandate that every request for a quote include an Address Identifier, Site Identifier, and/or POQ Identifier, and will reject the Quote request if those identifiers are not provided. The Quote functionality is not defined with respect to any particular product, and thus the Buyer is able to get a quote on any of the Product Offerings available to the Buyer that are supported by the Seller. The characteristics of the product are found in its associated Product Specifications and Product Offerings.

Sonata Interface Pre-Order and Order Functions

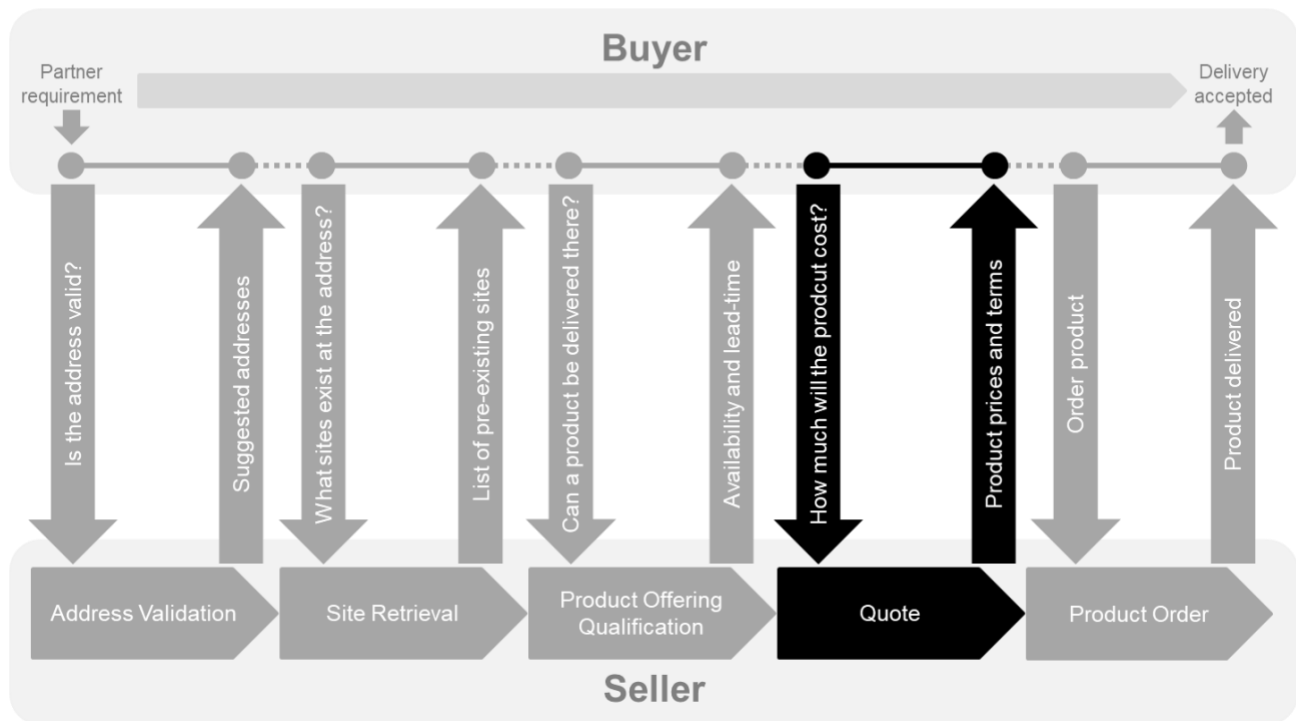


Figure 1 – Sonata Interface Focus

Figure 1 shows the Sonata Pre-Order and Order functions, Address Validation, Site Retrieval, Product Offering Qualification, Quote, and Product Order. The focus of this document is and the use cases within this document support Quote Management. Quote Management allows the Buyer to submit a request to find out how much an instance of a product will cost. The Seller response contains the prices for each product included within the request.

There are two types of Quotes that the Buyer can request, Budgetary or Firm. In a Budgetary Quote response, the Seller provides an estimate of costs associated with the Quote Request. There is no expectation of costs being more than an educated guess. The Buyer may request, and the Seller may offer either an Immediate response or a Deferred response. An Immediate response is returned quickly, normally no longer than a minute or two from receiving the request. A Deferred response allows the Seller to some time period, days, weeks, etc., to respond to the request.

In a Firm Quote response, the Seller may provide two types of responses, Firm – Subject to Feasibility Check or Firm. The Firm – Subject to Feasibility response is provided to the Buyer based on some, but not a complete, pre-order analysis. Some pricing may be firm while other is either omitted or not finalized. The Firm response is provided to the Buyer based on a pre-order analysis. All Monthly Recurring Charges and Non-Recurring Charges specified on a Firm Quote are committed. The Buyer can identify in their request and the Seller can offer either an Immediate response or a Deferred response.

8.2 Quote Use Cases

This section defines the use cases that support Quote Management.

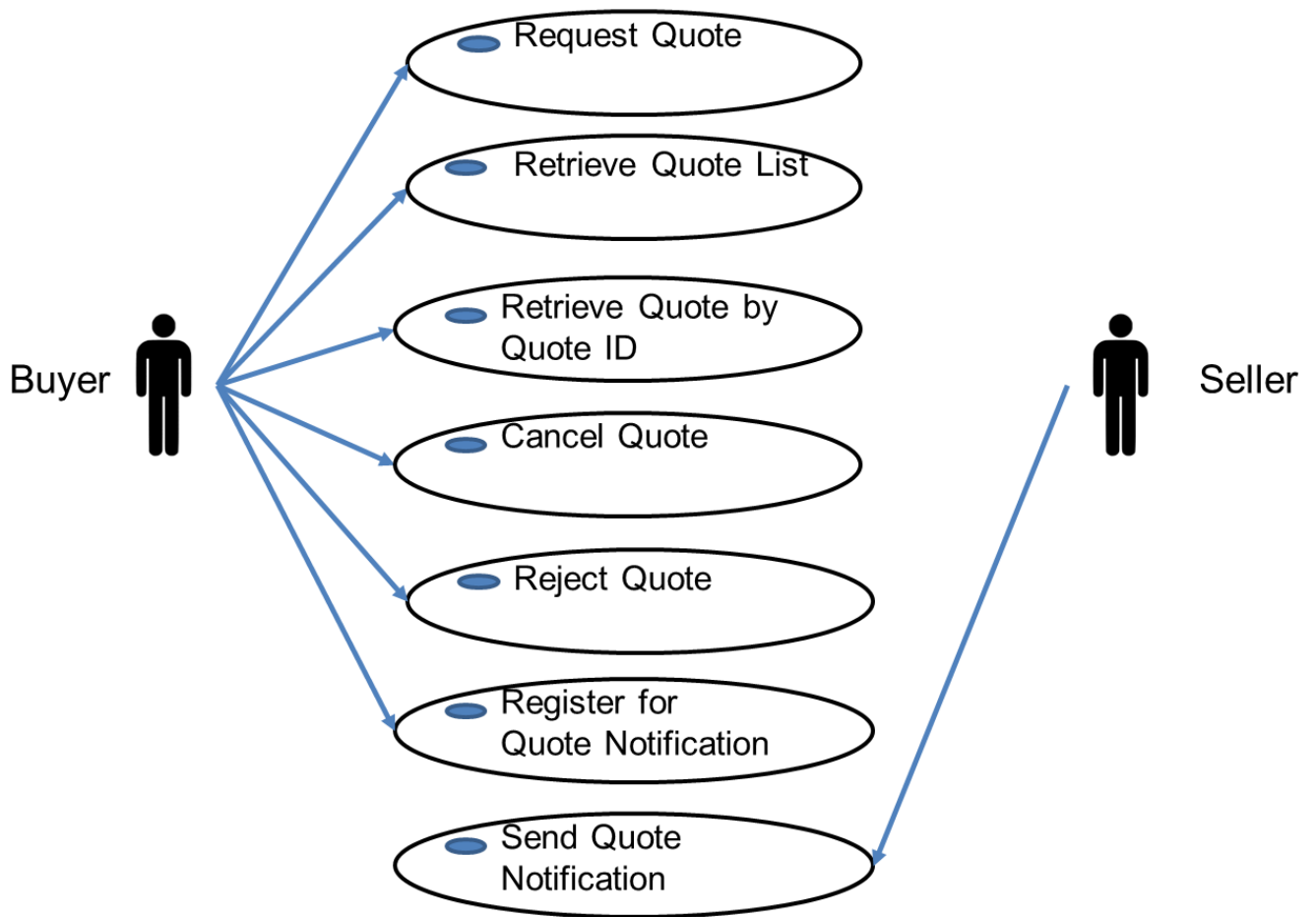


Figure 2 – Quote Use Cases

Use Case #	Use Case Name	Use Case Description
1a	Request Quote Immediate Quote Response	The Buyer requests a Product Quote from the Seller and requests an Immediate Quote Response.
1b	Request Quote Deferred Quote Response, Deferred Response Provided	The Buyer requests a Product Quote from the Seller and does not request an Immediate Quote Response. The Seller provides a Deferred Quote Response.
1c	Request Quote Deferred Quote Response, Immediate Response Provided	The Buyer requests a Product Quote from the Seller and does not request an Immediate Quote Response. The Seller provides an Immediate Quote Response.
2	Retrieve Quote List	The Buyer requests a list of Product Quotes from the Seller based on Product Quote filter criteria.
3	Retrieve Quote by Id	The Buyer requests detailed information related to a single Product Quote based on a Quote Identifier.

4	Cancel Quote by Quote Identifier	The Buyer requests to Cancel a Product Quote that is IN_PROGRESS or IN_PROGRESS_DRAFT state.
5	Reject Quote by Quote Identifier	The Buyer requests to Reject a Product Quote that is in the “ORDERABLE” or “ORDERABLE_ALTERNATE” state.
6	Register for Quote Notification	The Buyer registers for Notifications from the Seller.
7	Send Quote Notification	Seller sends Notifications to the Buyer

Table 3 – Use Case Table

- [D1] For all Addresses that have not been validated, a Buyer **SHOULD** initiate a Validate Address request, to get the Seller’s full details associated with this Address prior to submitting a Create Quote Request.
- [D2] For all Addresses that have been validated, the Buyer **SHOULD** use the Seller’s Address Identifier to describe the location when submitting a Create Quote Request and a Service Site Identifier does not exist.

A Seller assigns a Site Identifier to an address at some point in the POQ, Quote, or Order process. This is dependent upon the Seller and their processes. If a Site Identifier has been assigned by the Seller then the following requirements ([D3], [D4]) apply.

- [D3] After validating an Address, a Buyer **SHOULD** initiate a Retrieve Service Site List request and obtain the Seller’s Service Site Identifiers for all Service Sites of interest prior to submitting a Create Quote Request.
- [D4] Once the Buyer has obtained the Service Site list, then for all subsequent operations related to this Service Site, the Buyer **SHOULD** use the Seller’s Service Site Identifier to reference this Service Site when submitting a Create Quote Request.

The Buyer being on-boarded with the Seller is a Pre-Condition for all Use Cases. The on-boarding process includes the Buyer and Seller agreeing to several items including the language used for communication between the parties and the currency type used for price information.

The Related Product Identifier used in the Product Relationship may be specified by the Buyer as either a specific value or a list of Related Product Identifiers having the same relationship type. If a list of values is provided, the list is processed by the Seller rather than a specific value. From the list of values provided by the Buyer, the Seller is able to return the best result for the Quote Request over any of the Related Product Identifiers in the list. The Product Identifiers in the list may be grouped by some logical criteria as agreed to by the Buyer and the Seller. As an example, the Buyer may include a list of interconnection Product Identifier between the Buyer and Seller. The Seller may require that the Product Identifiers in the list be in the same Geographic Area (same city, same county, etc.). Table 5 defines the details for Quote Use Case 1a.

Field	Description
Use Case Number	1a
Use Case Name	Request Quote with an Immediate Quote Response
Description	The Buyer requests a Product Quote from the Seller and requires an Immediate Quote Response
Actors	Buyer/Seller
Pre-Conditions	<ol style="list-style-type: none"> 1. Buyer must be authorized to purchase products from the Seller (Buyer on-boarded)
Process Steps	<ol style="list-style-type: none"> 1. The Buyer initiates and submits a Create Quote request as specified in section 9.2.1. 2. The Seller validates the Create Quote Request based on business validation rules and pre-conditions. 3. The Seller verifies the pre-order POQ Identifier, if provided. 4. The Seller returns an Immediate Quote Response as shown in section 9.2.2. 5. The Seller may move the Create Quote request to the ANSWERED, ORDERABLE_ALTERNATE, ORDERABLE, INSUFFICIENT_INFORMATION_PROVIDED, or UNABLE_TO_PROVIDE state. If in the ORDERABLE state, the response exactly matches the attributes in the Buyer's Create Quote request.
Post-Conditions	The Buyer obtains an Immediate Quote Response, including a Quote Identifier.
Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. If the Seller cannot provide an Immediate Quote Response, they return a message indicating they cannot provide an Immediate Quote response and move the Quote Request to the UNABLE_TO_PROVIDE state. 3. If the Seller mandated pre-ordering references are absent, they might reject the Quote Request and move the Quote Request to the INSUFFICIENT_INFORMATION_PROVIDED state. 4. If a POQ Identifier is provided in the Create Quote request, the Seller may verify that the attributes in the Create Quote request match the attributes in the Create POQ response.
Business Process	MEF 50.1 Order-to-Delivery

Table 4 – Use Case 1a Create Quote Request Immediate Quote Response

Note: Buyer may have completed pre-order Address validation, Site retrieval and check, and/or POQ.

Table 5 defines the details for Quote Use Case 1b.

