



Global Exchanges & Markets Committee

Quote Model Type & Quote Qualifier Extension

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Document History

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0.1	October 23, 2013	Yuval Cohen	Initial revision
0.2	October 25, 2013	Yuval Cohen	Merge comments from Lisa Taikitsadaporn
0.3	November 06, 2013	Yuval Cohen	Additional enhancements for Axe indicators
0.4	November 16, 2013	Yuval Cohen	Merge comments from Lisa Taikitsadaporn
0.5	November 25, 2013	Yuval Cohen	Added Axe definition
ASBUILT	Jan. 16, 2014		ASBUILT created

1 Introduction

In 2011 the Global Fixed Income Committee produced a set of best practices documents for trading CDS & IRS products, *Best Practices for Trading Fixed Income Instruments – CDS & IRS*. This document set describes how to use FIX 5.0 SP2 for pre-trade and trading workflows between the sell-side and execution venue and was officially ratified by the FPL community in January 2012.

In 2012 the Global Fixed Income Committee worked to create a similar set of best practices documents for the cash bond market, *Best Practices for Trading Fixed Income Instruments – Cash Bonds*. These documents were ratified by FPL and released in February 2013

Over the course of this year the focus has been on extending the specifications to cover additional workflows relevant to the fixed income markets. This gap analysis suggests a number of extensions to the Quote message and the QuotEntryGrp component in order to support reserve (also known as hidden quantity or iceberg) functionality for quotes. Additionally, a number of new enumerations to the QuoteQualifier(695) field are suggested.

1.1 Summary of changes

1.1.1 Quote Model Type

We propose adding the QuoteModelType(~~1749~~2403) enumerated field to the Quote(35=S) message and the QuotEntryGrp component. The enumerations for the QuoteModelType(~~1749~~2403) field are:

- Quote Entry(~~1749=1~~2403=1) – New quote is entered or previously submitted quote is updated in full to the specified quantity(-ies) without regard to amount executed when a subsequent quote (e.g. with the same QuoteID reference) is received by the Recipient of the quote message.
- Quote Modification(~~1749=2~~2403=2) – Previously submitted quote must be present and is updated, taking into consideration the amount already executed when a subsequent quote (e.g. with the same QuoteID reference) is received by the Recipient of the quote message.

1.1.2 TotalBidSize(1749) and TotalOfferSize(1750)

We propose adding the TotalBidSize(1749) and TotalOfferSize(1750) fields to the following component:

- QuotEntryGrp

1.1.3 QuoteQualifier(695)

We propose adding three new enumerations to the QuoteQualifier(695) field to support Axe indicators. The enumerated fields are:

- ~~Axe(695=E**tb**d)~~ – indicates that a quote is an Axe, without specifying a side preference. Mutually exclusive with ~~F**tb**d~~ (Axe on bid) and ~~G**tb**d~~ (Axe on offer).
- ~~Axe on bid(695=F**tb**d)~~ – indicates that a quote is an Axe, with a preference to execute on the bid side. Mutually exclusive with ~~**tb**dE~~ (Axe) and ~~**tb**dG~~ (Axe on offer).
- ~~Axe on offer(695=G**tb**d)~~ – indicates that a quote is an Axe, with a preference to execute on the offer side. Mutually exclusive with ~~**tb**dE~~ (Axe on bid) and ~~**tb**dF~~ (Axe).

2 Business Requirements

2.1 Reserve Quotes

Some venues provide the capability of sending tradable bid and offer quotes to the market, where only a portion of the bid quantity and offer quantity are visible to other market participants. When a user enters a new quote in the market, the following is specified:

- total bid size
- total offer size
- visible bid size
- visible offer size

Additional quote messages may amend each of the above quantities.

The venue stores the above sizes; in addition the venue maintains and reports the bid and offer states after each individual fill:

- the outstanding sizes (bid and offer)
- the cumulative sizes (bid and offer)

The NGM Tradeable Quotes Extension (EP126) introduced the fields TotalBidSize(1749) and TotalOfferSize(1750) and established the basis for supporting the reserve quotes requirements.

We propose using the TotalBidSize(1749) and the TotalOfferSize(1750) fields in the Quote(35=S) message to identify the size that can be transacted for each of the sides. The BidSize(134) and the OfferSize(135) fields serve as the visible sizes for each of the sides.

