HiMTF RFQ - FIX protocol

Notes for Buy-Side FIX developers

Version 1.1

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HISTORY OF CHANGES

v	date	changes
DRAFT 1.0	10-09-2015	First version, not applicable
DRAFT 1.1	25-09-2015	Pg 7: Clarified the usage of minimum quantity in RFQs. Clarified the usage of timeouts in RFQs when limit price/spread is not specified. Clarified mandatoriness of limit price/spread for Switch RFQs. Pg 10: Added usage notes on: OrdType (40), Timeinforce (59), ExposureDuration (1629), MinQty (110), LegMinBidSize (7252), LegMinOfferSize (7254). Deleted note on ExpireTime (126)

REFERENCED DOCUMENTS

[1] FIX Messages Requirements (GOVERNMENT and CORPORATE Bond) v 1.24

1 SCOPE

This document is intended as an addendum to [1] "FIX Messages Requirements (GOVERNMENT and CORPORATE Bond)" document (v 1.24 or later) to help developers to set up a buy-side FIX interface to the RFQ market of the HiMTF exchange.

Document [1] must be used as the main guide to connect to the HiMTF exchange, while this document describes usage notes for FIX messages and fields that are specific for the HiMTF Exchange.

2 MARKET MODEL

This section describes the specifications of the HiMTF RFQ market model.

The following definitions are used, corresponding to member's profiles on the market:

- *Customer* (or *Proposal*): Member enabled to send RFQs
- *Dealer* (or *Aggressor*): Member enabled to receive and responds to RFQs

A member may be profiled as both Customer (Proposal) and Dealer (Aggressor).

The basic features of HiMTF RFQ market model are

- *RFQs are anonymous*: Dealers cannot identify RFQ originators, as well as Customers cannot identify the member who is quoting the request
- all trades are guaranteed by a Central Counterpart
- *RFQs are competitive*: any RFQ is forwarded to all members profiled as Dealers
- a single RFQ may generate multiple trades with one or more different Dealers at different prices
- both Outright (single-leg) and Switch (double-leg) RFQs are allowed.

An RFQ always specifies a security and a buy or sell quantity for each leg. Optionally, it may specify:

- a limit price (one for each leg) or a spread between the two legs (only for Switch RFQs). The limit price (or spread) is mandatory for Switch RFQs.
- whether the RFQ is "all-or-nothing" (minimum quantity equal to the total quantity).
- a custom Settlement date
- whether the RFQ has a timeout (the value is a market default) or it is valid until market closure. If a limit price (or a spread) is not specified, the timeout is mandatory.

The Dealer may respond to an RFQ with a quote, specifying a price and a quantity for each leg. The quoted price must be coherent with the limit price in the request (if any) and the quantity must be coherent with the minimum quantity in the request (if any). The quote may optionally contain a minimum quantity for each leg, under which the price is not valid. In case of Switch RFQ, the quote must specify an explicit price for each leg, even if the original request indicated a spread.

A quote always has two distinct timeouts: an Expiration timeout, after which the quote cannot be hit/lifted any longer, and an Automatching timeout after which, if the quote is hit/lifted, the Dealer is asked for last look (for more details see Section 3). The Expiration timeout is always set as a market default value. The Automatching timeout can either be specified by the Dealer in the quote or a market default value is assumed.

Both automatic and manual executions are allowed. A valid (not cancelled or expired) RFQ is automatically executed by the market against a new quote or quote edit when the following conditions are verified:

1. the RFQ specifies a limit price
2. no manual executions have been requested yet by the Customer
3. for each leg, the proposed price is equal to or better than the limit price in the RFQ
4. the quantity expressed in the quote is lower than or equal to the quantity specified in the request
5. the trade quantity respects the MinQty possibly specified both in the request and in the quote.

If the requested quantity is not completely filled, the RFQ remains active and may generate further deals with the same or other Dealers.