Field	Description
Use Case Number	1b
Use Case Name	Request Quote with Deferred Response, Deferred Provided
Description	The Buyer requests a Product Quote from the Seller
Actors	Buyer/Seller
Pre-Conditions	<ol style="list-style-type: none"> 1. Buyer must be authorized to purchase products from the Seller (Buyer on-boarded)
Process Steps	<ol style="list-style-type: none"> 1. The Buyer initiates and submits a request for a quote as specified in section 9.2.1 and does not specify that an Immediate Quote Response is required. 2. The Seller validates the Create Quote Request based on business validation rules and pre-conditions. 3. The Seller verifies the requested date and time by which a response is to be provided and determines that they will not provide an Immediate Quote Request response. 4. The Seller verifies the pre-order POQ Identifier, if provided. 5. The Seller returns a Deferred Quote Response with a Quote Identifier. 6. The Seller begins to work on the Quote. 7. The Seller may move the Create Quote request to the IN_PROGRESS, IN_PROGRESS_DRAFT, ANSWERED, ORDERABLE_ALTERNATE, ORDERABLE, INSUFFICIENT_INFORMATION_PROVIDED, or UNABLE_TO_PROVIDE state. If in the ORDERABLE state it exactly matches the attributes in the Buyer's Create Quote request
Post-Conditions	The Buyer obtains either a Deferred Quote Responses. The Buyer may require more than one notification about the Quote Request. The Buyer either queries the Quote Identifier to obtain status updates or subscribes to Notifications from the Seller and the Seller notifies the Buyer of Quote state changes.

Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. If the Seller mandated pre-ordering references are absent, they might reject the quote request. 3. If a POQ Identifier is provided in the Create Quote request, the Seller may verify that the attributes in the Create Quote request match the attributes in the Create POQ response.
Business Process	MEF 50.1 Order-to-Delivery

Table 5 – Use Case 1b Request Quote without Immediate Quote Response

Note: Buyer may have completed pre-order Address validation, Site retrieval and check, and/or POQ.

Table 6 defines the details for Quote Use Case 1c

Field	Description
Use Case Number	1c
Use Case Name	Request Quote with a Deferred Quote Response, Immediate Provided
Description	The Buyer requests a Product Quote from the Seller and does not specify an Immediate Quote Response, but the Seller provides an Immediate Quote Response.
Actors	Buyer/Seller
Pre-Conditions	<ol style="list-style-type: none"> 1. Buyer must be authorized to purchase products from the Seller (Buyer on-boarded)
Process Steps	<ol style="list-style-type: none"> 1. The Buyer initiates and submits a request for a quote as specified in section 9.2.1. For Product Specific Attributes, the Buyer may provide one or more placeholder attribute values that may be ignored by the Seller. 2. The Seller validates the Create Quote Request based on business validation rules and pre-conditions. 3. The Seller verifies the requested date and time by which a response is to be provided. 4. The Seller verifies the pre-order POQ Identifier, if provided. 5. The Seller returns an Immediate Quote Response as shown in section 9.2.2. 6. The Seller may move the Create Quote request to the ANSWERED, ORDERABLE_ALTERNATE, ORDERABLE, INSUFFICIENT_INFORMATION_PROVIDED, or UNABLE_TO_PROVIDE state. If in the ORDERABLE state it exactly matches the attributes in the Buyer’s Create Quote request.
Post-Conditions	The Buyer obtains an Immediate Quote Response, including a Quote Identifier.

Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. If the Seller mandated pre-ordering references are absent, they might reject the quote request. 3. If a POQ Identifier is provided in the Create Quote request, the Seller may verify that the attributes in the Create Quote request match the attributes in the Create POQ response. The value of some attributes may be ignored at the time of the Quote processing and not validated until the fulfillment process.
Business Process	MEF 50.1 Order-to-Delivery

Table 6 – Use Case 1c Request Quote with Deferred Response, Immediate Provided

Note: Buyer may have completed pre-order Address validation, Site retrieval and check, and/or POQ.

Note: In Use Cases 1a, 1b, and 1c, a Create Quote request cannot be modified once submitted. If the Buyer wants to change the Create Quote request attributes they can Cancel or Reject the Quote and submit another Create Quote request with the correct attribute values. This is also true if the Seller determines that the Quote Request is unable to be provided due to an error in the Buyer provided attributes.

Table 7 defines the details for Quote Use Case 2.

Field	Description
Use Case Number	2
Use Case Name	Retrieve Quote List
Description	The Buyer requests a list of Product Quotes from the Seller based on Product Quote filter criteria.
Actors	Buyer/Seller
Pre-Conditions	<ol style="list-style-type: none"> 1. Buyer must be authorized to purchase products from the Seller (Buyer on-boarded).
Process Steps	<ol style="list-style-type: none"> 1. The Buyer submits a Retrieve Quote List request as shown in section 9.4.1 based on the filter criteria options. 2. The Seller receives the request and validates the request. 3. The Seller determines if there are any quotes that match the filter criteria in the request. 4. The Seller returns a summarized list of quote instances as specified in section 9.4.2 including the Quote Identifier for each instance in the list.
Post-Conditions	Buyer has received a list of summarized quotes.

Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. If the Seller cannot find a match to the given criteria, a response is returned to the Buyer indicating this. 3. If the Seller finds too many matches (the definition of “too many” is at the Seller’s discretion), the response indicates this condition and no results are returned. In this case, the Buyer would likely elect to reinitiate the Retrieve Quote List request using more specific criteria to obtain a match.
Business Process	MEF 50.1 Order-to-Delivery

Table 7 – Retrieve Quote List

Table 8 defines the details for Quote Use Case 3.

Field	Description
Use Case Number	3
Use Case Name	Retrieve Quote by Quote Identifier
Description	The Buyer requests a single Product Quote based on its Quote Identifier.
Actors	Buyer/Seller
Pre-Conditions	<ol style="list-style-type: none"> 1. Buyer must be authorized to purchase products from the Seller (Buyer on-boarded). 2. Buyer knows the identifier of the product quote instance to be retrieved.

Process Steps	<ol style="list-style-type: none"> 1. The Buyer submits a request to retrieve information associated with a single Quote by Quote Identifier as shown in section 9.5.1. 2. The Seller receives the request and validates the request. 3. The Seller determines if there is a quote instance that matches the identifier. 4. The Seller returns the matching quote instance with all the attributes as shown in section 9.5.2.
Post-Conditions	Buyer has detailed information on the specified Quote Identifier.
Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. The Seller will return an error if the quote instance with the specified quote identifier is not found. 3. If the Seller has archived a Quote Request after reaching a final state, the Seller will return an error since the Quote Identifier is no longer able to be retrieved. The timeframe that a Quote in the final state remains available to be retrieved is agreed to by the Buyer and Seller during the on-boarding process.
Business Process	MEF 50.1 Order-to-Delivery

Table 8 – Retrieve Quote by Id

Table 9 defines the details for Quote Use Case 4.

Field	Description
Use Case Number	4
Use Case Name	Cancel a Quote by Quote Identifier
Description	The Buyer requests to Cancel a Product Quote in the IN_PROGRESS or IN_PROGRESS_DRAFT state.
Actors	Buyer/Seller
Pre-Conditions	The Quote state is IN_PROGRESS or IN_PROGRESS_DRAFT.
Process Steps	<ol style="list-style-type: none"> 1. The Buyer submits a Cancel Quote Request with the Seller Quote Identifier as shown in section 9.3. 2. The Seller receives the request for cancellation of a quote and validates the request. 3. Seller verifies that the referenced Quote Identifier exists. 4. Seller verifies that the current Quote state of the referenced Quote Identifier allows the transition to CANCELLED. 5. The Seller sets the Quote as CANCELLED. 6. The Seller provides a response to the Buyer as shown in section 9.2.2.

Post-Conditions	The Buyer receives a response that the referenced Quote Identifier has been cancelled.
Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. The Seller will send an error if the quote to be cancelled does not exist. 3. The Seller will send an error if they are unable to Cancel the quote because the referenced Quote Identifier is not in the correct Quote State. As an example, a request to cancel a Quote that is not in the IN_PROGRESS , or IN_PROGRESS_DRAFT state would generate an error from the Seller.
Business Process	MEF 50.1 Order-to-Delivery

Table 9 – Cancel Quote

[R1] The Seller **MUST** provide the ability for a Buyer to cancel a Create Quote Request when the Quote Request is in the following states: IN_PROGRESS, IN_PROGRESS_DRAFT.

Table 10 defines the details for Quote Use Case 5.

Field	Description
Use Case Number	5
Use Case Name	Reject a Quote by Quote Identifier
Description	The Buyer requests to Reject a Product Quote that is in the ORDERABLE or ORDERABLE_ALTERNATE state.
Actors	Buyer/Seller
Pre-Conditions	The Quote state is ORDERABLE or ORDERABLE_ALTERNATE.
Process Steps	<ol style="list-style-type: none"> 1. The Buyer submits a Reject Quote Request with the Quote Identifier as shown in section 9.3. 2. The Seller receives the request for rejection of a quote and validates the request. 3. Seller verifies that the referenced Quote Identifier exists. 4. Seller verifies that the current Quote state of the referenced Quote Identifier allows the transition to REJECTED. 5. The Seller sets the Quote as REJECTED. 6. The Seller provides a response to the Buyer as shown in section 9.2.2.
Post-Conditions	The Buyer receives a response that the referenced Quote Identifier has been rejected.

Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. The Seller sends an error if the quote to be rejected does not exist. 3. The Seller sends an error if they are unable to Reject the quote because the referenced Quote Identifier is not in the correct Quote State.
Business Process	MEF 50.1 Order-to-Delivery

Table 10 – Reject a Quote

[R2] The Seller **MUST** provide the ability for a Buyer to reject a Quote Request when the Quote Request is in the following states: ORDERABLE_ALTERNATE, ORDERABLE.

Table 11 defines the details for Quote Use Case 6.

Field	Description
Use Case Number	6
Use Case Name	Register for Quote Notifications
Description	<p>A request initiated by the Buyer to instruct the Seller to send notifications of Quote state changes. Notifications are sent for both Immediate and Deferred Quote Responses. Notifications Types are:</p> <ul style="list-style-type: none"> • Quote creation • Quote state change • Quote level change (only applicable when Quote is in IN_PROGRESS_DRAFT state)
Actors	Buyer/ Seller
Pre-Conditions	Buyer must be authorized to purchase products from the Seller (Buyer on-boarded).
Process Steps	<ol style="list-style-type: none"> 1. The Buyer sends the Register for Quote Notifications as shown in section 9.8.1 request to the Seller specifying the criteria of where to send such notifications and which Notification Types to include in notifications. 2. The Seller receives this request, records which notifications to send, where to send such notifications for this Buyer, and returns an acknowledgement to the Buyer as shown in section 9.8.2.
Post-Conditions	The Seller is aware of where to send notifications of Quote state changes as described in Use Case 7 in Table 12.

Alternative Paths	<ol style="list-style-type: none"> 1. The Seller returns an error message if an error is encountered while processing that prevents the Seller from completing the request. 2. The Seller returns an error message if they do not support notifications.
Business Process	MEF 50.1 Lead-Response-to-Contract

Table 11 – Register for Notifications

Note: Notifications are sent per Quote Identifier. Each Quote contains one or more Quote Item Identifier(s). A Quote Item Identifier state change may result in a Quote Identifier state change. See section 10 for more details on Quote and Quote Item states and their interaction.

Table 12 defines the details for Quote Use Case 7.

Field	Description
Use Case Number	7
Use Case Name	Send Quote Notifications
Description	<p>The Seller sends notifications for the following qualifying events:</p> <ul style="list-style-type: none"> • Create • Quote state change • Quote level change • Quote level change (only applicable when Quote is in IN_PROGRESS_DRAFT state)
Process Steps	<ol style="list-style-type: none"> 1. The Seller sends the notification to the location(s) requested by the Buyer as shown in section 9.9.
Post-Conditions	The Seller has sent quote related notification.
Alternative Paths	If the notification fails, the Seller may continue to try to send notifications to the endpoint or may mark that end point as failed and stop sending notifications to that endpoint.
Business Process	MEF 50.1 Lead-Response-to-Contract

Table 12 – Quote Notifications

9 Quote Operation Attributes

This section identifies the attributes needed for each of the Quote Use Cases defined previously. It is important to note that this section defines the superset of all MEF-defined attributes needed to support the Use Cases for Quote Management defined in this document.

The columns in the tables are as follows:

Attribute	The name of the attribute
Description	A short description of the attribute
Type	Specified data type for the attribute such as string, integer, duration, date/time, or reference to another entry in the table
Comments	Comments about the attribute

9.1 Attribute Tables

The tables below identify and describe the attributes related to Quote.

9.1.1 Buyer and Seller Attributes

Table 13 shows the Buyer and Seller attributes.

Attribute	Description	Type	Comments
Buyer	The mutually agreed unique name of the organization that is acting as the customer in this transaction within the Seller's system.	String	See section 9.10 for rules on use of Buyer
Seller	The mutually agreed unique name of the organization that is acting as the supplier in this transaction within the Seller's system.	String	See section 9.10 for rules on use of Seller
Seller Response Code	A response identifier, indicating if the Seller was able to successfully accept the request. The detailed response options are for further study but include: Success and Failure.	String	For further study

Table 13 – Buyer and Seller Information

[R3] The Seller Response Code **MUST** be included in all Seller responses.

9.1.2 Quote Attributes

Table 14 shows the Quote level attributes.