We note in NGM Tradeable Quotes Extension (EP126), section 2.2 the following:

“The receiver of a Quote message needs to know if the intention of the message is to create a new quote or to modify an existing quote. For example if the quote is completely filled (and deleted) a quote replace could be misinterpreted as a new quote.

It is proposed that when only TotalBidSize and/or TotalOfferSize are specified the quote is being modified, in which case a previous quote is expected. When BidSize and/or OfferSize are specified the quote is a quote entry, and the previous quote is replaced if it exists (as today). Only one of the two sets of size fields is allowed when entering a new quote or updating an existing quote. This avoids any ambiguity in the quote model (entry vs modification) being used.”

In order to fulfill the requirements for reserve quotes, there is a need to send the TotalBidSize(1749), TotalOfferSize(1750), BidSize(134) and OfferSize(135) on the Quote(35=S) message when entering a new quote as well as when modifying an existing quote. The receiver of a Quote(35=S) message can no longer distinguish between the case where a quote is entered and the case where the quote is modified, simply by looking at the existence of the above fields.

For this reason, a new field: QuoteModelType([2403TBD](#)) is proposed with the following enumerations:

- Quote Entry – New quote is entered or previously submitted quote is updated in full without regard to amount executed when a subsequent quote (e.g. with the same QuoteID reference) is received by the Recipient of the quote message.
- Quote Modification – Previously submitted quote must be present and is updated, taking into consideration the amount already executed when a subsequent quote (e.g. with the same QuoteID reference) is received by the Recipient of the quote message.

2.2 Axe Indicator

An Axe indicates that the dealer has real interest in the specified security. The dealer can specify a preference to execute on the bid side or offer side. Historically, this information has been communicated via the venue's messaging system.

The former Bond Market Association described Axe as: *"An "Axe" or "Ax" a security or list of securities that a market participant is seeking to purchase or sell. Axe distribution may be limited to one or several potential counterparties, or may be broadly distributed. No response is required on the part of the recipient of axe messages, however, a request for a firm quote or a trade order may be generated as a result of an axe."*

Currently, venues are not implementing this functionality electronically in FIX; these enhancements will provide an agreed approach for the venues to adopt should they decide to offer this in the future via FIX.

3 Issues and Discussion Points

3.1.1 Alternatives Approaches for Reserve Quotes

During a Global Exchange and Markets Committee meeting, we considered a number of different alternatives to support Reserve quotes:

- We considered adding the entire DisplayInstruction component to the Quote(35=S) message and QuotEntryGrp component (i.e. embedded in the MassQuote(35=i) message). However, the group decided that there are not sufficient business requirements at the moment to justify the addition of all the attributes to the DisplayInstruction component and that it may not be appropriate for the quoting model.
- We also considered adding two new fields; VisibleBidSize and VisibleOfferSize to the relevant structures. However, the group felt that introducing the QuoteModelType(2403~~td~~) field would be more consistent with the existing implied usage of the Quote message by reusing existing fields. The QuoteModelType(2403~~td~~) field would provide a means to explicitly indicate which quote model is being used by the quote submitted, provided the execution venue supports it.

3.1.2 Alternative Approach for Axe Indicator

We discussed the possibility of using the IOI(35=6) message to indicate an Axe however this particular message is not heavily used in the fixed income market and as such the consensus was to implement this functionality as a quote qualifier in the Quote(35=S) message

4 Proposed Message Flow

4.1 Reserve Quotes

Figure 1 below illustrates an example for a reserve quote message flow:

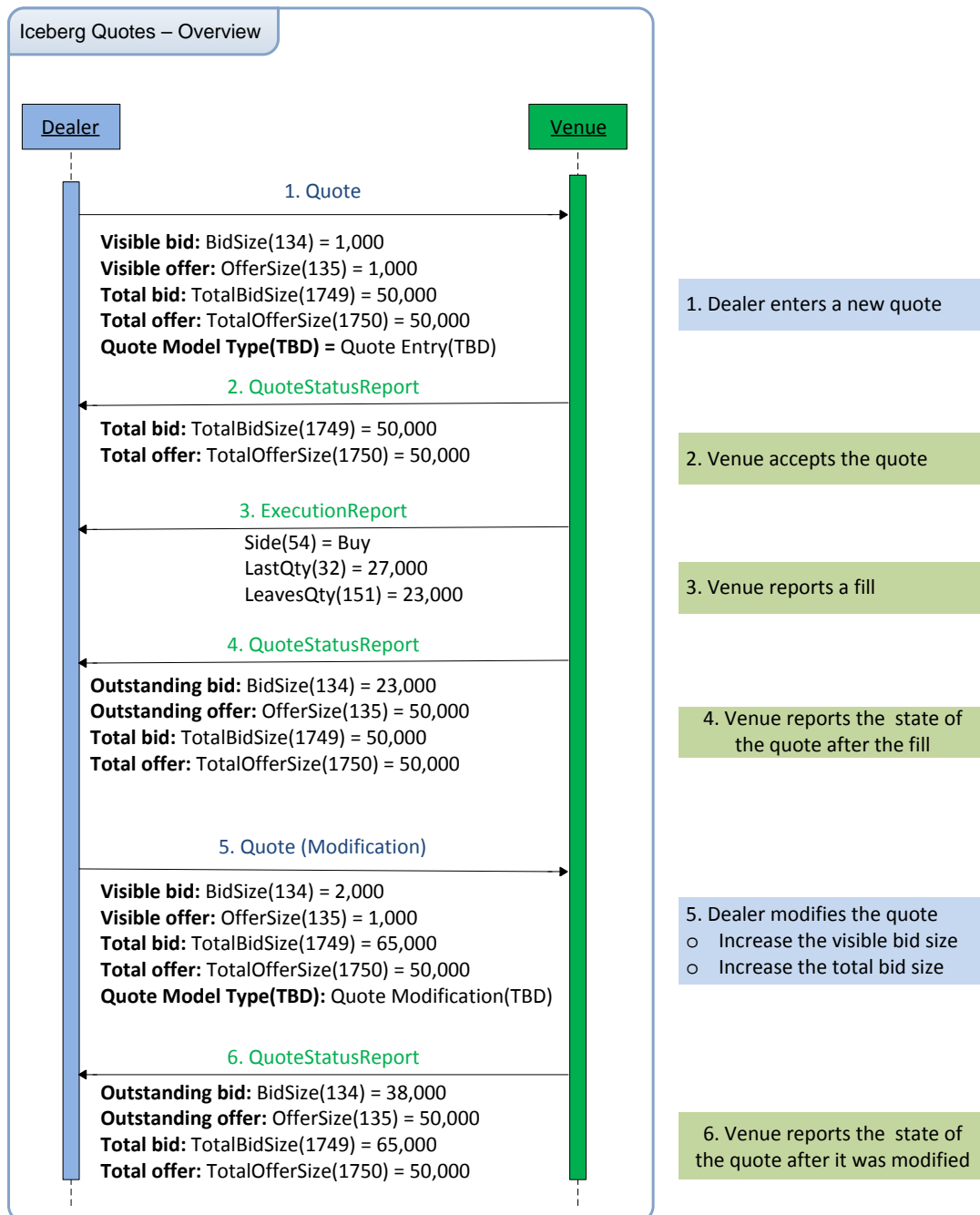


Figure 1: Reserve Quote – Overview

The following table details the usage of attributes and their values in four cases:

- New entry of a quote having the full quantity visible
- Modification of a quote having the full quantity visible
- New entry of a quote having partial quantity visible
- Modification of a quote having the partial quantity visible

FIX Field	Quote maintenance (full visibility)		Quote maintenance (partial visibility)	
	Quote entry required	Quote modification required	Quote entry required	Quote modification required
BidSize(134)	Y	N	Y (display/visible qty)	Y (display/visible qty)
OfferSize(135)	Y	N	Y (display/visible qty)	Y (display/visible qty)
TotalBidSize(1749)	N/A	N	Y (total qty)	Y (total qty)
TotalOfferSize(1750)	N/A	N	Y (total qty)	Y (total qty)
QuoteModelType(240 3+bd)	N (1)	N (2) conditionally required when using Bid/OfferSize	Y (1)	Y (2)
Notes:	<i>Bid/OfferSize and TotalBid/OfferSize mutually exclusive</i>		<i>The delta between the total qty and the display qty is hidden qty</i>	

The following table provides some more details, presenting the requirements for each of the fields – whether it is required, optional or not available (i.e. must not exist or be used):

