EQUIDUCT

FIX Specification 2.8 – January 2012

Disclaimer
This is the "Trading Services Launch Release" of the FIX specifications for connectivity to the Equiduct Trading System ("ETS"). Minor updates and corrections may be applied to the specification based upon member, market data vendor and Regulatory feedback
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1 INTRODUCTION

1.1 Document Purpose

This document describes how to programmatically access the functions of the Equiduct trading system. The functions of the system are divided into:

- the Transactional Messaging Interface; and
- the Market Data Interface

1.2 Intended Audience

This document is aimed at systems developers of Equiduct members and Market Data Vendors who want to develop applications to communicate programmatically with Equiduct.

This document does not provide all of the business level information pertinent to Equiduct: see "Related Documents" for details of further system documentation. Updates to this and other key documents can be found at http://www.equiduct.com.

1.2.1 Related Documents

The following documents are useful in understanding concepts discussed in this document:

Document Title	Version No /Date	URL
• Financial Information Exchange Protocol (FIX)	Version 4.4	www.fixprotocol.org/specifications
• Exchanges/ECN Working Group Best Practices Phase 1	Version 1	http://fixprotocol.org/committees/gexmc/documents
• Market Data Working Group Recommended Practices for Book Management	Version 2	http://fixprotocol.org/committees/gexmc/documents
• Equiduct Market Model Description	April 2011 Version 3.4	http://www.equiduct.com
• VBBO Service Description	December 2007	

1.3 Revision History

Version	Date Issued	Comment
• VBBO Production Candidate V1.0	January 2008	Candidate Release for VBBO.
• VBBO Production Candidate V1.1	February 2008	VBBO Production Release
• Trading Services Production Candidate V1.2	April 2008	Added maximum length of unique identifiers. Made QuoteID/Symbol identification mutually exclusive. Added MDEntryDate to market data messages Added description of "Restated" execution reports. Added ability to perform "mass halts" for PartnerEx relationships. Added support of LastRptRequested tags Added ExecRefID to Execution Report for Market Control trade cancellations
• Trading Services Production Release	June 2008	Various Usage Clarifications. OrigClOrdID will not be sent on OrderCancelReject messages when order cannot be found. Amended OrderCancelReject message to include “Text” field. PartnerExRelationshipStatus(U3) message to include “Text” field.
• Rollup Release	August 2008	Amendments to Market Data Messages to • Distinguish between trades in Time and Sales messages. • Removed CorpAction tag from snapshot messages Additions to PartnerEx Status message to show party responsible for halt. Clarifications based on user feedback.
• V1.6	April 2009	Clarification of cancel criteria and use of tag 37 Minor tidy up Addition of 851 LastLiquidityInd to Execution Report Addition of 10013 PartnerExProviderSide to Custom U2 (PartnerEx relationship update) and U3 (PartnerEx relationship status) message Clarification of PartnerExPriority visibility, tag 10005 Clarification that an Order Cancel Reject will be sent in

Version	Date Issued	Comment
		response to an invalid attempt to amend an order in the central limit order book. Removed reference to ExpiryDate in Execution Report message Updated description of tag 276 (QuoteCondition) to reflect ability to close a quote during the trading day Updated Quote Management and Order Management sections to describe automated actions that occur if a disconnect or logout is detected.
• V1.7	July 2009	Added new field SecondaryOrderID for ExecutionReport and two new fields BuyQuoteID and SellQuoteID for Quote Status Report. Added a description for the use of these fields. Clarification that BidPx, OfferPx, BidSize and OfferSize are not required when closing a quote with the Quote message. Added additional enumeration value 10 (Pending) value for tag 297 (QuoteStatus) to indicate a Quote is closed pending user action. Added Market and Primary pegged order types with the ability to specify a peg offset value.
• V1.8	October 2009	Added additional enumeration value 5 (Unknown) to OrdRejReason for ExecutionReports. Updated ExecRestatementReason as value will be applicable for GTC orders as well as ATC/ATO orders. Updated OrderCancelReplace message to include ExecInst and PegOffSetValue fields. Pegged orders enabled in this release.
• V2.0	March 2010	Removed ignored fields from Quote message Remove references to Trade Reporting functionality Added enumeration types “OC” and “CC” for TradeCondition (277). Added references to new market model for PartnerEx orders including additional TimeInForce (59) values. Added description of Imbalance Orders and clarified implementation of Sweep orders including details of fields ExecType(150), OrderStatus(39) and TimeInForce(59) for both types.
• V2.0 revision 1	March 2010	Corrections to fields that can be amended for an order.