Attribute	Description	Type	Comments
Seller Quote Identifier	Unique (within the Seller quoting domain) identifier for the quote, as attributed by the Seller.	String	The identifier created by the Seller when the product quote instance is created.
Buyer Quote Identifier	Identifier given by the Buyer to facilitate Buyer searches subsequently.	String	Set by the Buyer
Buyer Project Identifier	A project identifier associated to the Quote. A project may, for example, be used to relate multiple requests together such as Quote Requests, Product Orders, etc.	String	Optional attribute set by the Buyer.
Description	Description of the Quote.	String	Optional attribute set by the Buyer
Quote State	The state of the Quote.	One of <ul style="list-style-type: none"> • ACCEPTED • ANSWERED • CANCELLED • EXPIRED • IN_PROGRESS • IN_PROGRESS_DRAFT • INSUFFICIENT_INFORMATION_PROVIDED • ORDERABLE_ALTERNATE • ORDERABLE • REJECTED • UNABLE_TO_PROVIDE 	Set by the Seller



Attribute	Description	Type	Comments
Quote Request Date	Date when the Quote was created within the Seller's system	DateTime	This value is set by the Seller.
Quote ORDERABLE Date	Date when the Quote State was set to ORDERABLE.	DateTime	This value is set by the Seller.
Quote ORDERABLE_ALTERNATIVE Date	Date when the Quote State was set to ORDERABLE_ALTERNATIVE.	DateTime	This value is set by the Seller.
Quote CANCELLED Date	Date when the Quote State was set to CANCELLED.	DateTime	This value is set by the Seller.
Quote REJECTED Date	Date when the Quote State was set to REJECTED.	DateTime	This value is set by the Seller.
Quote EXPIRED Date	Date when the Quote State was set to EXPIRED.	DateTime	This value is set by the Seller.
Quote ACCEPTED Date	Date when the Quote State was set to ACCEPTED.	DateTime	This value is set by the Seller.
Quote ANSWERED Date	Date when the Quote State was set to ANSWERED.	DateTime	This value is set by the Seller.
Quote UNABLE_TO_PROVIDE Date	Date when the Quote State was set to UNABLE_TO_PROVIDE.	DateTime	This value is set by the Seller.
Quote INSUFFICIENT_INFORMATION_PROVIDED Date	Date when the Quote State was set to INSUFFICIENT_INFORMATION_PROVIDED.	DateTime	This value is set by the Seller.
Expected Quote Completion Date	This is the date provided by the Seller to indicate expected Quote completion date.	DateTime	This value is set by the Seller. When an Instantaneous Synchronous Response is provided this is the current date.
Valid Until Date	The date that the quote is valid until.	DateTime	Set by the Seller
Buyer Requested Quote Level	An indication of whether the Buyer's Quote Request is for a Budgetary or Firm Quote Level.	One of the following: <ul style="list-style-type: none"> BUDGETARY FIRM 	Set by the Buyer. Buyer Requested Quote Level contains the possible values and may be set by the Buyer on the Request. All Quote Items in a

Attribute	Description	Type	Comments
			Quote have the same Quote Level.
Seller Quote Level	An indication of whether the Seller's Quote Response is Budgetary, Firm – Subject to Feasibility Check, or Firm.	One of the following: <ul style="list-style-type: none"> • BUDGETARY • FIRM – SUBJECT TO FEASIBILITY CHECK • FIRM 	Set by the Seller. The Seller Quote Level is provided by the Seller when responding to a Quote request. This represents the lowest Quote Item Level of all Quote Items included in the Quote.
Immediate Quote Response	If this flag is set to TRUE, Buyer requests an immediate quote be provided in the response to the creation of a quote. If TRUE, the Requested Quote Completion Date is ignored.	Boolean	Set by the Buyer. If set to FALSE, the Seller does not have to provide an immediate quote but may elect to. If set to TRUE and the Seller cannot accommodate the request, a Termination Error is returned, and the process is stopped.
Requested Quote Completion Date	This is the date desired by the Buyer to have the quote completed (meaning priced). The accuracy of the pricing might differ based on the Quote Level.	DateTime	Set by the Buyer if Immediate Quote Response is FALSE. If Immediate Quote Response is TRUE, this is ignored by the Seller.
Note	A set of unstructured notes associated to the quote. This can be empty.	List of Reference to a Note (see Table 23)	The notes may be defined by the Buyer or Seller
Quote Item	The Quote is composed of one or more Quote Items. This is the list of associated Quote Items.	List of Reference to a Quote Item (see Table 15)	
Agreement	The agreement(s) associated to the quote.	String	

Attribute	Description	Type	Comments
Buyer Contact Information	The contact information for the person or organization representing the Buyer that can answer questions related to this Quote request.	Reference to Contact Information (see Table 22)	Buyer Contact Information. This is required for a Quote request when Immediate Quote Response is FALSE. This is optional for a Quote request when Immediate Quote Response is TRUE.
Seller Contact Information	The contact information for the person or organization representing the Seller that can answer questions related to this Quote request.	Reference to Contact Information (see Table 22)	Set by the Seller
Quote Term	I assume that this is a NEW object that contains a list of Quote Item Terms. I found no definition of this object. See below for comments on Quote Item Term.		

Table 14 – Quote Attributes

9.1.3 Quote Item Attributes

Table 15 shows Quote Item attributes.

Attribute	Description	Type	Comments
Quote Item Reference Number	A Buyer provided identifier to identify Quote Items and to be able to relate them to one another.	String	This is set by the Buyer and is unique per Quote Request. Examples of Reference Number could be 1, 2, 3 or A, B, C. The Reference Number can be reused in multiple Quote Requests to identify a Quote Item within that Quote Request.
Quote Item Action	Action to be performed on this Quote Item. This corresponds to the Order Item Action when an	String that is one of <ul style="list-style-type: none"> • INSTALL • CHANGE 	Set by the Buyer

Attribute	Description	Type	Comments
	associated product is ordered.	<ul style="list-style-type: none"> DISCONNECT 	
Requested Quote Item Term	The terms of the Quote Item	Reference to a Quote Item Term (see Table 17)	Used to describe a term (also known as commitment) for a Quote Item. Each Quote Item in a Quote Request could have a different Requested Quote Item Term. The Buyer specifies the longest term that they would accept. The Buyer may be willing to accept a shorter term. If the Seller responds with a term longer than the Buyer's request, it is treated as an alternate response.
Requested Quote Item Installation Interval Unit	The Unit for the Installation Interval Value.	String that is one of <ul style="list-style-type: none"> BUSINESS_DAYS BUSINESS_HOURS BUSINESS_MINUTES CALENDAR_DAYS CALENDAR_HOURS CALENDAR_MINUTES 	Set by the Buyer. This value is \geq the installation interval returned by the Seller in the POQ.
Requested Quote Item Installation Interval Value	The installation interval that the Buyer desires the Quote Item to be installed after receipt of the order.	Integer	Set by the Buyer. This value is \geq the installation interval returned by the Seller in the POQ.
Product Identifier	The Buyer's existing Product for which the quote is being requested.	String	Set by the Buyer if the Quote Item Action is CHANGE or DISCONNECT. Otherwise, set by the Seller.

Attribute	Description	Type	Comments
Product Offering Identifier	The Product Offering associated to the product for a new service.	String	Set by the Buyer if the Quote Item Action is INSTALL. Otherwise, set by the Seller.
Product Specific Attributes	The technical attributes for the Product that would be delivered to fulfill this Quote Item. This essentially specifies the values for attributes defined in the Product Specification. The detail of the Product Specification is for further study.		For further study.
Seller Quote Item Level	The Quote Item Level set by the Seller in their response.	A string that is one of: <ul style="list-style-type: none"> • BUDGETARY • FIRM – SUBJECT_TO_FEASIBILITY_CHECK • FIRM 	If the Buyer's Request has the Quote Level set to BUDGETARY, the Seller's response must be BUDGETARY. If the Buyer's Request has the Quote Level set to FIRM, the Seller's response must be either FIRM – SUBJECT_TO_FEASIBILITY_CHECK or FIRM.
Place Relationship	The relationship between this Quote Item and Place	List of Reference to Place Relationship (see Table 25)	List of Places
Quote Item Location Contact	The person to call to get access to this Service Site in case such access is required to complete the evaluation of this Quote Item.	Reference to Contact Information (see Table 22)	
Quote Item Relationship	The relationship between Quote Items within the same Quote. Shown as a list.	List of Reference to Quote Item Relationship (see Table 20)	
Product Relationship	The relationship between a Quote Item and an existing Product Identifier shown as a list.	List of Reference to Product Relationship (see Table 21)	

Attribute	Description	Type	Comments
Note	A set of unstructured notes associated to the Quote Item. This can be empty.	List of Reference to a Note (see Table 23)	The notes may be defined by the Buyer or Seller
Agreement Name	Name of the agreement. The name is unique between the Buyer and Seller.	String	Agreement Name is a unique method of identifying a contract, service description, or other identifier.
POQ Item	The Product Offering Qualification Item associated to this Quote Item.	Reference to a POQ Item (see Table 24)	The POQ Item may be required by the Seller. In that case this is a mandatory field. If the Seller does not require the POQ, then this is an optional attribute.
Quote Item State	The state of the Quote Item	One of <ul style="list-style-type: none"> • IN_PROGRESSED • IN_PROGRESS_DRAFT • ORDERABLE_ALTERNATE • UNABLE_TO_PROVIDE • ORDERABLE • ABANDONED 	Set by the Seller.
Quote Item Price	Price associated to the Quote Item.	Reference to a Quote Price (see Table 19)	
Quote Item Term	Quote Item Term	Reference to Quote Term (see Table 17)	
Quote Item Deal Reference	A pre-agreed pricing modifier reference that the Seller is offering to the Buyer which will impact the price	String	Set by Buyer

Attribute	Description	Type	Comments
Quote Item Installation Interval	Quote Item Installation Interval	Reference to Quote Item Installation Interval (see Table 18)	
Termination Error	When the Seller cannot process the Quote Request, the Seller returns a text-based list of reasons here.	String	Set by the Seller. Reasons are for further study.

Table 15 – Quote Item Attributes

- [R4] If the Buyer’s Request has the Quote Level set to BUDGETARY, the Seller Quote Item Level in the Seller’s response **MUST** be BUDGETARY.
- [R5] If the Seller’s response is BUDGETARY and at least one Quote Item is in the ANSWERED state, the Quote state **MUST** be ANSWERED.
- [R6] If the Seller’s response is BUDGETARY and no Quote Items are in the ANSWERED state, the Quote state **MUST NOT** be ANSWERED.
- [R7] If the Seller’s response is BUDGETARY and the Quote is in a terminal state, all Quote Items **MUST** be in a terminal state as shown in Figure 5.
- [R8] If the Buyer’s Request has the Quote Level set to FIRM, the Seller Quote Item Level in the Seller’s response **MUST** be either FIRM – SUBJECT_TO_FEASIBILITY_CHECK or FIRM.

9.1.4 Cancel or Reject Quote Request Attributes

Table 16 shows the Cancel or Reject Quote Request level attributes.

Attribute	Description	Type	Comments
Seller Cancel or Request Quote Request Identifier	Unique (within the Seller quoting domain) identifier for the quote, as attributed by the Seller.	String	Set by the Seller
Seller Quote Identifier	Unique (within the Seller quoting domain) identifier for the quote, as attributed by the Seller.	String	Set by the Buyer to match the Quote Request that the Buyer desires to Cancel or Reject.
Buyer Quote Identifier	Identifier given by the Buyer to facilitate Buyer searches subsequently.	String	Set by the Buyer

Attribute	Description	Type	Comments
Reason	Allows the Buyer to specify a reason for the Cancel or Reject Quote Request	String	Set by the Buyer
Requested Quote State	The state, either CANCELLED or REJECTED, which the Buyer wants to move the specified Quote Identifier to.	One of <ul style="list-style-type: none"> • CANCELLED • REJECTED 	Set by Buyer

Table 16 – Cancel or Reject Quote Attributes

9.1.5 Quote Item Term Attributes

Table 17 shows Quote Item Term attributes. A Quote Item Term is the length of the contract commitment by the Buyer for each Quote Item.

Attribute	Description	Type	Comments
Quote Item Term Name	Name of the term	String	Set by the Seller
Quote Item Term Description	Description of the term	String	Set by the Seller
Quote Item Term Duration	Duration of the term	Duration	Set by the Buyer in the Request, set by the Seller in the Response. The Seller bases their response on the Requested Quote Item Term in the Quote Request. The Seller provides the term that is closest to the Buyer’s requested term. That term may be longer or shorter than the requested term. If shorter it is treated as an alternate response.

Attribute	Description	Type	Comments
Seller End of Term Action	The action the Seller will take once the term expires.	Indicator with following allowed values: <ul style="list-style-type: none"> • Roll • Auto-disconnect • Auto-renew 	Set by the Seller. Roll indicates that the Product’s contract will continue on a rolling basis for the duration of the Roll Interval at the end of the Quote Item Term. Auto-disconnect indicates that the Product will be disconnected at the end of the Quote Item Term. Auto-renew indicates that the Product’s contract will be automatically renewed for the Quote Item Term Duration at the end of the Quote Item Term.
Roll Interval	The recurring period that the Buyer must pay to the end of upon disconnecting the Product after the original term has expired.	Duration	Set by Seller

Table 17 – Quote Item Term Attributes

9.1.6 Quote Item Installation Interval Attributes

Table 18 shows Quote Item Installation Interval Attributes

Attribute	Description	Type	Comments
Quote Item Installation Interval	The Unit for the Installation Interval Value.	One of <ul style="list-style-type: none"> • BUSINESS_DAYS • BUSINESS_HOURS • BUSINESS_MINUTES • CALENDAR_DAYS • CALENDAR_HOURS • CALENDAR_MINUTES 	This is set by the Seller. To move the Quote Request to the ORDERABLE state, the value must be \leq the Requested Quote Item Installation Interval set by the Buyer. If the Seller returns a value $>$ the Requested Quote Item Installation Interval, the Quote moves to the ORDERABLE_ALTERNATE state.
Quote Item Installation Interval Value	The installation interval that the Buyer desires the Quote Item to be installed after receipt of the order.	Integer	This is set by the Seller. To move the Quote Request to the ORDERABLE state, the value must be \leq the Requested Quote Item Installation Interval set by the Buyer. If the Seller returns a value $>$ the Requested Quote Item Installation Interval, the Quote moves to the ORDERABLE_ALTERNATE state.

