



Quote MTF

# FIXDrop Specification

12 October 2011  
Version 1.02



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### Revision History

| Date             | Revision | Author         | Description of Change                            |
|------------------|----------|----------------|--------------------------------------------------|
| July 17, 2009    | 1.00     |                | Created                                          |
| June 30, 2011    | 1.01     | Corina Visescu | Modified TargetSubID message description.        |
| October 3, 2011  | 1.02     | Corina Visescu | Added tags 6793 and 6794 under Execution Report. |
| October 12, 2011 | 1.02     | Tamas Harsfai  | Added tags 6783 and 6784 under Execution Report. |



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## 1. Introduction

This document describes specifically what functionality is available through Quote MTF FIXDrop application interface. It also describes how QMTF uses the FIX protocol v4.2 to achieve this functionality.

This document is intended to supplement QMTF FIX API Specification; the formats of supported messages and data types used in these messages are exactly same as defined in QMTF FIX API specification.

The QMTF FIXDrop interface is intended to be used by QMTF's client firms, in real time, to monitor the activity of their customers. Client order Execution Reports and Cancellation rejections are reported to the firm via the FIXDrop interface.

QMTF clients can only send session-level FIX messages to QMTF FIXDrop server. FIXDrop does not provide the ability to enter orders into Quote MTF. To enter orders into QMTF, client firms should use one of our connectivity protocols available separately (QMTF FIX API or QDirect).

## 2. Architecture

Quote MTF FIXDrop format is transmitted using the Financial Information Exchange (FIX) protocol. QMTF client firms are required to log in to the FIXDrop application using a standard FIX logon message. Once logged in, the client will only need to send heartbeat message to FIXDrop Server to keep the session active. In the case when clients lost the connection to the FIXDrop host, they should reconnect to the session using the next sequence number. In the event that the sequence numbers are out of synch, the subscriber should send a resend request to retransmit any potentially lost data.

## 3. FIX Drop Configuration

Each QMTF customer may have multiple locations; each location may have multiple connections to QMTF FIX Gateway and multiple Drop Copy connections to FIXDrop Server. Based on QMTF customer ID, Each FIXDrop connection can monitor their own firm's trading activities by receiving either trade execution reports or all QMTF sent messages.



### 3.1 Connectivity

Clients' FIXDrop IP connectivity will be arranged with the extranet provider.

|                           |                 |                                                        |                  |
|---------------------------|-----------------|--------------------------------------------------------|------------------|
| QMTF<br>FIXDrop<br>Server | IP Address      | Address to be connected to                             | Supplied by QMTF |
|                           | TCP Port Number | Port to be connected to                                | Supplied by QMTF |
| SenderCompID              |                 |                                                        | Assigned by QMTF |
| SenderSubID               |                 | For further use                                        |                  |
| TargetCompID              |                 |                                                        | Supplied by QMTF |
| TargetSubID               |                 | Equals to the SenderCompID<br>in messages sent by QMTF |                  |

### 3.2 Sequence Numbers

Message Sequence Number (*MsgSeqNum*), both from client side and QMTF FIXDrop server side, will be reset to 1 at the start of each trading day.

Messages are processed in sequence order. If the *MsgSeqNum* in received message is lower than expected without *PossDupFlag* set to "Y" (Except *SequenceReset-Reset*) cause immediate logout. Ahead of sequence messages (other than a *Resend Request*) trigger a message recovery via a *Resend Request*.

## 4. Fix Protocol Messages

The general format of a FIX message is a standard header followed by the message body fields and terminated with a standard trailer.