	Full visible quote	Reserve quote
Quote entry	<ul style="list-style-type: none"> • BidSize/OfferSize fields are required • QuoteModelType = Quote Entry; optional • TotalBidSize/TotalOfferSize must not exist 	<ul style="list-style-type: none"> • BidSize/OfferSize fields are required • QuoteModelType = Quote Entry; required • TotalBidSize/TotalOfferSize are required
Quote modification	<ul style="list-style-type: none"> • BidSize/OfferSize and TotalBidSize/TotalOfferSize are mutually exclusive • QuoteModelType = Quote Modification; optional; Conditionally required when BidSize/OfferSize exist. <p>i.e.: (BidSize/OfferSize AND QuoteModelType) XOR (TotalBid/TotalOfferSize)</p>	<ul style="list-style-type: none"> • BidSize/OfferSize fields are optionally used to modify the display / visible quantity • QuoteModelType = Quote Modification; required • TotalBidSize/TotalOfferSize are optional used to modify the total quantities

The following two diagrams illustrate the example for the two cases of a reserve quote:

1. A reserve quote being modified where QuoteModelType(2403) = Quote Modification
2. One reserve quote is canceled, and a new reserve quote is sent

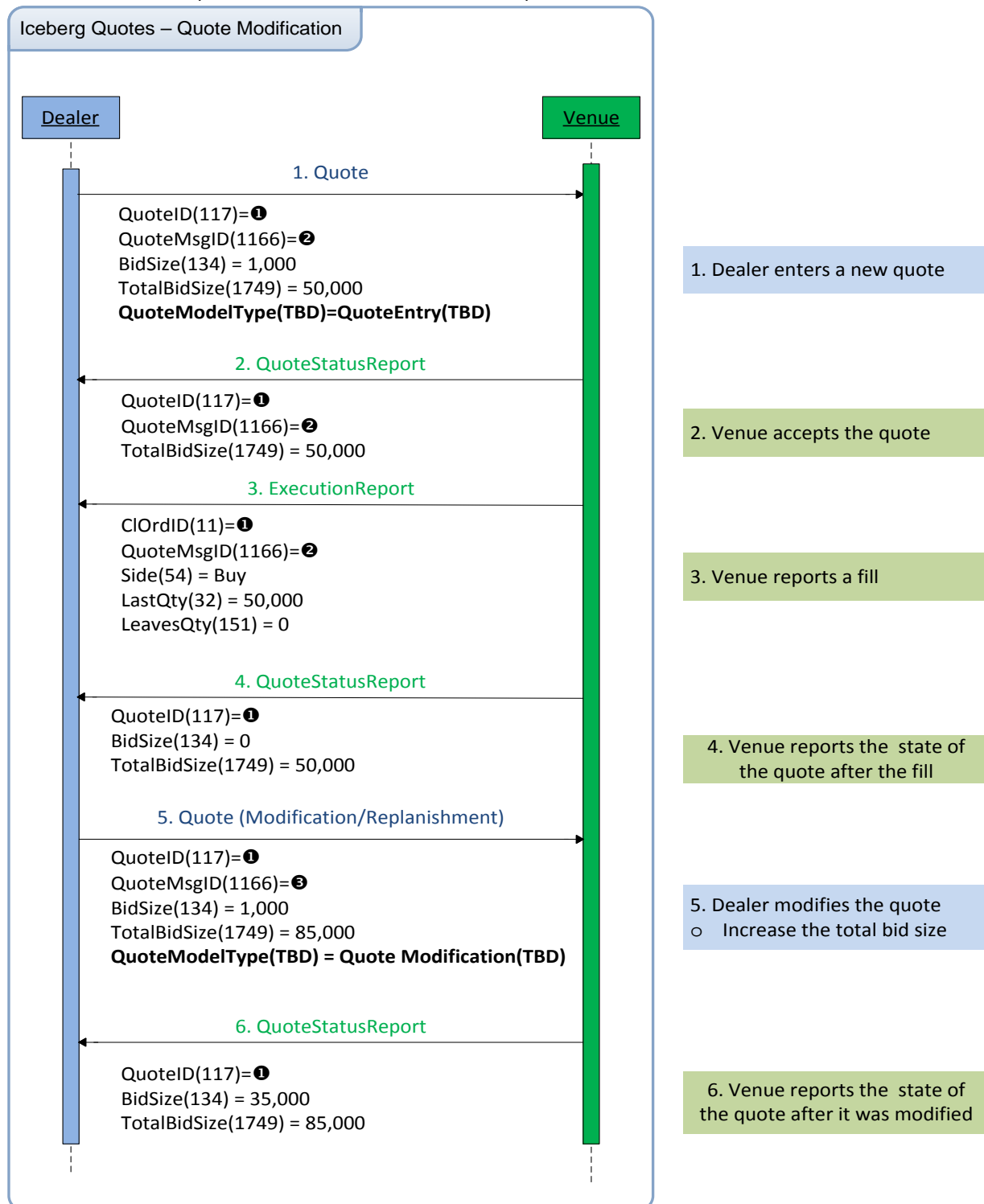


Figure 2: Reserve Quote - Quote Modification

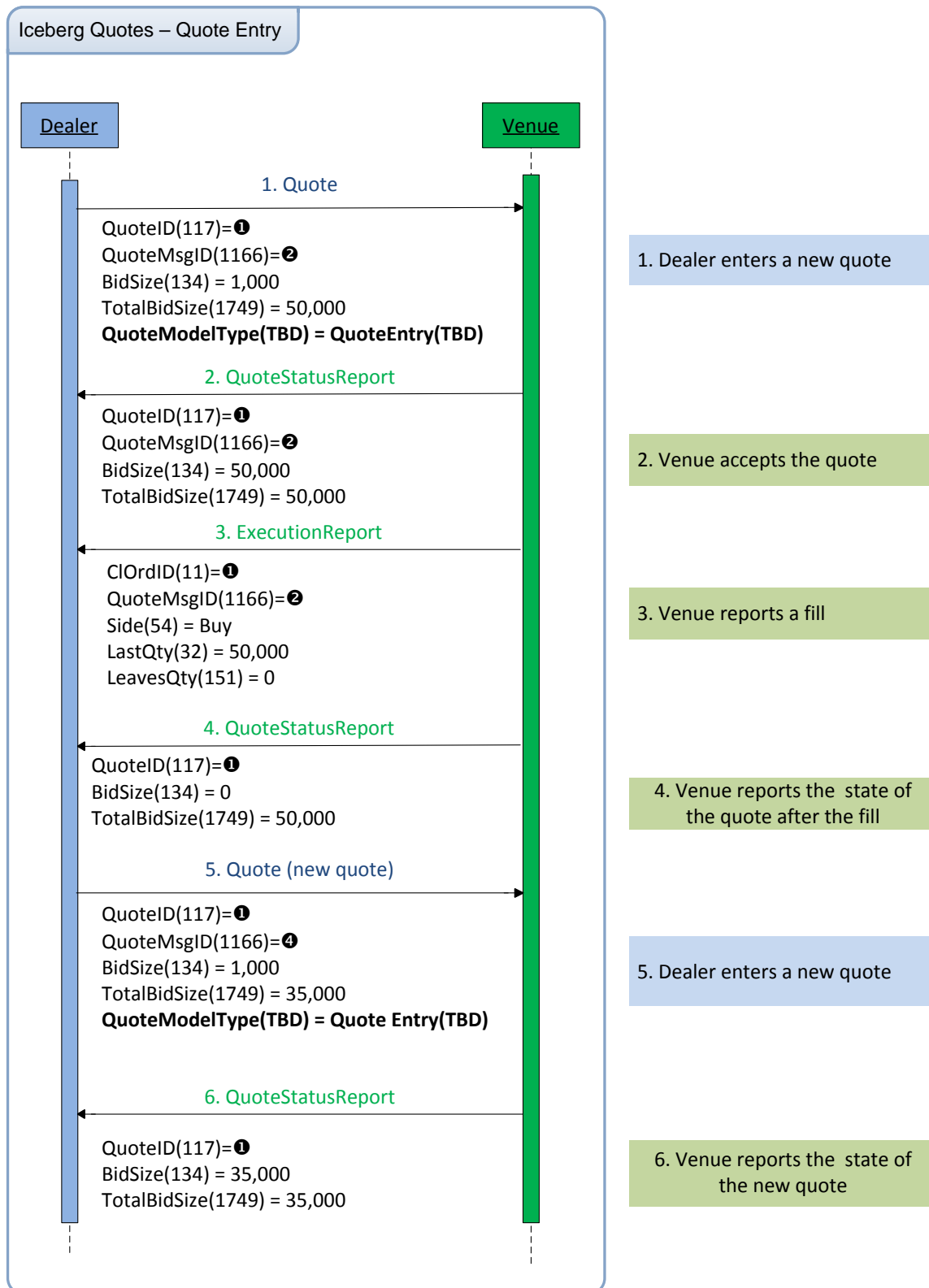


Figure 3: Reserve Quote - Quote Entry

4.2 Axe Indicator

The following illustrates the usage of the new enumerations for making an Axe indication.