Table 18 – Quote Item Installation Interval Attributes

9.1.7 Quote Item Price Attributes

Table 19 shows Quote Item Price attributes.

Attribute	Description	Type	Comments
Quote Item Price Name	Name of the Quote/Quote Item price.	String	Set by the Seller
Quote Item Price Description	Description of the Quote/Quote Item price.	String	Set by the Seller

Attribute	Description	Type	Comments
Quote Item Price Type	Indicates if the price is for recurring or non-recurring charges.	One of <ul style="list-style-type: none"> • RECURRING • NON_RECURRING • USAGE_BASED 	Set by the Seller
Quote Item Price Recurring Charge Period	Used for a recurring charge to indicate period	One of <ul style="list-style-type: none"> • HOUR • DAY • WEEK • MONTH • YEAR 	
Quote Item Price Unit Of Measure	Unit of Measure (Gb, SMS volume, etc.) if Quote Item Price Type = USAGE_BASED	String	Set by the Seller if Quote Item Price Type = USAGE_BASED
Quote Item Price	The associated price.	Reference to a Price (see Table 26)	Set by the Seller

Table 19 – Quote Item Price Attributes

9.1.8 Quote Item Relationship Attributes

Table 20 shows Quote Item Relationship attributes.

Attribute	Description	Type	Comments
Quote Item Relationship Identifier	Identifier of the related Quote Item (must be in the same quote).	String	Set by Buyer

Attribute	Description	Type	Comments
Quote Item Relationship Nature	Specifies the nature of relationship to the related Quote Items. The nature of required relationships vary for Products of different types. For example, a UNI or ENNI Product may not have any relationships, but an Access E-Line may have two mandatory relationships (related to the UNI on one end and the ENNI on the other). More complex Products such as multipoint IP or Firewall Products may have more complex relationships. As a result, the allowed and mandatory Relationship Nature values are defined in the Product Specification.	String that is one of the relationship types specified in the Product Specification.	Set by the Buyer

Table 20 – Quote Item Relationship Attributes

9.1.9 Product Relationship Attributes

Table 21 shows Product Relationship attributes.

Attribute	Description	Type	Comments
Product Relationship Identifier	A list of one or more IDs of the related products in the inventory. Since these IDs are stored in inventory, they can apply to any Quote Item of any Quote.	List	Set by Buyer

Attribute	Description	Type	Comments
Product Relationship Nature	Specifies the nature of relationship to the related Product. The nature of required relationships vary for Products of different types. For example, a UNI or ENNI Product may not have any relationships, but an Access E-Line may have two mandatory relationships (related to the UNI on one end and the ENNI on the other). More complex Products such as multipoint IP or Firewall Products may have more complex relationships. As a result, the allowed and mandatory Relationship Nature values are defined in the Product Specification.	String that is one of the relationship types specified in the Product Specification.	Set by the Buyer

Table 21 – Product Relationship Attributes

Note: The Buyer may provide a list of Product IDs at the time the Create Quote Request is submitted based on what is agreed to by the Buyer and Seller.

9.1.10 Contact Information Attributes

Table 22 shows Contact Information attributes.

Attribute	Description	Type	Comments
Contact Name	The person or organization to be contacted.	String	
Contact Phone Number	The telephone number for this contact.	String	
Contact Phone Number Extension	The telephone number extension for this contact.	String	

Contact email Address	The email address for this contact.	String	
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Table 22 – Contact Information Attributes

9.1.11 Note Attributes

Table 23 shows Note attributes.

Attribute	Description	Type	Comments
Note Date	The date of the note.	DateTime	Set by Buyer or Seller. The Buyer creates a note when requesting the quote. The Seller may add notes.
Note Author	The author of the note.	String	
Note Text	The text of the note.	String	

Table 23 – Note Attributes

9.1.12 POQ Item Attributes

Table 24 shows POQ attributes.

Attribute	Description	Type	Comments
POQ Identifier	Identifier of the Product Offering Qualification	String	Reference to a POQ. Provided by the Buyer from the Seller’s response to a Create POQ Request as specified in MEF 79 [11]. The Seller can make this field mandatory or optional. If mandatory, the Buyer must include the POQ Identifier.
POQ Item Identifier	Identifier of the Product Offering Qualification Item	String	A unique identifier of the POQ item. Provided by the Buyer from the Seller’s response to a Create POQ Request as specified in MEF 79 [11]. Seller can make this field mandatory or optional.

Attribute	Description	Type	Comments
Alternate Product Proposal Identifier	A unique identifier for this Alternate Product Proposal assigned by the Seller.	String	If the Buyer has performed a POQ and desires to select one and only one of the Alternate Project Proposals per Quote Item they identify the alternate proposal using the Alternate Project Proposal Identifier from the POQ response as specified in MEF 79 [11].

Table 24 – POQ Attributes

9.1.13 Place Attributes

Table 25 shows Place Attributes

Attribute	Description	Type	Comments
Role	The role of the place as specified in the Product Specification	String	Set by the Buyer as defined by the Seller in the Product Specification
Quote Item Location Type	The method used to describe the location at which this Quote Item is installed or is to be installed if needed per the Product Specification.	String that is one of: <ul style="list-style-type: none"> • SERVICE_SITE_IDENTIFIER • FIELDDED_ADDRESS • FORMATTED_ADDRESS • GEOGRAPHIC_POINT • ADDRESS_REFERENCE 	The Buyer is encouraged to use the Seller’s SERVICE_SITE_IDENTIFIER if one exists. If one does not exist, then the Buyer may use any other Quote Item Location Type.

Attribute	Description	Type	Comments
Quote Item Location	The detailed location at which this Quote Item is installed or is to be installed if this Quote Item is to be installed at a particular location.	Reference to MEF 79 [11]: <ul style="list-style-type: none"> • Service Site (see MEF 79 sec 8.10) • Fielded Address (see MEF 79 sec 8.9.2) • Formatted Address (see MEF 79 sec 8.9.3) • Global Address Reference (see MEF 79 sec 8.9.4) • Geographic Point (see MEF 79 sec 8.9.5) 	

Table 25 – Place Attributes

9.1.14 Price Attributes

Table 26 shows Price attributes.

Attribute	Description	Type	Comments
Price Tax Rate	The tax rate applied.		This is an optional attribute set by the Seller.

Attribute	Description	Type	Comments
Price Tax Included Amount	All taxes included amount (expressed in the given currency).	Money <ul style="list-style-type: none"> • Currency • Value 	This is an optional attribute set by the Seller. If the Seller provides a BUDGETARY or FIRM – SUBJECT TO FEASIBILITY CHECK Response Level, the maximum value is provided here.
Price Duty Free Amount	All taxes excluded amount (expressed in the given currency).	Money <ul style="list-style-type: none"> • Currency • Value 	If the Seller provides a BUDGETARY or FIRM – SUBJECT TO FEASIBILITY CHECK Response Level, the maximum value is provided here.

Table 26 – Price Attributes

9.1.15 Register for Notification Attributes

Table 27 shows the Register for Notification attributes.

Attribute	Description	Type	Comments
Notification Address Information	The detailed information on the technical API end-point address specifying where the Seller is to send any Quote Notifications. There can be multiple locations for one Buyer.	String	This is the Callback address in the API

Attribute	Description	Type	Comments
List of Notification Types	The types of notifications that the Buyer wishes to receive. Each item in the list is either CREATE (send notification when a new Quote is created), QUOTE STATE CHANGE (send notification when there is a change to the state of the Quote or any Quote Item), or QUOTE LEVEL CHANGE (send notification when there is a change to the Quote Level attribute only when Quote is in IN_PROGRESS_DRAFT state)	List of one or more of: <ul style="list-style-type: none"> • CREATE • QUOTE STATE CHANGE • QUOTE LEVEL CHANGE 	This is a list of attributes
Action	Specification to Start Notifications or Stop Notifications.	One of: <ul style="list-style-type: none"> • START • STOP 	

Table 27 – Register for Quote Notifications Buyer Attributes

9.1.16 Notification Attributes

Table 28 shows Quote Notification attributes.

Attribute	Description	Type	Comments
Notification Type	The type of notification.	One of: <ul style="list-style-type: none"> • CREATE • QUOTE STATE CHANGE • QUOTE LEVEL CHANGE 	
Seller Quote Identifier	Unique (within the Seller quoting domain) identifier for the quote, as attributed by the Seller.	String	

Table 28 – Seller Quote Notification

9.2 Request Quote

The Buyer's request and the Seller's response are defined in the following sections.

9.2.1 Buyer Create Quote Request

This section contains the Service Attributes and requirements for Use Case 1a, 1b, and 1c. Table 13, Table 14, Table 15, Table 20, Table 22, Table 23, Table 24, and Place attributes as described in Table 25 contain the attributes that the Buyer may set in the Create Quote Request.

- [R9] The Seller **MUST** support either Use Case 1a or 1b.
- [O1] The Seller **MAY** support Use Cases 1a, 1b, and 1c.
- [R10] A Buyer **MUST** include at least one Quote Item in a Create Quote request.
- [R11] A Buyer requesting a Quote **MUST** include the following attributes as defined in Table 14:
- Buyer Requested Quote Level
 - Quote Item(s)
 - Buyer Contact Information (if Immediate Quote Response is FALSE)
- [R12] The Buyer **MUST** specify the following attributes in Table 15 for each Quote Item in the Buyer Create Quote request:
- Quote Item Reference Number
 - Quote Item Action
- [R13] The Buyer Create Quote request **MUST** include the following attributes for each Quote Item as defined in Table 15 when Quote Item Action is INSTALL:
- Product Offering Identifier
 - Product Specific Attributes
 - Quote Item Contact Information
- [O2] The Buyer Create Quote Request **MAY** include the following attributes for each Quote Item as defined in Table 15 when Quote Item Action is INSTALL:
- Requested Quote Item Installation Interval Unit
 - Requested Quote Item Installation Interval Value

- Quote Item Deal Reference

[CR1]<[O2] If the Buyer includes the Requested Quote Item Installation Interval Unit and Value in the Create Quote Request, they **MUST** be longer or equal to the interval returned in the POQ.

[R14] If the request includes a Quote Item that refers to a Product Offering requiring a location, the Buyer Create Quote request **MUST** include the Quote Item Location Type and Quote Item Location attributes as specified by the Seller.

[R15] If the Buyer provides a Quote Item Location Type and Quote Item Location attributes, they **MUST** comply with the format agreed to by the Buyer and Seller during the onboarding process.

[R16] If the Buyer desires to select an Alternate Product that was proposed in the POQ response, they **MUST** include a valid POQ Item Identifier and Alternate Product Proposal Identifier attribute in Table 24.

[R17] If the Buyer does not to desire to select an Alternate Product in their Create Quote request, they **MUST NOT** include the Alternate Product Proposal Identifier attribute in Table 24.

[R18] If Quote Action is INSTALL, the Buyer **MUST NOT** specify the Product Identifier attribute in Table 15.

[R19] The Buyer **MUST** specify the Immediate Quote Response and Requested Quote Completion Date attributes defined in Table 14 when initiating a Create Quote request.

[R20] If the Buyer has specified Immediate Quote Response to be TRUE, then the Seller **MUST** ignore the Expected Response Date attribute.

[O3] The Buyer Create Quote request **MAY** contain any of the other attributes in Table 13, Table 14, Table 15, Table 20, Table 22, Table 23, and Table 24.

[O4] The Seller **MAY** make the POQ Item Identifier mandatory for a Buyer Create Quote request.

[CR2]<[O4] The Buyer **MUST** provide the valid POQ Item Identifier(s) in the Quote Request as defined in Table 24 if required by the Seller.

[R21] The Buyer Create Quote request **MUST** include the following for each Quote Item as defined in Table 15 WHEN Quote Item Action is CHANGE or DISCONNECT:

- Product Identifier

[R22] If the Quote Item Action is CHANGE, the Buyer Create Quote Request **MUST** include the following for each Quote Item as defined in Table 15

- Product Specific Attributes

- Other attributes as specified by the Seller

[O5] The Buyer Create Quote Request **MAY** include the following attributes for each Quote Item as defined in Table 15 when Quote Item Action is CHANGE:

- Requested Quote Item Installation Interval Unit
- Requested Quote Item Installation Interval Value

[CR3]< [O5] If the Buyer includes the Requested Quote Item Installation Interval Unit and Value in the Create Quote Request, they **MUST** be longer or equal to the interval returned in the POQ.

[R23] If the request includes a Quote Item that a location is required for, the Buyer Create Quote request **MUST** include the Quote Item Place attributes as described in Table 25 .

[O6] The Seller **MAY** limit the Quote Item Location Types that can be included in a Create Quote Request. These are agreed to by the Buyer and Seller either through the on-boarding process or via the Seller's definitions.

[R24] If the Quote Action is DISCONNECT, the Buyer **MUST NOT** specify the following attributes in Table 15:

- Product Offering Identifier
- Product Specific Attributes
- Product Relationships
- Quote Item Place
- Quote Item Location Contact

[R25] The combined Requested Quote Item Installation Interval Unit and Requested Quote Item Installation Interval Value **MUST** be \geq the Installation Interval identified in the POQ via the Installation Interval Unit and the Installation Interval Value as described in MEF 79 [11].

9.2.2 Seller Request Quote Response

Table 13, Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25 contain the attributes that the Seller may respond to the Buyer's Create Quote request with.

[R26] The Seller **MUST** respond to a Quote Request with an Immediate Quote Response of TRUE with the information contained within Table 13, Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25.