### 4.1 Message Header

Format of Standard Message Header:

| Tag | Field Name  | Req'd | Contents           | Description                                                                                                                |
|-----|-------------|-------|--------------------|----------------------------------------------------------------------------------------------------------------------------|
| 8   | BeginString | Y     | String<br>(FIX4.2) | FIX4.2 .Must be first field in message.                                                                                    |
| 9   | BodyLength  | Y     | Int                | Length of message following <i>BodyLength</i> field up to and including the delimiter preceding the <i>Checksum</i> field. |



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|     |                  |   |                  |                                                                                                                                                                                                                                                       |
|-----|------------------|---|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                  |   |                  | Must be second field in message.                                                                                                                                                                                                                      |
| 34  | MsgSeqNum        | Y | Int              | Message Sequence Number. (Resets to 1 at the start of each trading day)                                                                                                                                                                               |
| 35  | MsgType          | Y | String           | Must be third field in message<br>0 = HeartBeat<br>1 = TestRequest<br>2 = ResendRequest<br>3 = Reject<br>4 = SequenceReset<br>5 = Logout<br>8 = ExecutionReport<br>9 = OrderCancelReject<br>A = Logon<br>D = NewOrderSingle<br>F = OrderCancelRequest |
| 43  | PossDupFlag      | N | Boolean          | Indicates possible retransmission of message with this sequence number<br>Valid values:<br>Y=Possible duplicate<br>N=Original transmission                                                                                                            |
| 49  | SenderCompID     | Y | String           | ID of sender. Assigned by QMTF for messages sent to QMTF.                                                                                                                                                                                             |
| 50  | SenderSubID      | N | String           | For further use.                                                                                                                                                                                                                                      |
| 52  | SendingTime      | Y | GMT<br>Date/Time | GMT date-time that message was sent.                                                                                                                                                                                                                  |
| 56  | TargetCompID     | Y | String           | ID of destination.                                                                                                                                                                                                                                    |
| 57  | TargetSubID      | N | String           | Client will receive value specified in SenderCompID in QMTF messages.                                                                                                                                                                                 |
| 97  | PossResend       | N | Boolean          | Indicates possible retransmission of message under a New sequence number.                                                                                                                                                                             |
| 122 | OrigSendingTime  | N | GMT<br>Date/Time | For messages with <i>PossDupFlag</i> = "Y", indicates time that message was first sent.                                                                                                                                                               |
| 115 | OnBehalfOfCompID | N | String           | Trading partner company ID used when sending messages via a third party.                                                                                                                                                                              |

### 4.2 Standard Message Trailer

Each message is terminated by a standard trailer. The trailer is used to segregate messages and contains the three digit character representation of the Checksum value.



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Format of Standard Message Trailer:

| Tag | Field Name | Req'd | Contents | Description                                                                                                       |
|-----|------------|-------|----------|-------------------------------------------------------------------------------------------------------------------|
| 10  | Checksum   | Y     | String   | Modulo 256 checksum of all characters in message up to and including the delimiter preceding the Check Sum field. |

### 4.3 Logon-From FIX Drop Client and QMTF FIX Drop Server

The Logon message authenticates a client establishing a connection to QMTF FIXDrop server. The Logon message must be the first message sent by clients requesting to initiate a FIX session. The *HeartBtInt* value should be agreed upon by the client and QMTF FIXDrop Server, specified by the Logon initiator and echoed back by the QMTF FIXDrop Server.

Upon receipt of a Logon message, QMTF Drop Server authenticates the party requesting connection and issues a Logon message as acknowledgment that the connection request has been accepted. The acknowledgment Logon message can also be used by QMTF Drop Server to validate that the connection was established with the correct party. The normal message delivery should start until after the return Logon message is received.

Format of Logon message:

| Tag | Field Name             | Req'd | Contents | Description                            |
|-----|------------------------|-------|----------|----------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = A                            |
| 98  | EncryptMethod          | Y     | Int      | Method of encryption. '0' = None       |
| 108 | HeartBtInt             | Y     | Int      | Client Heartbeat Interval (In seconds) |

### 4.4 HeartBeat - From FIX Drop Client and QMTF FIX Drop Server

Format of HeartBeat message:

| Tag | Field                  | Req'd | Contents | Description                            |
|-----|------------------------|-------|----------|----------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 0                            |
| 112 | TestReqID              | Y     | String   | Required in response to a Test Request |



### 4.5 TestRequest - From FIX Drop Client and QMTF FIX Drop Server

The *TestRequest* message forces a Heartbeat message from the opposite side. The Test Request message checks sequence numbers or verifies communication line status. The opposite application responds to the *TestRequest* message with a Heartbeat message containing the *TestReqID*. The *TestReqID* verifies that the opposite side is generating the Heartbeat message as the result of the *TestRequest* message and not a normal time out. The opposite side includes the *TestReqID* in the resulting Heartbeat message.