Version	Date Issued	Comment
• V2.1	October 2010	Addition of At Best order type which is reserved for future use. Updated document to reflect UMTF symbology changes. Updated description for ExecRestatementReason and marked it as conditionally required. Updated description for ExpireTime. Updated description for QuoteMsgID in the Quote Status Report message. Removed references to Imbalance orders which are no longer in use. Deprecated Trading Session Status functionality. Added Good For Session TimeInForce.
• V2.2	Nov 2010	Added further TradeCondition values to Market Data messages for Trade Reports.
• V2.3	Nov 2010	Added TradeCaptureReport and TradeCaptureReportAck messages for Trade Reporting. At Best order type enabled in this release.
• V2.4	Jan 2011	Added Stop order type.
• V2.5	Mar 2011	Added ClearingHandlingType for New Order Single and Execution Reports. Removed reference to unused QuoteCondition tags from Market Data Messages Description added to TickMultiplier tag (9816) in Quote message describing how to disable automatic quote refresh
• V2.6	Jun 2011	Added SecurityExchange(207) to Outbound Transactional messages
• V2.7	October 2011	Notice of deprecation of TickMultiplier(9816) – used for price improvement from Update PartnerEx Relationship(U2) and Partner ExRelationship Status(U3) Notice of deprecation of PartnerExFeeSplit(10006) from Update PartnerEx Relationship(U2), PartnerEx Relationship Status(U3) and list of Custom Tags in Appendix B Updated Execution Report to show SecondaryOrderID(198) as Conditionally required.
• V2.8	January 2011	Updated SenderSubID(50) and TargetSubID(57) descriptions to reflect additional functionality of allowing PartnerEx Orders to carry further sender information. Updated description for Price(44) in New Order Single

Functional Overview

For a full specification of Equiduct functions please see the appropriate Market Model Description documents available from Equiduct.

In summary the Equiduct FIX Interface allows external systems to connect to Equiduct to:

1) Open quotes (Market Makers only).
2) Enter/update quotes and quote parameters (Market Makers only).
3) Receive quote status and execution reports (Market Makers only).
4) Enter orders for execution in Equiducts trading mechanisms, namely:
    - Hybrid order book.
    - PartnerEx.
5) Receive order status and execution reports.
6) Cancel orders (within certain constraints) submitted to the Hybrid order book.
7) Manage PartnerEx relationships.
8) Submit trade reports for off-exchange transactions to Equiduct for publication in Market Data
9) Receive Market Data pre and post trade transparency information.
10) Receive Market Data notifications of Equiduct Market Control actions.

For convenience and context this section provides a summary of the high level business functions available and the key messages used to access those functions.