- [R27] When providing a response to a Quote Request with an Immediate Quote Response of TRUE the Seller **MUST** specify the Seller Response Code attribute shown in Table 13.
- [R28] When providing a response to a Quote Request with an Immediate Quote Response of TRUE if the Seller Response Code indicates success, the Seller **MUST** specify the Quote Identifier attribute in Table 14 in the response.
- [R29] When providing a response to a Quote Request with an Immediate Quote Response of TRUE if the Seller Response Code indicates success, the Seller **MUST** specify the Quote State attribute in Table 14 in the response. This **MUST** be either ORDERABLE, ORDERABLE_ALTERNATE, UNABLE_TO_PROVIDE, or INSUFFICIENT_INFORMATION_PROVIDED.
- [R30] When providing a response to a Quote Request with an Immediate Quote Response of TRUE if the Seller Response code indicates success and the Quote state indicates ORDERABLE_ALTERNATE, then for each Quote Item in the request, the Seller **MUST** specify the Quote Items attribute in Table 15, Table 17, Table 19, and Table 20 in the response and all of those Quote Items **MUST** indicate a Quote Item State of ORDERABLE_ALTERNATE or ORDERABLE.
- [R31] When providing a response to a Quote Request with an Immediate Quote Response of TRUE if the Seller Response code indicates success and the Quote state indicates ORDERABLE or ORDERABLE_ALTERNATE, then for each Quote Item in the request, the Seller **MUST** specify the Seller End of Term Action of Roll, Auto-disconnect, or Auto-renew as shown in Table 17.
- [R32] If the Seller's response includes a Seller End of Term Action of Roll for a Quote Item, then the Seller **MUST** specify the Roll Interval as shown in Table 17.
- [R33] If the Seller's response includes a Seller End of Term Action of Auto-disconnect or Auto-renew, then the Seller **MUST NOT** specify the Roll Interval as shown in Table 17.
- [D5] The grace period after auto-renewal during which the Buyer can disconnect the Product without penalty **SHOULD** be agreed between Seller and Buyer as part of on-boarding if the Seller chooses to use the value "Auto-renew" for the Seller End of Term Action attribute.
- [R34] When providing pricing in a response the Seller **MUST** reference any valid Order Item Deal References as identified by the Buyer.
- [R35] When providing a response to a Quote Request with an Immediate Quote Response of TRUE if the Seller Response code indicates success and the Quote state indicates ORDERABLE, then for each Quote Item in the request, the Seller **MUST** specify the Quote Items attribute in Table 15, Table 17, Table 19, and Table 20 in the response and all of those Quote Items **MUST** indicate a Quote Item State of ORDERABLE.
- [R36] When providing a response to a Quote Request with an Immediate Quote Response of TRUE if the Seller Response code indicates success and the Quote state indicates

INSUFFICIENT_INFORMATION_PROVIDED, then for at least one of the Quote Items in the request, the Seller **MUST** specify the Quote Items attribute in Table 15, Table 17, Table 19, and Table 20 in the response that indicates a Quote Item State of INSUFFICIENT_INFORMATION_PROVIDED. In this case, the Seller **MUST** provide a response for each Quote Item in this Create Quote Request.

- [R37] The Seller's response to a Quote Request with an Immediate Quote Response of TRUE **MUST** include an Order Item Installation Interval Unit and Order Item Installation Interval Value that are \leq the Buyer's Requested Order Item Installation Interval Unit and Requested Order Item Installation Interval Value.
- [R38] When providing a response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is not providing an Immediate Quote Response, the Seller **MUST** specify the Seller Response Code attribute shown in Table 13.
- [R39] When providing a response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is not providing an Immediate Quote Response, if the Seller Response Code indicates success, the Seller **MUST** specify at least the Quote Identifier attribute in Table 14 in the response. Note that in this case, the Seller is to represent the Quote state as IN_PROGRESS per section 10.1.
- [R40] When providing a response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is not providing an Immediate Quote Response, if the Seller Response Code does not indicate success, the Seller **MUST NOT** specify the Quote Identifier attribute in Table 14 in the response.
- [R41] When providing a response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is providing an Immediate Quote Response, the Seller **MUST** specify the Seller Response Code attribute shown in Table 13.
- [R42] When providing response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is providing an Immediate Quote Response, if the Seller Response Code indicates success, the Seller **MUST** specify the Quote Identifier attribute in Table 14 in the response.
- [R43] When providing response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is providing an Immediate Quote Response, if the Seller Response Code indicates success, the Seller **MUST** specify the Quote State attribute in Table 14 in the response. This **MUST** be either ORDERABLE, ORDERABLE_ALTERNATE, UNABLE_TO_PROVIDE, or INSUFFICIENT_INFORMATION_PROVIDED.
- [R44] When providing response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is providing an Immediate Quote Response, if the Seller Response code indicates success and the Quote state indicates ORDERABLE_ALTERNATE, then for each Quote Item in the request, the Seller **MUST** specify the Quote Items attribute in Table 15, Table 17, Table 19, and Table 20 in the response and all of those Quote Items **MUST** indicate a Quote Item State of ORDERABLE_ALTERNATE or ORDERABLE.

- [R45] When providing response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is providing an Immediate Quote Response, if the Seller Response code indicates success and the Quote state indicates ORDERABLE, then for each Quote Item in the request, the Seller **MUST** specify the Quote Items attribute in Table 15, Table 17, Table 19, and Table 20 in the response and all of those Quote Items **MUST** indicate a Quote Item State of ORDERABLE.
- [R46] When providing response to a Quote Request with an Immediate Quote Response of FALSE and the Seller is providing an Immediate Quote Response, if the Seller Response code indicates success and the Quote state indicates INSUFFICIENT_INFORMATION_PROVIDED, then for at least one of the Quote Items in the request, the Seller **MUST** specify the Quote Items attribute in Table 15, Table 17, Table 19, and Table 20 in the response that indicates a Quote Item State of INSUFFICIENT_INFORMATION_PROVIDED. In this case, the Seller **MUST** provide a response for each Quote Item in this Create Quote Request.
- [R47] When providing a Deferred Quote Response to the Buyer Create Quote request, the Seller **MUST** specify the Seller Quote Level attribute in Table 14 in the response.
- [R48] When a Quote Request moves to the ORDERABLE_ALTERNATE state, the Seller **MUST** make available the information contained within Table 13, Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25. The Buyer may need to retrieve this information using the Quote Identifier.
- [R49] The Seller's response to a Quote request that has moved to the ORDERABLE_ALTERNATE state **MUST** include an Order Item Installation Interval Unit and Order Item Installation Interval Value that are \leq the Buyer's Requested Order Item Installation Interval Unit and Requested Order Item Installation Interval Value.
- [R50] When a Quote Request with an Immediate Quote Response of FALSE moves to the ORDERABLE state, the Seller **MUST** make available the information contained within Table 13, Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25. The Buyer may need to retrieve this information using the Quote Identifier.
- [R51] The Seller's response to a Quote Request with an Immediate Quote Response of FALSE that has moved to the ORDERABLE state **MUST** include an Order Item Installation Interval Unit and Order Item Installation Interval Value that are \leq the Buyer's Requested Order Item Installation Interval Unit and Requested Order Item Installation Interval Value.
- [R52] If the Seller's response to a Quote Request with an Immediate Quote Response of FALSE contains an Order Item Installation Interval and an Order Item Installation Interval Value that is $>$ the Buyer's Requested Order Item Installation Interval Unit and Requested Order Item Installation Interval Value the Quote **MUST** be moved to the ORDERABLE_ALTERNATE state.

- [R53] If the Seller Response Code indicates success, the Seller **MUST** specify the Seller Contact Information attribute in Table 13 in the response.
- [R54] If the Seller Response Code does not indicate success, the Seller **MUST NOT** specify any of the following attributes in Table 14 in the response: Quote Identifier, Quote State, Seller Contact Information, and Quote Items.
- [R55] Each Quote Item in the Seller's response **MUST** correspond to one and only one Quote Item in the Buyer's Create Quote request.
- [R56] The Seller's response **MUST** contain the Seller Quote Level which is set based on the lowest Seller Quote Item Level for all Quote Items within the Quote.
- [R57] If the Seller's response to a Quote Request moves to the UNABLE_TO_PROVIDE, INSUFFICIENT_INFORMATION_PROVIDED, ORDERABLE, ORDERABLE_ALTERNATE, or CANCELLED state, all Quote Items within the Quote Request **MUST** be in a terminal state.

The following requirements apply to each Quote Item in the response.

- [R58] The Seller **MUST** specify the Quote Item Reference Number attribute in Table 15. This number **MUST** match precisely one of the Quote Item Reference Numbers provided by the Buyer in the Create Quote request.
- [R59] The Seller **MUST** specify the Quote Item State attribute in Table 15.
- [R60] The Seller **MUST** specify the Seller Quote Item Level attribute in Table 15.
- [R61] If the Seller is unable to provide a response for a Quote Item that matches the Requested Quote Level, the Seller **MUST** set the Quote Item State attribute to UNABLE_TO_PROVIDE.
- [R62] The Quote Item State attribute **MUST** be ORDERABLE, IN_PROGRESS, IN_PROGRESS_DRAFT, ORDERABLE_ALTERNATE, INSUFFICIENT_INFORMATION_PROVIDED, or ABANDONED.
- [R63] If the Quote Item State Attribute is INSUFFICIENT_INFORMATION_PROVIDED or ABANDONED, the Seller **MUST NOT** specify the following attributes in Table 15 :
- Installation Interval Unit
 - Installation Interval Value
- [R64] If the Quote Item State Attribute is INSUFFICIENT_INFORMATION_PROVIDED, the Seller **MUST** specify the Termination Error attribute in Table 15.

The following apply to pricing as shown in Table 17, Table 19, and Table 26,

- [R65] If the Quote state is IN_PROGRESS_DRAFT, and the state of all Quote Items is IN_PROGRESS_DRAFT the Seller **MUST** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 26:
- Price Duty Free Amount
- [O7] If the Quote state is IN_PROGRESS_DRAFT, and the state of all Quote Items is IN_PROGRESS_DRAFT the Seller **MAY** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 26:
- Price Tax Rate
 - Price Tax Included Amount
- [R66] If the Quote state is ORDERABLE_ALTERNATE and the state of all Quote Items is ORDERABLE_ALTERNATE the Seller **MUST** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 26:
- Price Duty Free Amount
- [O8] If the Quote state is ORDERABLE_ALTERNATE and the state of all Quote Items is ORDERABLE_ALTERNATE the Seller **MAY** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 26:
- Price Tax Rate
 - Price Tax Included Amount
- [R67] If the Quote state is ORDERABLE_ALTERNATE and the state of all Quote Items is ORDERABLE_ALTERNATE, the Seller **MUST** provide a Price Duty Free Amount for each Quote Item as shown in Table 26.
- [O9] Quote Item Price If the Quote state is ORDERABLE_ALTERNATE and the state of all Quote Items is ORDERABLE_ALTERNATE the Seller **MAY** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 26:
- Price Tax Rate
 - Price Tax Included Amount
- [R68] If the Quote state is ORDERABLE and the state of all Quote Items is ORDERABLE the Seller **MUST** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 19:
- Quote Item Price Name
 - Quote Item Price Type

- Quote Item Price Unit of Measure
- Quote Item Price

[R69] If the Quote state is ORDERABLE and the state of all Quote Items is ORDERABLE the Seller **MUST** provide a Price Duty Free Amount for each Quote Item as shown in Table 26.

[R70] If the Quote Item Price Type is RECURRING, the Seller **MUST** include the Quote Item Price Recurring Charge Period in their response.

[R71] Table 29 shows the combination of attributes that **MUST** be provide for each Price Type.

Price Type	Price Recurring Charge Period	Price Unit of Measure	Price Duty Free Amount	Comments
RECURRING	X		X	
NON-RECURRING			X	
USAGE_BASED		X	X	USAGE_BASED Price Duty Free Amount is the charge per Unit of Measure

Table 29 – Price Type Required Information

9.3 Cancel or Reject Quote

The Buyer may Cancel a Quote Request that is in progress or may Reject a Quote Response that the Seller has provided. The requirements are the same for both a Cancel Request and a Reject Request.

9.3.1 Buyer Create Cancel or Reject Request

This section contains the Service Attributes and requirements for Use Case 4 and Use Case 6. Table 16 contains the attributes that the Buyer may set in the Create Cancel or Reject Request.

[R72] A Buyer requesting to Cancel, or Reject a Quote **MUST** include the following attributes as defined in Table 16:

- Seller Quote Identifier
- Requested Quote State
- Buyer Contact Information (if Immediate Quote Response is FALSE)

[O10] The Buyer Cancel or Reject Quote Request **MAY** contain any of the other attributes in Table 16.

9.3.2 Seller Create Cancel or Reject Request Response

This section defines the attributes and requirements for the Seller's response to a Create Cancel or Reject Request.

[R73] When providing Response to a Buyer Create Cancel or Reject Request, the Seller **MUST** specify the Seller Response Code attribute shown in Table 13.

[R74] When providing a Response if the Seller Response Code indicates success, the Seller **MUST** specify the following attributes defined in Table 16 in the response:

- Seller Cancel or Reject Quote Request Identifier
- Cancel or Reject Request State

[R75] The Seller Cancel or Reject Quote Request Identifier **MUST** remain the same value for the life of the request.

[R76] When providing a Response if the Seller Response Code does not indicate success, the Seller **MUST NOT** specify the Seller Cancel ID attribute in the response.

[R77] The Seller's response **MUST** include the Cancel or Reject Request attributes defined in Table 16 copied from the Buyer's Create Cancel or Reject Request.

[R78] If the Cancel State in the Seller's response is REJECTED, the Cancel or Reject Request Closed Date **MUST** contain the date the order moved to the REJECTED state.