The Customer can also manually execute the RFQ. Two different manual execution modes are available:

1. The Customer hits/lifts a specific quote

- The Customer may specify a quantity lower than the RFQ's Qty, the RFQ's MinQty (if any) and the quoted quantity, provided that it respects the MinQty indicated in the quote by the Dealer (if any)
- By hitting/lifting a specific quote, the Customer accepts the price specified in the quote, even if it is worse than the RFQ's original limit price (if any)
- If the Automatching timeout of the quote has expired, the Dealer is asked for last-look: if the Dealer accepts, the trade is executed, otherwise the manual action is rejected.
- If the requested quantity is not completely filled, the RFQ remains active and may generate further trades with the same or other Dealers.

2. The Customer asks for execution at Market's best

- The Customer delegates to the market the execution of the RFQ at the best conditions available at the time the request is managed. The market executes the RFQ against a set of active quotations chosen according to a predefined algorithm, which takes into account the combination of proposed prices, quantities, min quantities and temporal priority. For details please refer to market regulations.
- An expired quote (Expiration timeout elapsed) does not participate in the Market's Best execution. A quote whose Automatch timeout has elapsed participates in Market's Best execution but the Dealer is asked for last-look.
- Execution at Market's Best does not take into account the limit price and the Min Qty possibly specified in the original RFQ.
- The total executed quantity cannot be larger than the quantity requested in the original RFQ.

- After an execution at Market's Best, the RFQ is closed, independently of the total quantity that the market managed to execute. The remaining quantity, if any, will not be executed.

Depending on configuration, a Customer can request execution at Market's best only, or it may be enabled to both execution modes. If the Customer is enabled to manually hit/lift a specific quote, the Customer is also enabled to reject a specific quote.

As soon as a Customer accepts or rejects a specific quote on a given RFQ, the execution at Market's Best on the same RFQ is no longer available.

3 TRADING APPLICATION LEVEL MESSAGES

3.1 QUOTE REQUEST (R) USAGE RULES

This section describes HiMTF-specific restrictions and usage rules for a subset of fields of the Quote request (R) message.

Tag			Field Name	HiMTF-specific usage rules
100			ExDestination	Valid value: "RFQ"
→	40		OrdType	For Switch RFQs, only value 2 (Limit) is allowed.
→	59		Timeinforce	If OrdType = 1 or is absent, i.e. if no limit price/spread is specified, Timeinforce must be A (GFT)
→	1629		ExposureDuration	Must not be filled: if Timeinforce = A (GFT), the timeout is set by the exchange
→	110		MinQty	Must be either absent (not "all-or-nothing") or equal to OrderQty (38) ("all-or-nothing")
→	453		NoPartyIDs	Must be either absent (the request is issued to all dealers) or 1. If value is 1, only one target list can be specified.
→	→	448	PartyID	Target List code defined by the exchange (TBD)
→	→	452	PartyRole	Valid values: 700 = Target List
→	→	7252	LegMinBidSize	If LegSide = 1 (Buy), must be either absent (not "all-or-nothing") or equal to LegQty (687) ("all-or-nothing")
→	→	7254	LegMinOfferSize	If LegSide = 2 (Sell), must be either absent (not "all-or-nothing") or equal to LegQty (687) ("all-or-nothing")

3.2 ANONYMOUS COUNTERPARTIES

The HiMTF RFQ market model is anonymous. In any Quote (S) and Quote Request Reject (AG) message containing the NoPartyIDs (tag 453) repeating group, field PartyID (tag 448) will be filled with Central Counterpart code 1610.

Analogously, in ExecutionReport (8) messages generated to report a deal, the PartyID (tag 448) field in the repetition with PartyRoleID = 17 (Contra Firm) will be filled with Central Counterpart code 1610.

3.3 MULTI-PARTY EXECUTION

HIMTF allows multiple executions of an RFQ against multiple counterparties. If an RFQ is executed for a quantity lower than the requested quantity, the related Execution Report message (type 8) contains OrdStatus = 1 (Partially Filled). The RFQ remains active and may generate further deals with the same or other counterparties.