1.3.1 Quote Management / Execution

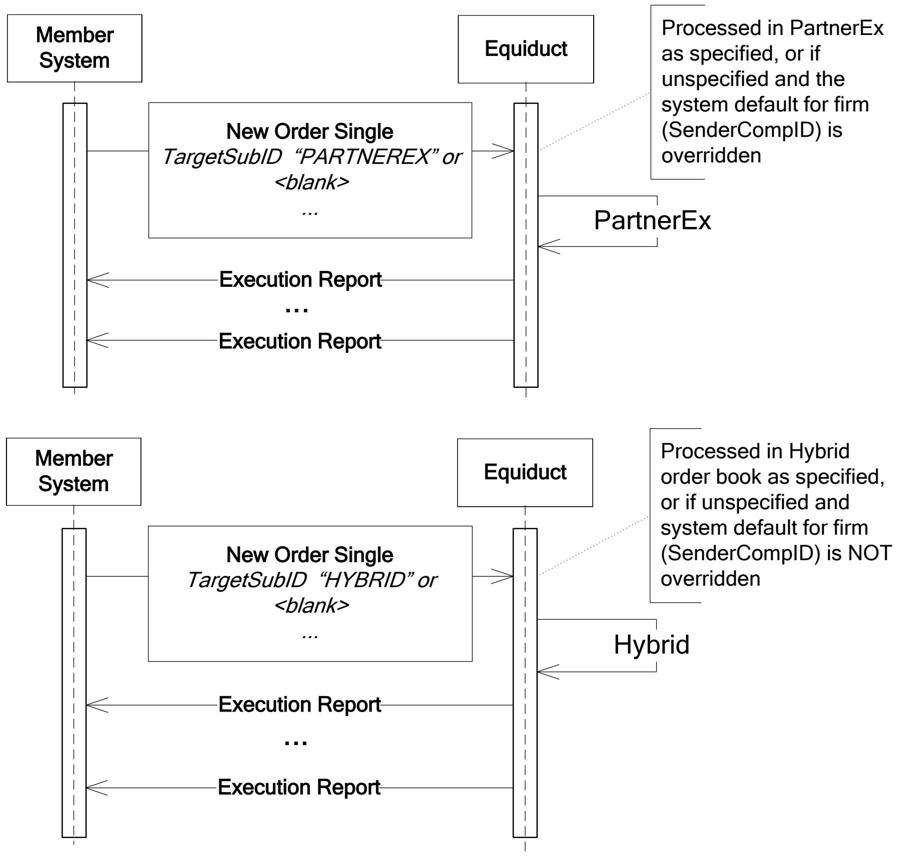
Market Maker quotes are input and updated using the **Quote** message; for valid quote messages Equiduct will return a **Quote Status Report** message. Market Maker quotes must be two-sided; that is, there must be a bid and an offer price and they must be in a size that is equal to or greater than the minimum quote size (MQS) for the quoted security as determined by Equiduct Market Control. The minimum quote size for an Instrument is specified in the RefreshSize (9871) tag of the **Security List** message. Each side of the quote can be updated independently. Market Maker quotes participate in the Hybrid order book, and are therefore available for electronic execution.

A TickMultiplier parameter can be specified (> 0) to override the default of 100. Alternatively a request can be made to Equiduct Market Control to have this parameter altered on a per Instrument basis. TickMultiplier is used by the quote refresh function required for the orderly participation of quotes in the Hybrid order book.

If an execution reduces the quote size below the minimum quote size for the Instrument in question, then the quote is refreshed at a size equal to the minimum quote size for the Instrument and to a price (TickMultiplier x Instrument Tick Size) lower/higher than the Market Maker’s previous bid/offer, depending upon the side of the quote that is being refreshed. The Market Maker is advised of the execution through an **Execution Report** message and of the quote status change through a **Quote Status Report** message.

1.3.2 Order Management / Execution

Equiduct provides the ability for all members of Equiduct to enter orders into the system for execution in one of the execution facilities. The Hybrid order book is the default execution facility if nothing is specified in the Header TargetSubID field. A default execution facility can be set up at a member firm level in advance through Equiduct Market Control. Default behaviour can be overridden on a per order basis by specifying the appropriate value in the Standard Header, as illustrated below.



Orders for the Hybrid Order Book

Orders can be submitted to a central limit order book where they compete with other orders and quotes entered in the central price formation and execution algorithms. Orders are input using the **New Order Single** message and updated using the **Order Cancel/Replace Request** message. Their status and details of any executions are returned by Equiduct using the **Execution Report** message.

Orders for the PartnerEx Facility

This facility allows members to route orders for execution against one or more Market Makers with whom they have established a PartnerEx relationship. Orders for PartnerEx are dispatched using the **New Order Single** message. Their status and details of any execution are returned by Equiduct to the order originator and Market Maker using the **Execution Report** message.

1.3.3 Reporting Trades not Executed on Equiduct

Trades conducted off Equiduct may be reported to Equiduct using the Trade Capture Report message, and may be cancelled by the entering Member using the same message type.

1.3.4 Market Data

Equiduct provides the ability for a member to build a variety of views of the Equiduct Market. It is possible to obtain pertinent information about all Instruments available for trading on Equiduct. Top-of-book (also referred to as best bid and offer, or Level I) summary information and/or full book depth information can be obtained and maintained for each Instrument traded in the Hybrid book. Post-trade (also referred to as Time and Sales) information is also provided for all trades reported to, or executed on, Equiduct. The Equiduct VBBO is also provided as a proxy for pre-trade transparency of the PartnerEx trading facility.