Format of TestRequest message:

| Tag | Field Name             | Req'd | Contents | Description               |
|-----|------------------------|-------|----------|---------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 1               |
| 112 | TestReqID              | Y     | String   | Auto-Generated Request ID |

### 4.6 Resend Request- From FIX Drop Client and QMTF FIX Drop Server

Format of Resend Request message:

| Tag | Field Name             | Req'd | Contents | Description                                                    |
|-----|------------------------|-------|----------|----------------------------------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 2                                                    |
| 7   | BeginSeqNo             | Y     | Int      | Message sequence number of first message in range to be resent |
| 16  | EndSeqNo               | Y     | Int      | 0 means +infinity                                              |

### 4.7 Reject- From FIX Drop Client and QMTF FIX Drop Server (session-level)

Issue a Reject message when a message is received but cannot be properly processed because of a session-level rule violation. The receiver should disregard any message that is garbled, cannot be parsed, or fails a data integrity check. If the sender chooses to retransmit the rejected message, it should be assigned a new sequence number and sent with *PossResend=Y*.



Format of Reject message:

| Tag | Field Name             | Req'd | Contents | Description                                             |
|-----|------------------------|-------|----------|---------------------------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 3                                             |
| 45  | RefSeqNum              | Y     | Int      | Sequence Number of Rejected Message                     |
| 58  | Text                   | N     | String   | Where possible, message to explain reason for rejection |

#### 4.8 SequenceReset-Reset/GapFill- From FIX Drop Client and QMTF FIX Drop Server

The Sequence Reset message is used by the sending side to reset the incoming sequence number on the opposite side. This message has two modes:

- 1) **Sequence Reset-Gap Fill:** when GapFillFlag is Y
- 2) **Sequence Reset-Reset:** when GapFillFlag is N or not present

Use the *SequenceReset-Reset* mode *only* to recover from a disaster situation that cannot be otherwise recovered from though the Gap Fill mode. The *SequenceReset* message can be used in the following situations:

- 1) During normal resend processing, the sender may choose not to send a message (for example, an aged order). Use the Sequence Reset – Gap Fill mode to mark the place of that message.
- 2) During normal resend processing, a number of administrative messages are not resent. Use the *SequenceReset – GapFill* message to fill the sequence gap created.
- 3) In the event of an application failure, it may be necessary to force synchronization of sequence numbers on the sending and receiving sides through the use of *SequenceReset –Reset*.

The sender initiates the sequence reset. The message in all situations specifies *NewSeqNo* to reset as the value of the next sequence number immediately following the messages and/or sequence numbers being skipped.



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If the *GapFillFlag* field is not present (or set to N), it can be assumed that the purpose of the sequence reset message is to recover from an out-of-sequence condition. Ignore the *MsgSeqNum* in the header.

If the *GapFillFlag* field is set to Y, the *MsgSeqNum* of the *SequenceReset-GapFill* message should represent the beginning *MsgSeqNum* in the Gap Fill range. The sequence reset can only increase the sequence number. If a *SequenceReset* is received attempting to decrease the next expected sequence number, reject the message and treat it as a serious error.

Format of SequenceReset message:

| Tag | Field Name             | Req'd | Contents | Description                                                                         |
|-----|------------------------|-------|----------|-------------------------------------------------------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 4                                                                         |
| 36  | NewSeqNo               | Y     | Int      | Next expected Sequence Number                                                       |
| 123 | GapFillFlag            | N     | Boolean  | N = Sequence Reset, ignore MsgSeqNum<br>Y = Gap Fill message, MsgSeqNum field valid |

### 4.9 Logout- From FIX Drop Client and QMTF FIX Drop Server

Format of Logout message:

| Tag | Field Name             | Req'd | Contents | Description                 |
|-----|------------------------|-------|----------|-----------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 5                 |
| 58  | Text                   | N     | String   | Indicates reason for logout |