3.4 MARKET BEST EXECUTION

Document [1] describes how to hit/lift a specific quote image. As an alternative, in the HiMTF exchange the Customer may decide to Hit/Lift all dealer's quotes at once, delegating the market to choose the quotes to match (see Market's regulation and Section 2 "Market model" for details).

This execution mode is obtained by sending a Quote Response message indicating "MarketBest" in the QuoteID field (tag 117). The QuoteMsgID (tag 1166) must not be filled. Unless the Quote Request is rejected with a Quote Status Report (AI) message because of validation failure, the Customer will receive zero or more Execution Report (8) messages, one for each deal that the market is able to execute against the available quotes.

- If the requested quantity is completely filled, the last Execution Report (8) message with ExecType (150) = F (Trade) will contain OrdStatus(39) = 2 (Filled).
- If the requested quantity is not completely filled, the original request is closed anyway and an Execution Report (8) message is sent to the customer with ExecType (150) = 4 (Canceled) and OrdStatus(39) = 4 (Canceled).

To summarize, a Customer always receives the following sequence of Execution Report (8) messages associated with a single Quote Request (the difference with respect to document [1] is highlighted in red):

	field values	**status of the request**
zero or more messages	ExecType (150) = F (Trade) OrdStatus(39) = 1 (Partially filled)	The request remains active
one final message	ExecType (150) = F (Trade) OrdStatus(39) = 2 (Filled) or ExecType (150) = C (Expired) OrdStatus(39) = 4 (Canceled) or ExecType (150) = 4 (Canceled) OrdStatus(39) = 4 (Canceled)	The request is closed

4 MARKET DATA APPLICATION MESSAGES

The market distributes public information on RFQs and quotations using the "Market Data Snapshot full Refresh" (type W) class. A new message W is published as soon as one of the following events occur:

1. new RFQ
2. new quote or quote edit on an existing RFQ
3. new trade on an existing RFQ
4. an RFQ expires or is cancelled

In case of a trade on a Switch RFQ, two distinct messages are sent, one for each leg of the RFQ.

Type W messages related to RFQ market data can be easily identifiable by the presence of the MDStreamID (tag 1500) field, which contains a unique ID for the RFQ. While the presence of the field identifies the message as related to RFQ market data, the field value allows to tell apart trades and quotations associated with distinct RFQs.

To subscribe RFQ market data in addition to the standard market data, the Market Data Request (type V) message must contain field RFQEntryType (tag 20000). The table below highlights the modifications in message V.

Market Data Request (type V)

Tag	Field Name	Content	Data Type	Req
	Standard Header	MsgType = V		Y
262	MDReqID	Request ID set by the client	String(63)	Y
263	SubscriptionRequestType	Subscription Request Type Valid value: 1 = Snapshot + Updates (Subscribe)	Char	Y
264	MarketDepth	Depth of market for Book Snapshot Valid value: 0 = Full Book (5 Level)	Int	Y
265	MDUpdateType	Specifies the type of Market Data update. Valid value: 0 = Full Refresh	Int	Y
267	NoMDEntryTypes	Will be set to 0: All the available market entry types will be sent except for RFQ data which will be requested through field RFQEntryType	Int	Y

20000	RFQEntryType	Number of RFQEntryType fields requested. Valid values: 0 = RFQ Requests (both new and cancelled/expired RFQs) 1 = RFQ Quotes 2 = RFQ Trades This field can contain multiple instructions separated by space.	Char	N
146	NoRelatedSym	Number of symbols (i.e. Security) requested. Value always set to 0 – It means that Market data response will be sent for all securities.	Int	Y
	Standard Trailer			Y

Market Data Snapshot full Refresh (type W) sent for RFQ events

Besides the MDStreamID (tag 1500) field, type W messages related to RFQ market data may contain QuoteStatus (tag 297) and QuoteEntryID (tag 299). The table below shows the mapping between RFQ event types and the corresponding MDEntryType used in the W message.