[R79] If the Cancel State in the Seller's response is ACCEPTED, the Cancel or Reject Request Closed Date **MUST** contain the date the order moved to the ACCEPTED state.

[R80] If the Cancel or Reject Request State in the Seller's response is IN_PROGRESS, the Expected Request Completion Date **MUST** be provided.

9.4 Retrieve Quote List

The Buyer's request and the Seller's response are defined in the following sections.

9.4.1 Buyer's Retrieve Quote List Request

This section contains the Service Attributes and requirements for Use Case 2. Table 13 and Table 14 contain the attributes that the Buyer may set in the Retrieve Quote List Request.

[R81] The Buyer **MAY** use any of the following filter criteria specified in Table 14 for a Retrieve Quote List request:

- Buyer Quote Identifier
- Quote Request Date (range of dates)
- Quote Date (range of dates)
- Quote State
- Quote Level
- Expected Quote Completion Date (range of dates)
- Quote Response Type
- Final Quote Response Date (range of dates)
- Buyer Project Identifier

[O11] The Buyer **MAY** use a combination of filter criteria to avoid getting a Too Many Records response code.

9.4.2 Seller Response to Retrieve Quote List Request

The Seller responds to the Retrieve Quote List request with the attributes shown in Table 13 and Table 14.

[R82] The Seller's response to the Buyer's Retrieve Quote List request **MUST** contain the following from Table 13 and Table 14 for each Quote Identifier that matches the filter criteria:

- Seller Response Code
- Quote Identifier
- Buyer Quote Identifier
- Quote Level
- Description
- Quote Date
- Quote State
- Quote Response Type
- Final Quote Response Date

- Buyer Project Identifier
- Requested Quote Completion Date
- Expected Quote Completion Date
- Quote Completion Date

[R83] If the Seller Response Code does not indicate success, the Seller **MUST NOT** reply with any of the attributes in Table 14.

9.5 Retrieve Quote by Quote Identifier

The Buyer's request and the Seller's response for Use Case 3 are shown in the following sections.

9.5.1 Buyer Retrieve Quote by Quote Identifier Request

The Buyer's request uses the Quote Identifier attribute from Table 14.

[R84] The Buyer **MUST** include the Quote Identifier as specified in Table 14 in their Retrieve Quote by Quote Identifier request.

9.5.2 Seller Response to Retrieve Quote by Quote Identifier Request

Table 13, Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, , and Place attributes as described in Table 25 contain the attributes that the Seller may respond to the Buyer's Quote by Quote Identifier request with.

[R85] When providing a response to a Buyer Retrieve Quote by Quote Identifier request, the Seller **MUST** specify the Seller Response Code attribute shown in Table 13.

[R86] If the Seller Response Code does not indicate success, the Seller **MUST NOT** specify the Quote Identifier attribute in Table 14 in the response.

[R87] If the Seller Response Code indicates success, the Seller **MUST** specify the Quote State attribute in Table 14 in the response. This **MUST** be one of ORDERABLE, IN_PROGRESS, IN_PROGRESS_DRAFT, ORDERABLE_ALTERNATE, UNABLE_TO_PROVIDE, CANCELLED, REJECTED, or INSUFFICIENT_INFORMATION_PROVIDED.

[R88] If the Seller Response Code indicates success the Seller **MUST** specify at least the Quote Identifier attribute in Table 14 in the response.

[R89] When providing a response to a Buyer Retrieve Quote by Quote Identifier request with a Quote State of IN_PROGRESS_DRAFT and a Quote Response Type of PRELIMINARY, the Seller **MUST** specify the attributes contained within Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25.

- [R90] When providing a response to a Buyer Retrieve Quote by Quote Identifier request with a Quote State of ORDERABLE_ALTERNATE, the Seller **MUST** respond with the attributes contained within Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25.
- [R91] When providing a response to a Buyer Retrieve Quote by Quote Identifier request with a Quote State of ORDERABLE, the Seller **MUST** respond with the attributes contained within Table 14, Table 15, Table 17, Table 19, Table 20, Table 22, Table 23, Table 24, Table 26, and Place attributes as described in Table 25.
- [R92] If the Seller Response Code indicates success and the Quote State indicates INSUFFICIENT_INFORMATION_PROVIDED, then for at least one of the Quote Items in the request, the Seller **MUST** specify the Quote Items attribute in Table 15 in the response that indicates a Quote Item State of INSUFFICIENT_INFORMATION_PROVIDED. In this case, the Seller **MUST** provide a response for each Quote Item in this Quote Request.
- [R93] If the Seller Response Code indicates success, the Seller **MUST** specify the Seller Contact Information attribute in Table 14 in the response.
- [R94] If the Seller Response Code does not indicate success, the Seller **MUST NOT** specify any of the following attributes in Table 14 in the response: Quote Identifier, Quote State, Seller Contact Information, and Quote Items.
- [R95] Each Quote Item in the Seller's response **MUST** correspond to one and only one Quote Item in the Buyer's Create Quote request.

The following requirements apply to each Quote Item in the response.

- [R96] The Seller **MUST** specify the Quote Item Reference Number attribute in Table 15. This number **MUST** match precisely one of the Quote Item Reference Numbers provided by the Buyer in the Create Quote request.
- [R97] The Seller **MUST** specify the Quote Item State attribute in Table 15.
- [R98] The Quote Item State attribute **MUST** be ORDERABLE, INSUFFICIENT_INFORMATION_PROVIDED, or ABANDONED.
- [R99] If the Quote Item State Attribute is INSUFFICIENT_INFORMATION_PROVIDED or ABANDONED, the Seller **MUST NOT** specify the following attributes in :
- Installation Interval Unit
 - Installation Interval Value
- [R100] If the Quote Item State Attribute is INSUFFICIENT_INFORMATION_PROVIDED, the Seller **MUST** specify the Termination Error attribute in Table 15.

[R101] The following apply to pricing as shown in Table 17, Table 19, and Table 26. If the Quote state is ORDERABLE and the state of all Quote Items is ORDERABLE the Seller **MUST** provide a Quote Item Price for each Quote Item including the following attributes shown in Table 19:

- Quote Item Price Name
- Quote Item Price Type
- Quote Item Price Unit of Measure
- Quote Item Price

[R102] If the Quote state is ORDERABLE and the state of all Quote Items is ORDERABLE the Seller **MUST** provide a Price Duty Free Amount for each Quote Item including the following attributes shown in Table 26.

[R103] If the Quote State is IN_PROGRESS_DRAFT the request **MUST** include Quote Item Price for each Quote Item including the following attributes shown in Table 19:

- Quote Item Price Name
- Quote Item Price Type
- Quote Item Price Unit of Measure
- Quote Item Price

[R104] If the Quote state is IN_PROGRESS_DRAFT it **MUST** provide a Price Duty Free Amount for each Quote Item including the following attributes shown in Table 26.

9.6 Cancel a Quote by Quote Identifier

The Buyer's request and the Seller's response for Use Case 4 are shown in the following sections.

9.6.1 Buyer Cancel Quote by Quote Identifier Request

The Buyer's request uses the Quote Identifier and Requested Quote State attributes from Table 13.

[R105] A Buyer **MUST** include the Quote Identifier and the Requested Quote State as specified in Table 14 in a Cancel Quote by Quote Identifier request.

[R106] The Requested Quote State **MUST** be CANCEL.

9.6.2 Seller Response to a Cancel Quote by Quote Identifier Request

The Seller's response to the Buyer's Cancel Quote by Quote Identifier request uses the Seller Response Code from Table 13.

[R107] If the Buyer's Cancel Quote by Quote Identifier request is accepted, the Seller Response Code **MUST** indicate success.

[R108] If the Buyer's Cancel Quote by Quote Identifier request is rejected, the Seller Response Code **MUST** indicate failure.

9.7 Reject a Quote by Quote Identifier

The Buyer's request and the Seller's response for Use Case 6 are shown in the following sections.

9.7.1 Buyer Reject Quote by Quote Identifier Request

The Buyer's request uses the Quote Identifier and Requested Quote State attributes from Table 14.

[R109] A Buyer **MUST** include the Quote Identifier and the Requested Quote State as specified in Table 14 in a Reject Quote by Quote Identifier request.

[R110] The Requested Quote State **MUST** be REJECT.

9.7.2 Seller Response to a Reject Quote by Quote Identifier Request

The Seller's response to the Buyer's Reject Quote by Quote Identifier request uses the Seller Response Code from Table 13.

[R111] If the Buyer's Reject Quote by Quote Identifier request is accepted, the Seller Response Code **MUST** indicate success.

[R112] If the Buyer's Reject Quote by Quote Identifier request is rejected, the Seller Response Code **MUST** indicate failure.

9.8 Register for Quote Notifications

The Buyer's request and the Seller's response for Use Case 7 are shown in the following sections.

9.8.1 Buyer Register for Notification Request

The Buyer's request uses the attributes from Table 27.

[R113] When making a Register for Notification request, the Buyer **MUST** specify the Return Address Information, List of Notification Types, and Action attributes shown in Table 27.

[R114] If the Action attribute is STOP, the Buyer **MUST** specify the List of Notification Types to be stopped.

9.8.2 Seller Response to a Register for Notification Request

The Seller's response to a Buyer's Register for Notification request uses the Seller Response Code from Table 13.

- [R115] When responding to a Quote notification request, the Seller **MUST** specify the Seller Response Code attribute shown in Table 13.

9.9 Quote Notification

This section contains the Attributes and requirements for Use Case 8 as shown in Table 28. The following requirements apply to the Seller Quote Notification.

- [R116] The Seller **MUST** be able to send Quote Notifications to Buyers for both Immediate Quote Responses and Deferred Quote Notifications.
- [R117] Quote Notifications for Immediate Quote Responses **MUST** indicate when a quote has changed from the ORDERABLE_ALTERNATE or ORDERABLE states to one of the end states (REJECTED, EXPIRED, or ACCEPTED).
- [R118] The Seller **MUST NOT** send Quote Notifications to Buyers who have not registered for Quote Notifications.
- [R119] The Seller **MUST** send Quote Notifications to Buyers who have registered for Quote Notifications.
- [R120] Quote Notifications **MUST** include the Attributes shown in Table 28.
- [R121] Quote Notifications **MUST** include the Quote Id.

9.10 Specifying the Buyer Identifier and the Seller Identifier

For requests of all types, there is a business entity that is initiating an Operation (called a Requesting Entity) and a business entity that is responding to this request (called the Responding Entity). In the simplest case, the Requesting Entity is the Buyer and the Responding Entity is the Seller. However, in some cases, the Requesting Entity may represent more than one Buyer and similarly, the Responding Entity may represent more than one Seller.

While it is outside the scope of this specification, it is assumed that the Requesting Entity and the Responding Entity are aware of each other and can authenticate requests initiated by the other party. It is further assumed that both the Buying Entity and the Requesting Entity know a) the list of Buyers the Requesting Entity represents when interacting with this Responding Entity; and b) the list of Sellers that this Responding Entity represents to this Requesting Entity.

- [R122] If the Requesting Entity has the authority to represent more than one Buyer with the Responding Entity, the request **MUST** specify the Buyer being represented in this request using the Buyer Identifier attribute.
- [R123] If the Requesting Entity represents precisely one Buyer with the Responding Entity, the request **MUST NOT** specify the Buyer Identifier attribute.

- [R124]** If the Responding Entity represents more than one Seller to this Buyer, the request **MUST** specify the Seller with whom this request is associated by using the Seller Identifier attribute.

- [R125]** If the Responding Entity represents precisely one Seller to this Buyer, the request **MUST NOT** specify the Seller Identifier attribute.

10 Process Flows

10.1 Quote Process Flow

The Quote process flows are shown below. The diagrams capture various states that the Quote goes through in its lifecycle. The specific states are managed by the Seller based on its processing and/or based on Buyer's action. If the Buyer subscribes to Quote state change notifications, they will receive a notification every time the state changes.

- [R126] If a Seller only provides Immediate Responses the Seller **MUST** support INSUFFICIENT_INFORMATION_PROVIDED, UNABLE_TO_PROVIDE, ORDERABLE, ORDERABLE_ALTERNATE, REJECTED, ACCEPTED, CANCELLED, and EXPIRED Quote states, ABANDONED, INSUFFICIENT_INFORMATION_PROVIDED, ORDERABLE, ORDERABLE_ALTERNATE, and UNABLE_TO_PROVIDE Quote Item states, and their associated state transitions shown in Figure 3, Figure 5, Figure 6, Table 31, and Table 33.
- [R127] If a Seller does not provide Instantaneous Responses the Seller **MUST** support all states and their associated state transitions shown in Figure 2, Figure 3, Table 23, and Table 24.
- [R128] If the Buyer request is for a Buyer Quote Level of BUDGETARY, the Seller **MUST** use the process flows shown in Figure 4 and Figure 5.