### 4.10 Execution Report -From QMTF to FIX Drop Client

Format of Execution Report message:

| Tag | Field Name             | Req'd | Contents | Description                                                                                                                                 |
|-----|------------------------|-------|----------|---------------------------------------------------------------------------------------------------------------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 8                                                                                                                                 |
| 1   | Account                | N     | String   | 10 char long, starts with "H" or "C" followed by ":" and account name.(Character without the quote). Valid value start with "H" means house |



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|    |               |   |          |                                                                                                                                                                                                                                                                                     |
|----|---------------|---|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |               |   |          | account; start with "C" means client account.<br>Default value is "H" without account name.                                                                                                                                                                                         |
| 6  | AvgPx         | Y | Price    | Calculated average price of all fills on this order. The number of decimal digits is up to 5.                                                                                                                                                                                       |
| 11 | ClOrdID       | Y | String   | Unique identifier for client's order within a trading day.                                                                                                                                                                                                                          |
| 14 | CumQty        | Y | Qty      | Total number of shares filled.                                                                                                                                                                                                                                                      |
| 17 | ExecID        | Y | String   | Unique identifier of Execution Report                                                                                                                                                                                                                                               |
| 20 | ExecTransType | Y | Char     | 0 = New<br>1 = Cancel                                                                                                                                                                                                                                                               |
| 22 | IDSource      | Y | String   | Identifies class of alternative Security ID<br>Valid values:<br>4 = ISIN                                                                                                                                                                                                            |
| 30 | LastMkt       | N | Exchange | Market of execution for the last fill<br>(Default value is QMTF Exchange Code:79)                                                                                                                                                                                                   |
| 31 | LastPx        | N | Price    | Price of this (last) fill. The number of decimal digits is up to 5.                                                                                                                                                                                                                 |
| 32 | LastShare     | Y | Qty      | Quantity of shares bought/sold on this (last) fill                                                                                                                                                                                                                                  |
| 37 | OrderID       | Y | String   | QMTF Generated OrderID, will be unique for the day.                                                                                                                                                                                                                                 |
| 38 | OrderQty      | Y | Qty      | Order Quantity                                                                                                                                                                                                                                                                      |
| 39 | OrdStatus     | Y | Char     | Identifies current status of order.<br>Valid values:<br>0 = New<br>1 = Partial fill<br>2 = Fill<br>3 = Done for day<br>4 = Canceled<br>6 = Pending Cancel (e.g. result of Order Cancel Request)<br>7 = Stopped( Administrative action on an order)<br>8 = Rejected<br>9 = Suspended |
| 41 | OrigClOrdID   | N | String   | ClOrdID of the previous order (NOT the initial order of the day) as assigned by the QMTF, used to identify the previous order in cancel requests.                                                                                                                                   |
| 44 | Price         | Y | Price    | Order execution price. The number of                                                                                                                                                                                                                                                |



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|      |                  |   |          |                                                                                                                                                                                                                                                                                                                                                                                                     |
|------|------------------|---|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                  |   |          | decimal digits is up to 5.                                                                                                                                                                                                                                                                                                                                                                          |
| 47   | Rule80A          | N | Char     | Valid value:<br>A=Agency<br>P=Principal.<br>Default value is :P                                                                                                                                                                                                                                                                                                                                     |
| 48   | SecurityID       | Y | String   | ISIN (IDSource =4)                                                                                                                                                                                                                                                                                                                                                                                  |
| 54   | Side             | Y | Char     | Valid values:<br>1 = Buy<br>2 = Sell<br>5 = Sell short                                                                                                                                                                                                                                                                                                                                              |
| 55   | Symbol           | Y | Char     | QMTF published Uniform MTF Security Symbol or “[N/A]” string (without the quote).                                                                                                                                                                                                                                                                                                                   |
| 58   | Text             | N | String   | Free format text string                                                                                                                                                                                                                                                                                                                                                                             |
| 150  | ExecType         | Y | Char     | Describes the specific Execution Report (i.e. PendingCancel) while OrdStatus will always identify the current order status (i.e. Partially Filled)<br>Valid values:<br>0 = New<br>1 = Partial fill<br>2 = Fill<br>3 = Done for day<br>4 = Canceled<br>6 = Pending Cancel (e.g. result of Order Cancel Request)<br>7 = Stopped ( Administrative action on an order)<br>8 = Rejected<br>9 = Suspended |
| 151  | LeavesQty        | Y | Qty      | Amount of shares open for further execution. LeavesQty = OrderQty - CumQty.                                                                                                                                                                                                                                                                                                                         |
| 207  | SecurityExchange | N | Exchange | Market Codes of the Exchanges (Reuters Exchange Codes)where the Security listed on, See <i>Appendix A</i>                                                                                                                                                                                                                                                                                           |
| 9730 | Liquidity Flag   | N | Char     | Required for Fill and Partial Fill<br>Valid Value:<br>Y=Added<br>N=Remove                                                                                                                                                                                                                                                                                                                           |
| 6783 | SuppSelfTrd      | N | Bool     | Indicates if the order is resulted to a self-trade it should be clearing exempted.                                                                                                                                                                                                                                                                                                                  |