RFQ Event Type	MDEntryType (269)	QuoteStatus (297)	QuoteEntryID (299)
New RFQ	0 (Bid)/1 (Ask)	0 = accepted	---
Expired or cancelled RFQ	0 (Bid)/1 (Ask)	6 = removed from market	---
New/Edit quote	0 (Bid)/1 (Ask)	---	yes
Trade	2 (Trade)	---	---

The message is used as response and it is also sent after an RFQ event occurs. When the message is used as response, a message for every past RFQ event is sent, except quote edit events: for each ongoing and closed RFQ, only the latest image of each quote is sent.

The table below highlights the additional fields in message W.

Tag	Field Name	Req	Data Type	Comments
	Standard Header	Y		MsgType = W
262	MDReqID	N	String(63)	Request ID set by the client
48	SecurityID	N	String(64)*	Exchange Security Identifier
22	SecurityIDSource	Y	String(1)	Valid value: 8 = Exchange Symbol
55	Symbol	Y	String(12)*	ISIN Code
1500	MDStreamID	N	String(32)	Exchange QuoteRequestID
63	SettlType	N	Char	Settlement period
64	SettlDate	N	String(8)	Settlement date

268		NoMDEntries	Y	int	Number of entries
→	269	MDEntryType	Y	Char	Must be the first field in this repeating group. Type Market Data entry. Possible value: 2 = Trade
→	270	MDEntryPx	Y	Price	Last Traded Price. (Nine integer places and Five decimal places.)Ex. 999999999.99999. For more details, see page **Error! Bookmark not defined.**
→	271	MDEntrySize	N	Float	Last Traded Quantity
→	272	MDEntryDate	N	String(8)	Trade Date YYYYMMDD
→	273	MDEntryTime	N	String(12)	Trade Time HH:MM:SS.sss
→	274	TickDirection	N	Char	Direction of the "tick". Valid values: 0 – Plus Tick 1 – Zero tick 2 – Minus Tick
→	269	MDEntryType	Y	Char	Possible value: 0 = Bid
→	297	QuoteStatus	Y	int	RFQ status Possible Values: 0 = new RFQ 6 = RFQ removed from market If present, QuoteEntryID (299) is not filled.
→	299	QuoteEntryID	N	string(32)	ID of the quote in response to the RFQ. The value remains unchanged when the quote is updated. If present, QuoteStatus (297) is not filled.
→	270	MDEntryPx	Y	Float	Best Bid Price level. (Nine integer places and Five decimal places.)Ex. 999999999.99999. For more details, see page **Error! Bookmark not defined.**
→	271	MDEntrySize	N	Float	Best Bid Quantity
→	272	MDEntryDate	N	String(8)	Trading Date YYYYMMDD
→	273	MDEntryTime	N	String(12)	Time sent from the Exchange HH:MM:SS.sss
→	346	NumberOfOrders	N	Int	Number of orders at this price level
→	269	MDEntryType	Y	Char	Possible value: 1 = Offer
→	297	QuoteStatus	N	int	RFQ status Possible Values: 0 = new RFQ 6 = RFQ removed from market If present, QuoteEntryID (299) is absent.
→	299	QuoteEntryID	N	string(32)	ID of the quote in response to the RFQ. The value remains unchanged when the quote is updated. If present, QuoteStatus (297) is absent.
→	270	MDEntryPx	Y	Float	Best offer Price level. (Nine integer places and Five decimal places.)Ex. 999999999.99999. For more details, see page **Error! Bookmark not defined.**

→	271	MDEntrySize	N	Float	Best offer quantity
→	272	MDEntryDate	N	String(8)	Trading Date YYYYMMDD
→	273	MDEntryTime	N	String(12)	Time sent from the Exchange HH:MM:SS.sss
→	346	NumberOfOrders	N	Int	Number of orders at this price level
		Standard Trailer	Y		

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