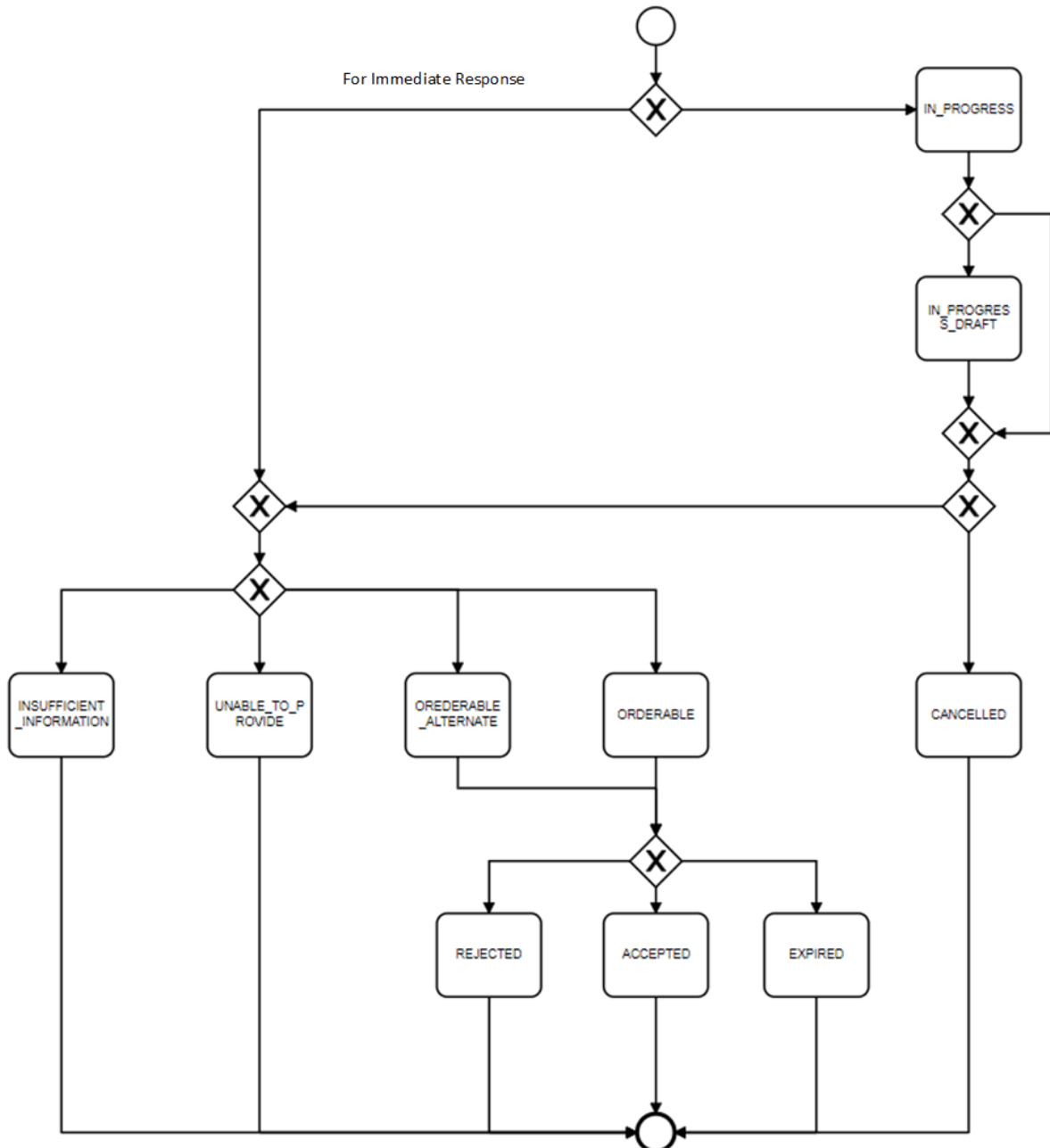


Figure 3 – FIRM Buyer Quote Level Quote Process Flow

Note: Figure 3 reflects a Quote Request with a Quote Level of FIRM which can result in a Seller response of either FIRM or FIRM – SUBJECT_TO_FEASIBILITY_CHECK.

The definitions of the various quote states for a FIRM Quote Level are as follows:

State	Description
ACCEPTED	<p>The ACCEPTED state is set by the Seller. It is triggered by a product order. All Quote Items must be in an ORDERABLE or ORDERABLE_ALTERNATE state. The Buyer may place an order based on a PRELIMINARY quote response if the quote is in the ORDERABLE_ALTERNATE state. In that case, the Quote moves from the ORDERABLE_ALTERNATE state to the ACCEPTED state.</p>
CANCELLED	<p>A quote can only be cancelled when it is in an IN_PROGRESS state or an IN_PROGRESS_DRAFT state. The CANCELLED state is when the quote process is stopped by a Buyer through an explicit Cancel Request. Quote items might be in an IN_PROGRESS, IN_PROGRESS_DRAFT, or ORDERABLE state. Any Quote Items in an IN_PROGRESS state are moved to an ABANDONED state. The Seller moves the Quote Request to the CANCELLED state upon the receipt of a Cancel Request from the Buyer.</p>
EXPIRED	<p>This state is set by the Seller from an ORDERABLE state or ORDERABLE_ALTERNATE state to indicate that the Valid Until date for the quote has passed and quote will no longer be honored. All the Quote Items must be in an ORDERABLE state</p>
IN_PROGRESS	<p>The IN_PROGRESS state is when the quote is currently in the hands of the Seller to build it according to the Buyer's requirements. The pricing and expected completion date should be updatable in this state. At least one Quote Item is in an IN_PROGRESS state. No Quote Items may be in an UNABLE_TO_PROVIDE or INSUFFICIENT_INFORMATION_PROVIDED state.</p>

State	Description
IN_PROGRESS_DRAFT	The IN_PROGRESS_DRAFT state is when the Seller has provided a response to the Buyer's request. The Seller is continuing to work on the quote and the quote cannot be referenced in an order in this state. At least one Quote Item is in an IN_PROGRESS_DRAFT state. No Quote Items are in an UNABLE_TO_PROVIDE or INSUFFICIENT_INFORMATION_PROVIDED state.
INSUFFICIENT_INFORMATION_PROVIDED	This state is set by the Seller when they do not have sufficient information for one or more Quote Items to respond to the Buyer's Quote Request. The Quote Request moves to INSUFFICIENT_INFORMATION_PROVIDED when one Quote Item is in an INSUFFICIENT_INFORMATION_PROVIDED state. Any Quote Items in an IN_PROGRESS state are moved to an ABANDONED state. When a quote is in the INSUFFICIENT_INFORMATION_PROVIDED state, some Quote Items might be in the ORDERABLE state. An Instantaneous Response can move from Start to the INSUFFICIENT_INFORMATION_PROVIDED state without going through the IN_PROGRESS state.
ORDERABLE_ALTERNATE	This state is set by the Seller when they have provided a quote response and have either decided that they will not perform any further work on the quote or the Seller's response contains a Quote Item Installation Interval and Quote Item Installation Interval Value that are > the Requested Quote Item Installation Interval and Requested Quote Item Installation Interval Value. Quote items are in the ORDERABLE_ALTERNATE or ORDERABLE state. From ORDERABLE or ORDERABLE_ALTERNATE the quote can move to the REJECTED, EXPIRED, or ACCEPTED states.

State	Description
ORDERABLE	The ORDERABLE state is where the quote has been internally approved by the Seller and is ready for the Buyer to review. All Quote Items must be in an ORDERABLE state. An Instantaneous Response can move from Start to ORDERABLE state without going through the IN_PROGRESS state.
REJECTED	The REJECTED state is used when the Buyer does not wish to progress with the quotation. The Buyer requests the state of the quote to REJECTED through a Reject Request. In order for a Buyer to actually reject the quote, all Quote Items must be in an ORDERABLE or ORDERABLE_ALTERNATE state. The Seller moves the Quote Request to REJECTED state.
UNABLE_TO_PROVIDE	This state is set by the Seller when they are not able to provide a quote. The Seller may be unable to provide a Quote because they are unable to provide one or more Quote Items or because they are unable to provide a Price for a Quote Request with a Firm Quote Level. The Quote Request moves to UNABLE_TO_PROVIDE when one Quote Item is in an UNABLE_TO_PROVIDE state. Any Quote Items in an IN_PROGRESS state are moved to an ABANDONED state. When a quote is in the UNABLE_TO_PROVIDE state, some Quote Items might be in the ORDERABLE state. An Instantaneous Response can move from Start to the UNABLE_TO_PROVIDE state without going through the IN_PROGRESS state.

Table 30 – Firm Quote State Values

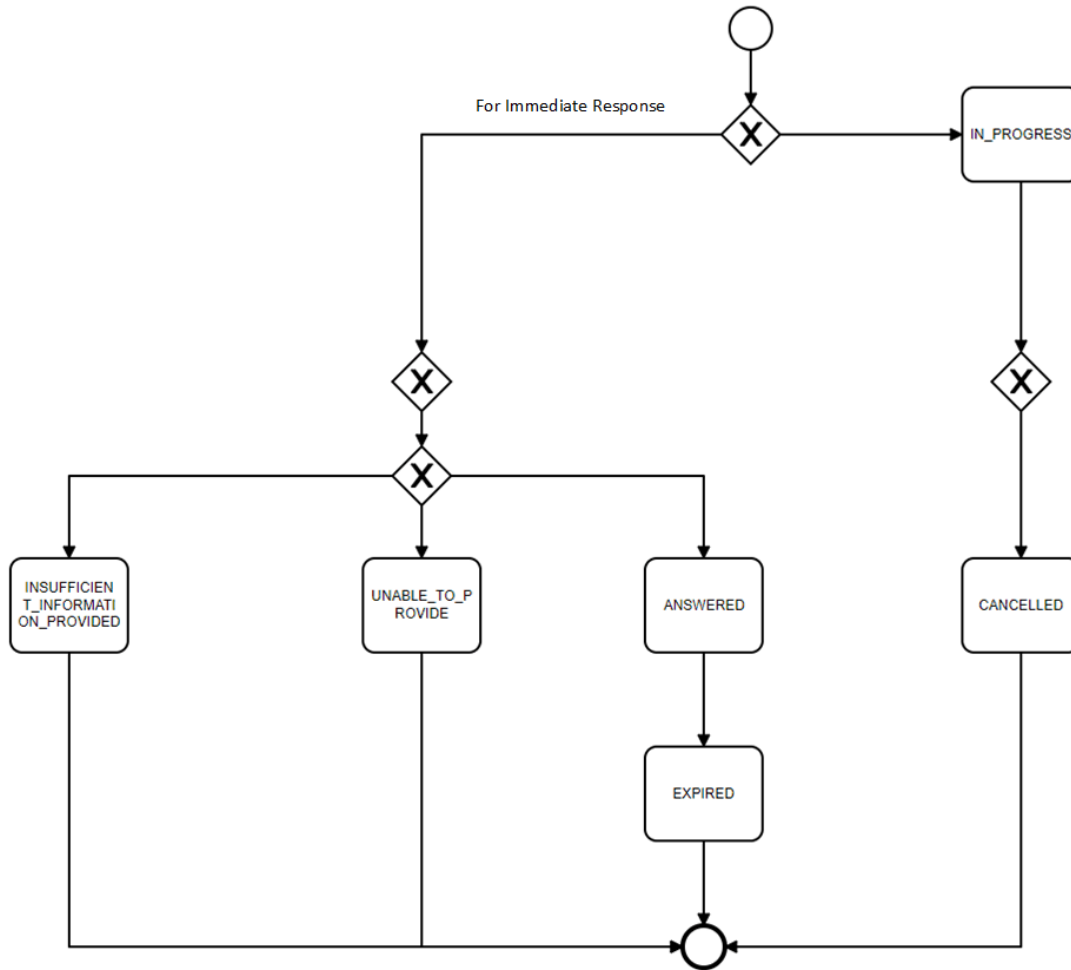


Figure 4 – BUDGETARY Buyer Quote Level Quote Process Flow

The definitions of the various quote states for BUDGETARY Quote Level are as follows:

State	Description
ANSWERED	The ANSWERED state is applied when a Buyer Quote Level is BUDGETARY, and the Seller has provided a response to the Buyer’s Quote Request. When the Quote Request is in the BUDGETARY state, all Quote Items must be in a terminal state.

State	Description
CANCELLED	A quote can only be cancelled when it is in an IN_PROGRESS state or an IN_PROGRESS_DRAFT state. The CANCELLED state is when the quote process is stopped by a Buyer through an explicit Cancel Request. Quote items might be in an IN_PROGRESS, IN_PROGRESS_DRAFT, or ORDERABLE state. Any Quote Items in an IN_PROGRESS state are moved to an ABANDONED state. The Seller moves the Quote Request to the CANCELLED state upon the receipt of a Cancel Request from the Buyer.
EXPIRED	This state is set by the Seller from an ORDERABLE state or ORDERABLE_ALTERNATE state to indicate that the Valid Until date for the quote has passed and quote will no longer be honored. All the Quote Items must be in an ORDERABLE state
IN_PROGRESS	The IN_PROGRESS state is when the quote is currently in the hands of the Seller to build it according to the Buyer's requirements. The pricing and expected completion date should be updatable in this state. At least one Quote Item is in an IN_PROGRESS state. No Quote Items may be in an UNABLE_TO_PROVIDE or INSUFFICIENT_INFORMATION_PROVIDED state.

State	Description
INSUFFICIENT_INFORMATION_PROVIDED	This state is set by the Seller when they do not have sufficient information for one or more Quote Items to respond to the Buyer's Quote Request. The Quote Request moves to INSUFFICIENT_INFORMATION_PROVIDED when one Quote Item is in an INSUFFICIENT_INFORMATION_PROVIDED state. Any Quote Items in an IN_PROGRESS state are moved to an ABANDONED state. When a quote is in the INSUFFICIENT_INFORMATION_PROVIDED state, some Quote Items might be in the ORDERABLE state. An Instantaneous Response can move from Start to the INSUFFICIENT_INFORMATION_PROVIDED state without going through the IN_PROGRESS state.
UNABLE_TO_PROVIDE	This state is set by the Seller when they are not able to provide a quote. The Seller may be unable to provide a Quote because they are unable to provide one or more Quote Items or because they are unable to provide a Price for a Quote Request with a Firm Quote Level. The Quote Request moves to UNABLE_TO_PROVIDE when one Quote Item is in an UNABLE_TO_PROVIDE state. Any Quote Items in an IN_PROGRESS state are moved to an ABANDONED state. When a quote is in the UNABLE_TO_PROVIDE state, some Quote Items might be in the ORDERABLE state. An Instantaneous Response can move from Start to the UNABLE_TO_PROVIDE state without going through the IN_PROGRESS state.