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|      |                 |   |      |                                                                     |
|------|-----------------|---|------|---------------------------------------------------------------------|
| 6784 | PortfolioID     | N | Int  | Optional PortfolioID                                                |
| 6793 | Clearing Exempt | N | Bool | Y – clearing suppressed self-trade<br>N – regular trade (default)   |
| 6794 | CptPortfolioID  | N | Int  | PortfolioID of the counterparty if the trade was clearing exempted. |

### 4.11 Cancel Reject-From QMTF to FIX Drop Client

Format of Order Cancel Reject message:

| Tag | Field Name             | Req'd | Contents | Description                                                                                                                                                                                                                                                                         |
|-----|------------------------|-------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <i>Standard Header</i> | Y     |          | MsgType = 9                                                                                                                                                                                                                                                                         |
| 11  | ClOrdID                | Y     | String   | Alphanumeric and Unique within a trading day.<br>Validation is case insensitive, so reusing an ID differing in case only will cause rejection.                                                                                                                                      |
| 37  | OrderID                | Y     | String   | Unique identifier for order as assigned by QMTF within a trading day. If CxlRejReason= "Unknown order", specify "NONE".                                                                                                                                                             |
| 39  | OrdStatus              | Y     | Char     | Identifies current status of order.<br>Valid values:<br>0 = New<br>1 = Partial fill<br>2 = Fill<br>3 = Done for day<br>4 = Canceled<br>6 = Pending Cancel (e.g. result of Order Cancel Request)<br>7 = Stopped( Administrative action on an order)<br>8 = Rejected<br>9 = Suspended |
| 41  | OrigClOrdID            | Y     | String   | ClOrdID of the previous order (NOT the initial order of the day) as assigned by the QMTF, used to identify the previous order in cancel and cancel/replace requests.                                                                                                                |
| 58  | Text                   | N     | String   | Free format text string                                                                                                                                                                                                                                                             |



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|     |                   |   |      |                                                                                                                                                     |
|-----|-------------------|---|------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 102 | CxlRejReason      | N | Int  | Code to identify reason for cancel rejection<br>0= too late to cancel<br>1= unknown order<br>2= broker option<br>3= order already in Pending Cancel |
| 434 | CxlRejResponse to | N | Char | Identifies the type of request that this message is in response to.<br>Valid values:<br>1= Order Cancel Request                                     |

### 5. Appendix

#### 5.1 Market Codes

For more detail about Reuters Exchange Code, please check:

<http://www.fixprotocol.org/specifications/exchanges.shtml>

#### 5.2 ISO Currency Codes

For more details about 3 letter ISO currency codes, please check:

[http://www.iso.org/iso/support/faqs/faqs\\_widely\\_used\\_standards/widely\\_used\\_standards\\_other/currency\\_codes/currency\\_codes\\_list-1.htm](http://www.iso.org/iso/support/faqs/faqs_widely_used_standards/widely_used_standards_other/currency_codes/currency_codes_list-1.htm)