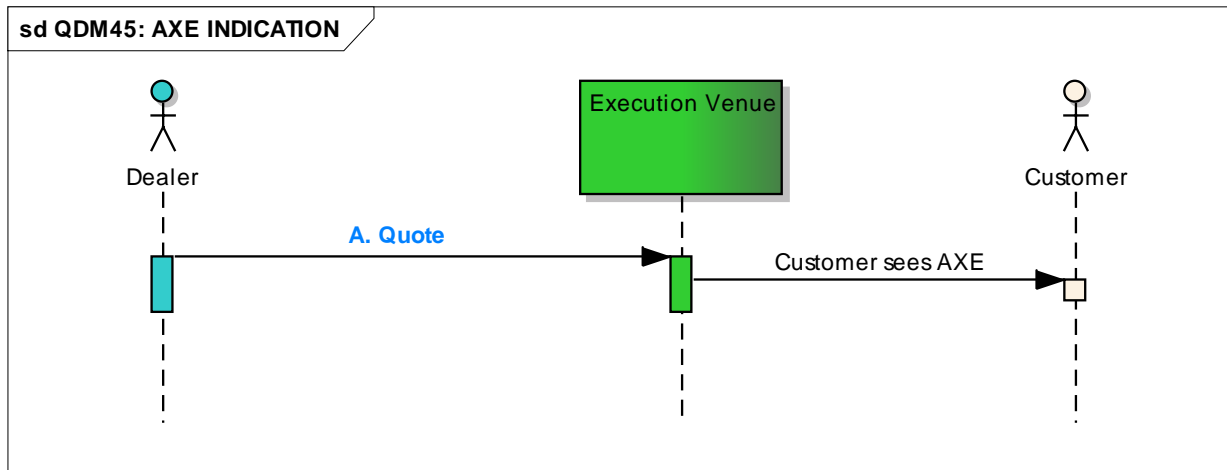


Figure 4: Axe Indicator

<p>(A) Dealer sends Quote with Axe indication</p>	<p>Dealer</p>	<p>→</p> <p>S – Quote QuoteID(117)= ❶ QuoteMsgID(1166)=❷ QuoteType(537)=Indicative(0) Instrument <required> BidPx(132) or OfferPx(133) <Axe target price> BidSize(134) or OfferSize(135) <Axe target size> NoQuoteQualifiers(735)=1 -> QuoteQualifier(695)= <i>Axe on bid Axe on offer Axe</i></p>	<p>Execution Venue</p>
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5 FIX Message Tables

5.1 FIX Message Quote

Quote	
Message Name	Quote
Message Abbreviated Name (for FIXML)	Quot
Category	QuotationNegotiation
Message Synopsis	
Message Elaboration	The Quote message is used as the response to a Quote Request or a Quote Response message in both indicative, tradeable, and restricted tradeable quoting markets.
To be finalized by FPL Technical Office	
(MsgType(tag 35) Enumeration)	S
Repository Component ID	<u>27</u>

Tag	Field Name	Req'd	ICR	Action	Mappings and Usage Comments	FIX Spec Comments
	<i>Standard Header</i>	Y				MsgType =S
131	QuoteReqID					
...						
537	QuoteType					
TBD2403	QuoteModelType	N		NEW		
1171	PrivateQuote	N				
...						
	<i>Standard Trailer</i>	Y				

5.2 FIX Message Mass Quote

Quote	
Message Name	MassQuote
Message Abbreviated Name (for FIXML)	MassQuot
Category	QuotationNegotiation
Message Synopsis	
Message Elaboration	The Mass Quote message can contain quotes for multiple securities to support applications that allow for the mass quoting of an option series. Two levels of repeating groups have been provided to minimize the amount of data required to submit a set of quotes for a class of options (e.g. all option series for IBM).
To be finalized by FPL Technical Office	
(MsgType(tag 35) Enumeration)	i (lowercase)
Repository Component ID	42