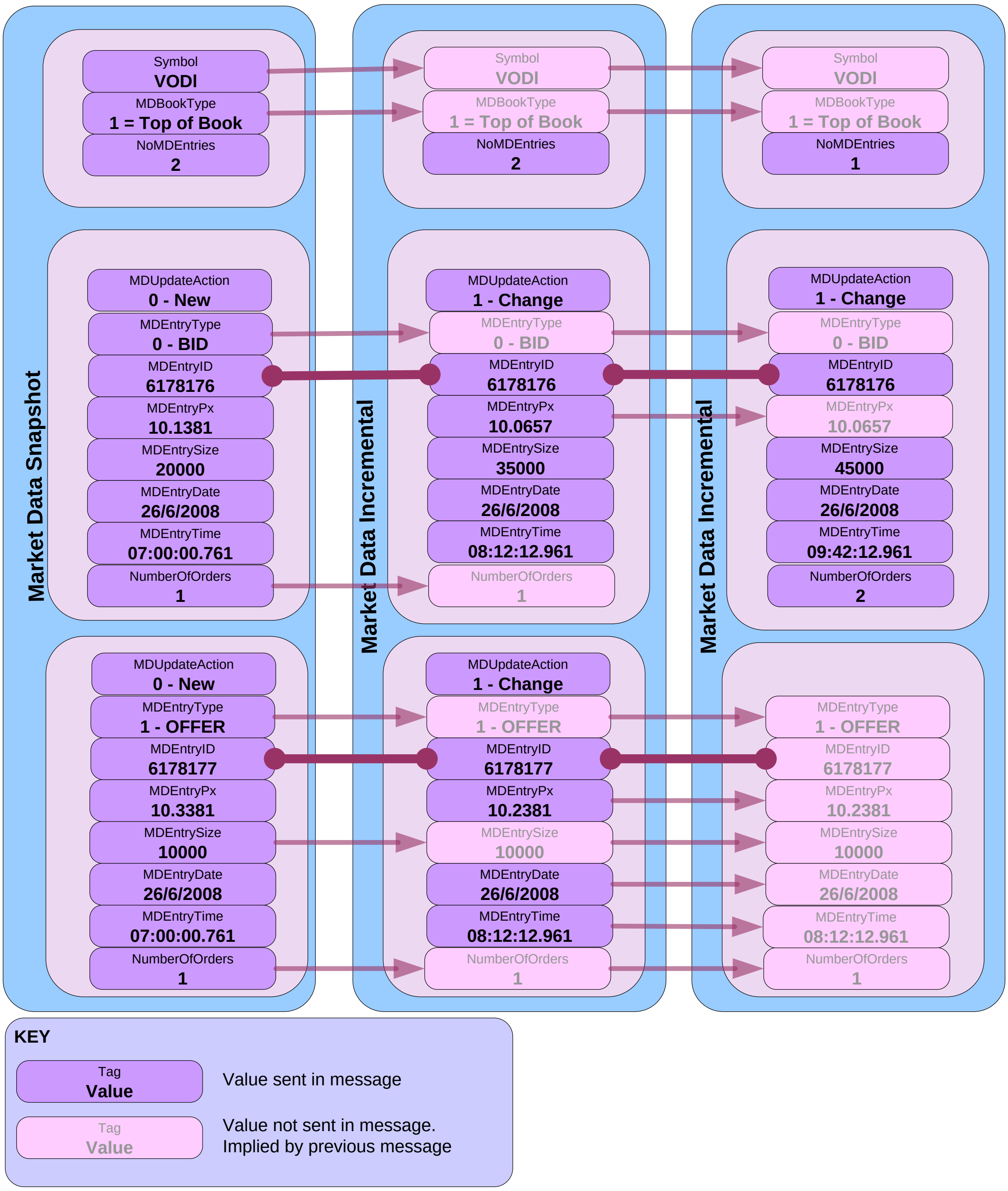
Different "types" of data can be obtained by specifying the correct MDBookType. Supported MDBookTypes are as follows:

- 0 = Trade (Time & Sales)
- 1 = Top-Of-Book
- 2 = Price-Depth
- 99 = VBBO

The following table shows the type of data that can be found in each book type:

			MDEntryType								
			0	1	2	4	5	7	8	B	I
			Bid	**Offer**	**Trade**	**Open Price**	**Close Price**	**Session High**	**Session Low**	**Trade Volume**	**Instrument Status**
MDBookType	0	**Time and Sales**	✗	✗	✓	✗	✗	✗	✗	✗	✗
	1	**Top of Book**	✓	✓	✗	✓	✓	✓	✓	✓	✓
	2	**Price Depth**	✓	✓	✗	✗	✗	✗	✗	✗	✗
	99	**VBBO**	✓	✓	✗	✗	✗	✗	✗	✗	✓

Market data is transmitted as an initial snapshot, followed by a number of "incremental" messages throughout the trading day. Information is transmitted as efficiently as possible with no redundant data being sent. For this reason it is essential to tie messages together using the "MDEntryID" tag. The diagram below shows an example of this:



The diagram shows an initial market data snapshot showing that the top of book is:

Bid	20000 shares at 10.1381 in one order
Offer	10000 shares at 10.3381 in one order

An incremental market data message is then sent. On the bid side the price and quantity of that one order making up the top of the book both change and so are sent. The number of orders making up the top of book does not change and so is not sent (signified in the diagram by the lighter colour). Note also that the initial snapshot sets up the relationship between the MDEntryID values and the symbol. Future incremental messages do NOT include the Symbol.

On the offer side only the price changes at this time, the quantity remains the same. The state of the top of book after the first incremental message is thus:

Bid	35000 shares at 10.0657 in one order
Offer	10000 shares at 10.2381 in one order

Finally at 09:42 another update is required. This time only the bid side is affected, so a single update is received (MDEntryID=6178176). This time another order has joined the existing order at the top of the book. The current state of the top of book is therefore:

Bid	45000 shares at 10.0657 in two orders
Offer	10000 shares at 10.2381 in one order

2 FIX MESSAGE EXCHANGE

Equiduct abide by the generally accepted FIX standards wherever possible. Any areas of deviation are explicitly documented.

2.1 Harmonized Workflow

Equiduct adopt the following elements of the harmonized workflow as described by the FPL Global Exchanges & Markets Committee Best Practices. Please refer to the working group documentation for further details.

2.1.1 Order Identification

Reflecting the fact that exchanges typically manage their own order identification scheme, issuing an ID (OrderID) which is used to identify or access an order, best practice allows this ID to be used instead of Client Order ID for order modifications and deletion.

2.1.2 Message Bundling

For performance reasons, best practice stipulates that multiple messages may be replaced with a single message where it can infer all relevant information. For instance, if an order is partially filled on entry, only a 'partial fill' execution report will be generated, the 'new' state is dropped as it can be inferred.

2.2 Messages and Fields

2.2.1 Message and Field Validation

The FIX Gateway performs validation on messages and supported fields. Field validation checks include:

- Body length and checksum verification.
- Numeric field (e.g. price, amount) format validation.
- Allowed values validation.
- Date and time field format validation.
- Mandatory field verification.

Any failure in the above, or other message level failures, will result in a **Reject** message being returned to the Member system, with the appropriate SessionRejectReason and descriptive text.

2.2.2 Timestamps

Equiduct adheres to the FIX standard, requiring all timestamps to be in UTC and in ISO format.

2.2.3 Custom Fields

A number of custom tags are employed in the messages. Wherever possible these reuse custom tags already registered with FPL or utilise FIX 5.0 SP1 fields where applicable.

2.2.4 Symbology

Equiduct supports Equiduct stock mnemonics (preferred) and ISIN identifiers. In order to uniquely identify an instrument, currency must also be provided when specifying ISIN. For simplicity, tag 55 (Symbol) should only ever be used to convey the Equiduct mnemonic. If ISIN is to be used then Symbol should be set to "[N/A]" (without the quotation marks), tags 48 (SecurityID) should contain the ISIN and tags 22 (SecurityIDSource) and 15 (Currency) should be populated accordingly.

Response messages generated by Equiduct will, wherever possible, contain both Equiduct mnemonic (Symbol) and ISIN (SecurityID) (plus Currency).

In common with several other European markets, Equiduct uses the UMTF symbology where symbols consist of 6 characters or less and are constructed from the home market code with a trailing lowercase character that identifies the home market. An example of such a symbol is "VODl". Members should always use the symbol provided in SecurityList messages rather than attempting to construct their own symbols.

2.3 Fix Session

Equiduct supports standard FIX session semantics including sequence number management, resend requests, gap fills etc. The exception is for Market Data connections, see section 0.