Table 31 – BUDGETARY Quote State Values

10.2 Quote Item Process Flow

There are two Quote Item process flows. One when the Buyer Quote Level is BUDGETARY and one when the Buyer Quote Level is FIRM. These are shown below. The diagrams capture various states that the Quote Item goes through in its lifecycle. The specific states are managed by the Seller based on its processing and/or based on Buyer's action.

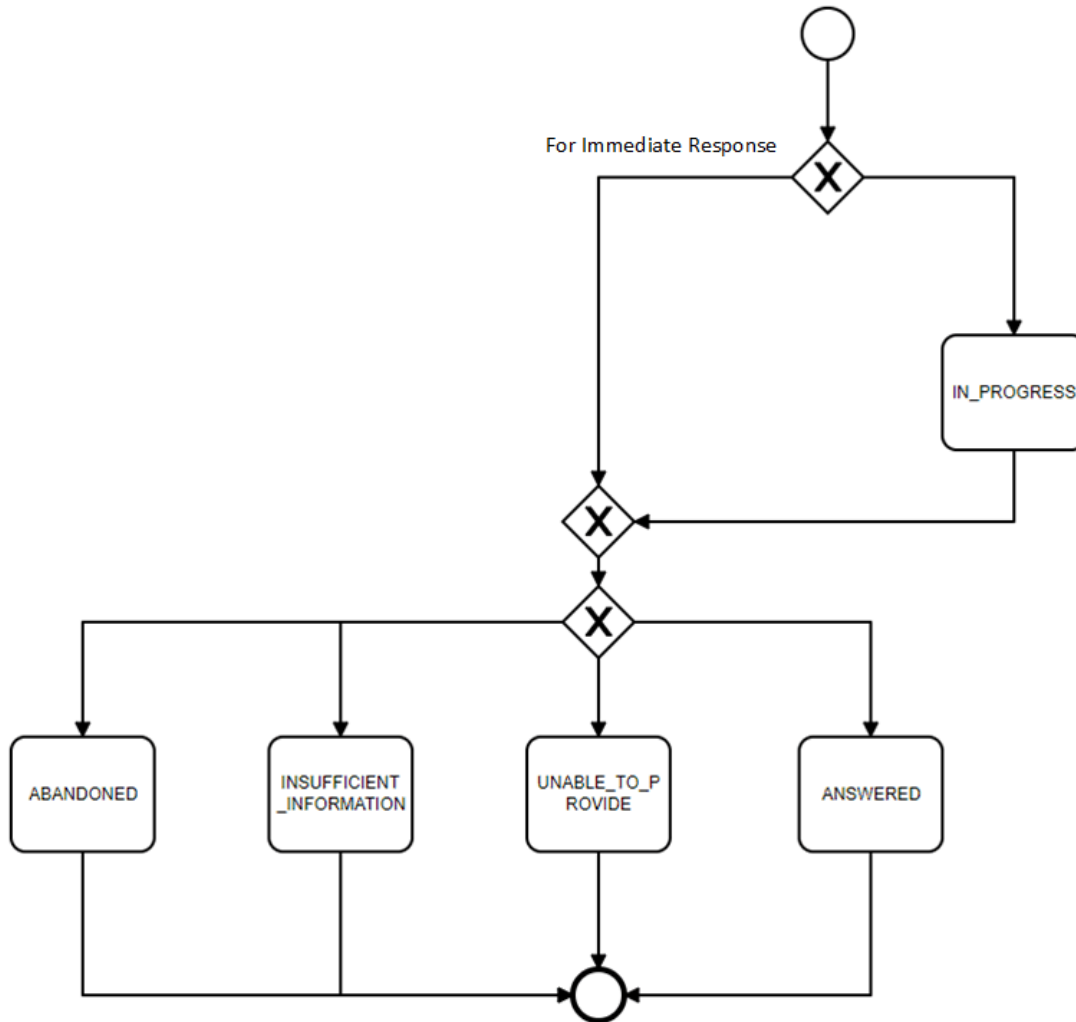


Figure 5 – BUDGETARY Buyer Quote Level Quote Item Process Flow

The definitions of the various Quote Item states for a BUDGETARY Quote Item level are as follows:

State	Description
ABANDONED	The ABANDONED state is applied to Quote Items that are in an IN_PROGRESS state when the quote is moved to a terminal state.
ANSWERED	The ANSWERED state is applied when a Buyer Quote Level is BUDGETARY, and the Seller has provided a response to the Buyer’s Quote Request.

State	Description
IN_PROGRESS	The IN_PROGRESS state is applied when the Quote Item is currently in the hands of the Seller to build it regarding Buyer requirements. The Quote Item is under construction.
INSUFFICIENT_INFORMATION_PROVIDED	This state is set by the Seller when they do not have sufficient information for the Quote Item to respond to the Buyer's Quote Request. An Immediate Quote Response can move from Start to the INSUFFICIENT_INFORMATION_PROVIDED state without going through the IN_PROGRESS state. A Deferred Quote Response can move from Start to INSUFFICIENT_INFORMATION_PROVIDED or can move from IN_PROGRESS or IN_PROGRESS_DRAFT to INSUFFICIENT_INFORMATION_PROVIDED if the Seller determines that to provide a different Seller Quote Level response they do not have all the information required.
UNABLE_TO_PROVIDE	The UNABLE_TO_PROVIDE state is set on a Quote Item when the Seller cannot provide a quote for this item. The Seller may be unable to provide the Quote Item because they are unable to provide the requested Quote Item. An Instantaneous Response can move from Start to the UNABLE_TO_PROVIDE state without going through the IN_PROGRESS state.

Table 32 – BUDGETARY Quote Item State Values

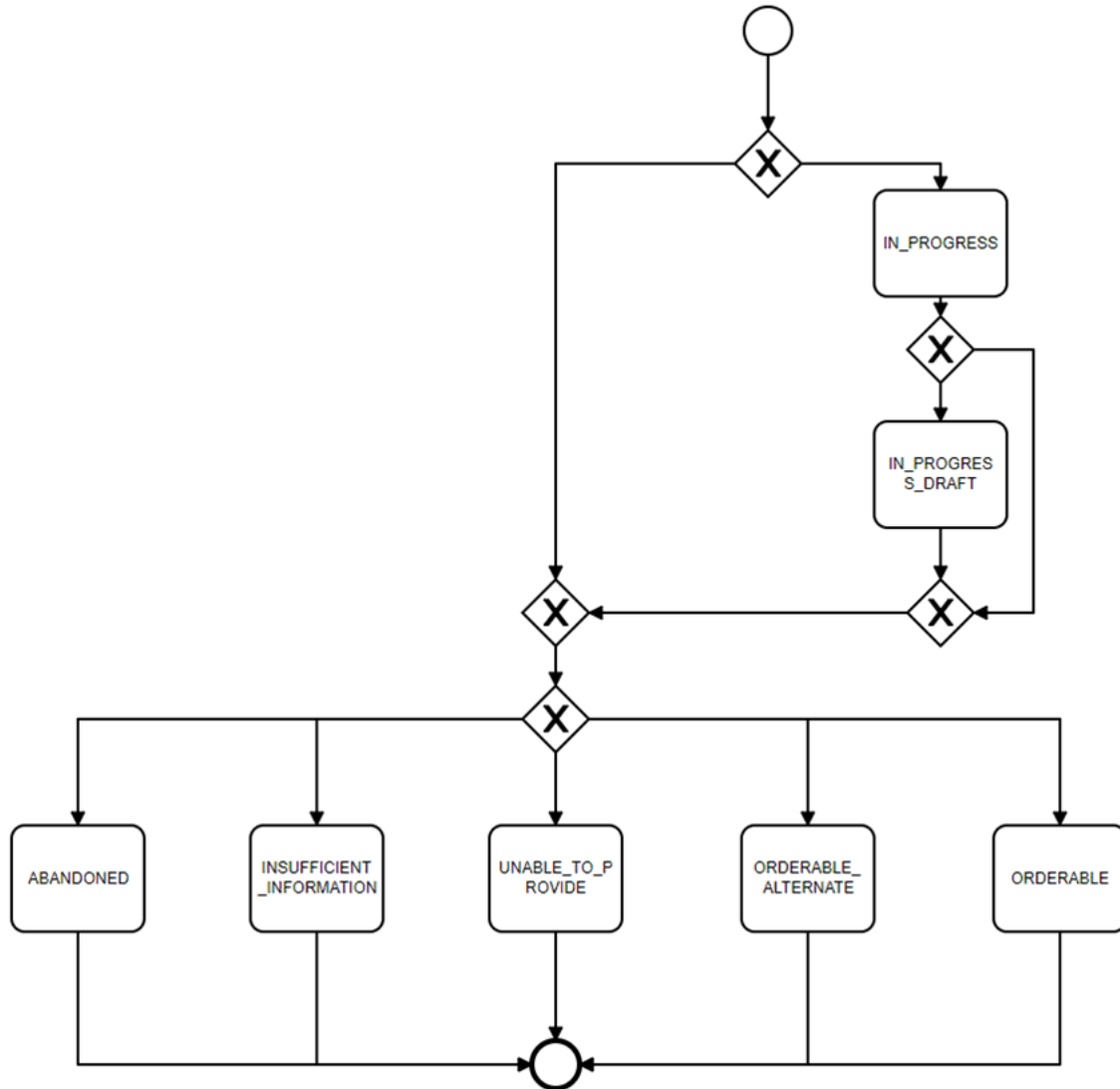


Figure 6 – FIRM Buyer Quote Level Quote Item Process Flow

The definitions of the various Quote Item states for a FIRM Quote Item level are as follows:

State	Description
ABANDONED	The ABANDONED state is applied to Quote Items that are in an IN_PROGRESS state when the quote is moved to a terminal state.
IN_PROGRESS	The IN_PROGRESS state is applied when the Quote Item is currently in the hands of the Seller to build it regarding Buyer requirements. The Quote Item is under construction.

State	Description
IN_PROGRESS_DRAFT	The IN_PROGRESS_DRAFT state is applied to a Buyer Quote Level is FIRM and the Seller is providing a response to the Buyer's request for this Quote Item the response may be subject to revision. Other related Quote Items may be in the IN_PROGRESS_DRAFT or ORDERABLE state.
INSUFFICIENT_INFORMATION_PROVIDED	This state is set by the Seller when they do not have sufficient information for the Quote Item to respond to the Buyer's Quote Request. An Immediate Quote Response can move from Start to the INSUFFICIENT_INFORMATION_PROVIDED state without going through the IN_PROGRESS state. A Deferred Quote Response can move from Start to INSUFFICIENT_INFORMATION_PROVIDED or can move from IN_PROGRESS or IN_PROGRESS_DRAFT to INSUFFICIENT_INFORMATION_PROVIDED if the Seller determines that to provide a different Seller Quote Level response they do not have all the information required.
ORDERABLE_ALTERNATE	This state is set by the Seller when they have provided IN_PROGRESS_DRAFT quote response for this Quote Item and have either decided that they will not perform any further work on the quote or the Seller's response contains a Quote Item Installation Interval and Quote Item Installation Interval Value that are > the Requested Quote Item Installation Interval and Requested Quote Item Installation Interval Value. Other Quote Items are in the ORDERABLE_ALTERNATE or ORDERABLE state.
ORDERABLE	The ORDERABLE state is where the Quote Item has been internally approved by the Seller. An Instantaneous Response can move from Start to ORDERABLE state without going through the IN_PROGRESS state.

State	Description
UNABLE_TO_PROVIDE	The UNABLE_TO_PROVIDE state is set on a Quote Item when the Seller cannot provide a quote for this item. The Seller may be unable to provide the Quote Item because they are unable to provide the requested Quote Item. An Instantaneous Response can move from Start to the UNABLE_TO_PROVIDE state without going through the IN_PROGRESS state.

Table 33 – FIRM Quote Item State Values

Table 34 shows the allowable Quote Item states for each Quote state when the Quote Level is FIRM. As an example, if the Quote State is ACCEPTED, the state of the Quote Items in that Quote are either IN_PROGRESS or ORDERABLE.

Quote State	Quote Items State						
	ABANDONED	IN_PROGRESS	IN_PROGRESS_DRAFT	INSUFFICIENT_INFORMATION_PROVIDED	ORDERABLE_ALTERNATE	ORDERABLE	UNABLE_TO_PROVIDE
ACCEPTED					X	X	
CANCELLED	X						
EXPIRED					X	X	
IN_PROGRESS		X	X		X	X	
IN_PROGRESS_DRAFT			X		X	X	
INSUFFICIENT_INFORMATION_PROVIDED	X			X			
ORDERABLE_ALTERNATE					X	X	
ORDERABLE						X	
REJECTED					X	X	
UNABLE_TO_PROVIDE	X						X

Table 34 – Allowable Quote Item States per Quote State for FIRM Quote Level

Table 34 shows the allowable Quote Item states for each Quote state when the Quote Level is BUDGETARY. As an example, if the Quote State is ANSWERED, the state of the Quote Items in that Quote are either ANSWERED, UNABLE_TO_PROVIDE, or INSUFFICIENT_INFORMATION_PROVIDED.

Quote State	Quote Items State				
	ABANDONED	ANSWERED	IN_PROGRESS	INSUFFICIENT_INFORMATION_PROVIDED	UNABLE_TO_PROVIDE
ANSWERED		X		X	X
CANCELLED	X				
EXPIRED		X		X	X
IN_PROGRESS		X	X		
INSUFFICIENT_INFORMATION_PROVIDED	X			X	
UNABLE_TO_PROVIDE	X				X

Table 35 – Allowable Quote Item States per Quote State for BUDGETARY Quote Level

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