Tag	Field Name	Req'd	ICR	Action	Mappings and Usage Comments	FIX Spec Comments
	<i>Standard Header</i>	Y				MsgType =i
131	QuoteReqID					
...						
537	QuoteType					
FBD2403	QuoteModelType	N		NEW		
301	QuoteResponseLevel	N				
...						
	<i>Standard Trailer</i>	Y				

6 FIX Component Blocks

6.1 Component QuotEntryGrp

QuotEntryGrp	
Component Name	QuotEntryGrp
Component Abbreviated Name (for FIXML)	@ QuotEntry
Component Type	Block - Repeating
Category	QuotationNegotiation
Component Synopsis	
Component Elaboration	
To be finalized by FPL Technical Office	
Repository Component ID	<u>2043</u>

Component FIXML Abbreviation: < EntlmntTypQuotEntry >						
Tag	Field Name	Req'd	ICR	Action	Mappings and Usage Comments	Comments
295	NoQuoteEntries	Y				
299	QuoteEntryID	Y				
	Instrument	N				
	InstrmntLegGrp	N				
132	BidPx	N				
133	OfferPx	N				
1749	TotalBidSize	N		ADD		
1750	TotalOfferSize	N		ADD		
134	BidSize	N				
135	OfferSize	N				
...						
</QuotEntryGrp>						

7 Category Changes

No Changes

Appendix A - Data Dictionary

Tag	FieldName	Action	Datatype	Description	FIXML Abbreviation	Add to / Deprecate from Message type or Component block
FBD 2403	QuoteModelType	New	int	<p>Quote Model Type</p> <p>FBD1=Quote Entry (Elaboration: New quote is entered or previously submitted quote is updated in full without regard to amount executed when a subsequent quote (e.g. with the same QuoteID reference) is received by the Recipient of the quote message.)</p> <p>FBD2=Quote Modification (Elaboration: Previously submitted quote must be present and is updated, taking into consideration the amount already executed when a subsequent quote (e.g. with the same QuoteID reference) is received by the Recipient of the quote message.)</p>	@QMode lTyp	Add to: Quote(35=S) QuoteEntryGrp
1749	TotalBidSize	Change	Qty	Specifies the total bid size	@TotBidS z	Add to: QuoteEntryGrp
1750	TotalOfferSize	Change	Qty	Specifies the total offer size	@TotOfs z	Add to: QuoteEntryGrp

Tag	FieldName	Action	Datatype	Description	FIXML Abbreviation	Add to / Deprecate from Message type or Component block
695	QuoteQualifier This field inherits enum values from IOIQualifier, so whatever you're adding here is going to have to be added to the "master" field, IOIQualifier.	Change	Char	A = All or None (AON) B = Market On Close (MOC) (held to close) C = At the close (around/not held to close) D = VWAP (Volume Weighted Average Price) I = In touch with L = Limit M = More Behind O = At the Open P = Taking a Position Q = At the Market (previously called Current Quote) R = Ready to Trade S = Portfolio Shown T = Through the Day V = Versus W = Indication - Working Away X = Crossing Opportunity Y = At the Midpoint Z = Pre-open ⓉBD-E = Axe [Elaboration: indicates-Indicates that a quote is an Axe, without specifying a side preference. Mutually exclusive with ⓉbdE (Axe on bid) and Ⓣbd-G (Axe on offer)] ⓉBD-F = Axe on bid [Elaboration: i ndicates that a quote is an Axe, with a preference to execute on the bid side. Mutually exclusive with ⓉbdE (Axe) and Ⓣbd-G (Axe on offer)] ⓉBD-G = Axe on offer [Elaboration: i ndicates that a quote is an Axe, with a preference to execute on the offer side. Mutually exclusive with ⓉbdE (Axe) and Ⓣbd-F (Axe on bid)]		

Appendix B - Glossary Entries

Term	Definition	Field where used
Axe	An "Axe" or "Ax" is a security or list of securities that a market participant is seeking to purchase or sell. Axe distribution may be limited to one or several potential counterparties, or may be broadly distributed. No response is required on the part of the recipient of axe messages, however, a request for a firm quote or a trade order may be generated as a result of an axe.	QuoteQualifier(695)

Appendix C - Abbreviations

Term	Proposed Abbreviation	Proposed Messages, Components, Fields where used

Appendix D - Usage Examples