2.3.1 Encryption

Equiduct does not currently support message level encryption.

2.3.2 Unique Message IDs

Where message IDs will be used to refer back to earlier messages, it is the client's responsibility to guarantee their uniqueness. Equiduct will return message IDs on resultant response messages without validating their uniqueness.

The exception is Client Order ID. Where a ClOrdID is repeated and a possible resend is indicated, the message will be dropped, if PossResend is not indicated then the message will be rejected by Equiduct.

Note: Aside from the PossResend case, once a ClOrdId is submitted to Equiduct it should not be reused by the member regardless of the response received from Equiduct.

2.3.3 Session Level Rejects

In accordance with the FIX specification, session level rejects (**Reject**) will be issued only when messages fail data integrity checks. They will include SessionRejectReason, and a description in the Text tag. Where possible, messages will be forwarded to the Equiduct internal systems, which may respond with an appropriate rejection (for instance **Execution Report** or **Order Cancel Reject**) or, as a last resort a **Business Message Reject**. Please refer to FIX specification for examples of failures resulting in session level rejection.

2.3.4 Nightly Maintenance

Equiduct will log-off all FIX sessions before performing nightly maintenance. A new FIX session must be established the following day, with sequence numbers commencing from 1 in the normal way.

All quotes are closed at end of day, but quote values are maintained and they can be reopened the following day if desired. GTC and unexpired GTT orders will remain active the following day.

2.3.5 Market Data Connections

Due to the transient nature of market data, and high volumes of message traffic, market data connections will utilize simplified FIX session behaviour. Equiduct offers a point-to-point connection over which all messages are exchanged with an alternative configuration that provides the conflation of market data updates.

In both configurations each and every logon message received by the Market Data Gateway will begin a new FIX session. This requires that the logon always specifies sequence number 1, and the responses will also begin with sequence number 1. In order to be FIX compliant, the Logon message must also contain the ResetSeqNumFlag. The external system should then submit Market Data Request messages and will, in general, receive market data snapshots to bring them back up to date without needing to receive all intervening updates.

Similarly, due to the lack of state maintained by the FIX Gateway, resend requests are not supported and will result in a disconnection. Resend requests may however be issued by the Gateway to request resend of messages; it is left to the external system to determine whether true resend functionality or simple gap-fills will result.

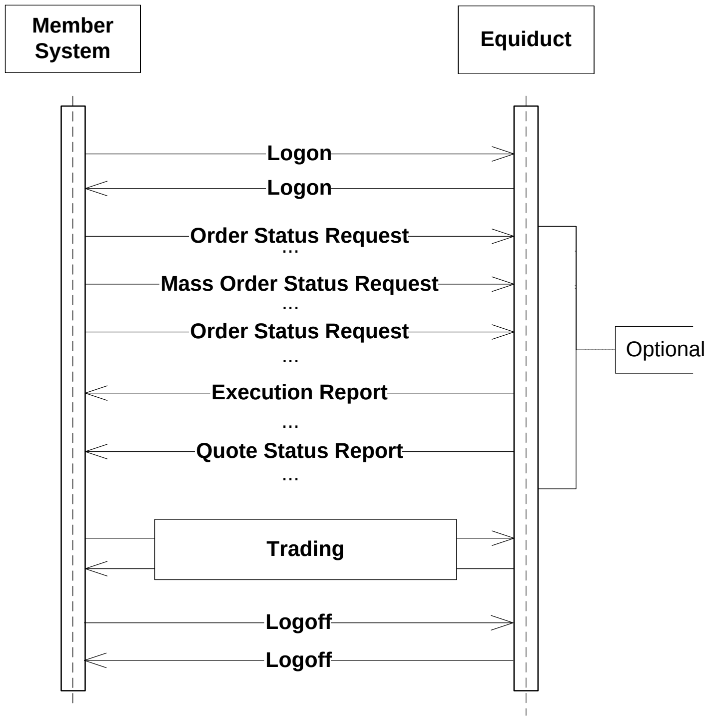
3 MESSAGE FLOWS

This section describes typical message flows between the Member system and the Equiduct Gateway, providing an insight into the overall behaviour of the system.

The following subsections describe the flow of messages related to establishing and ending a session. The session for exchange of transactional messages consists of four phases:

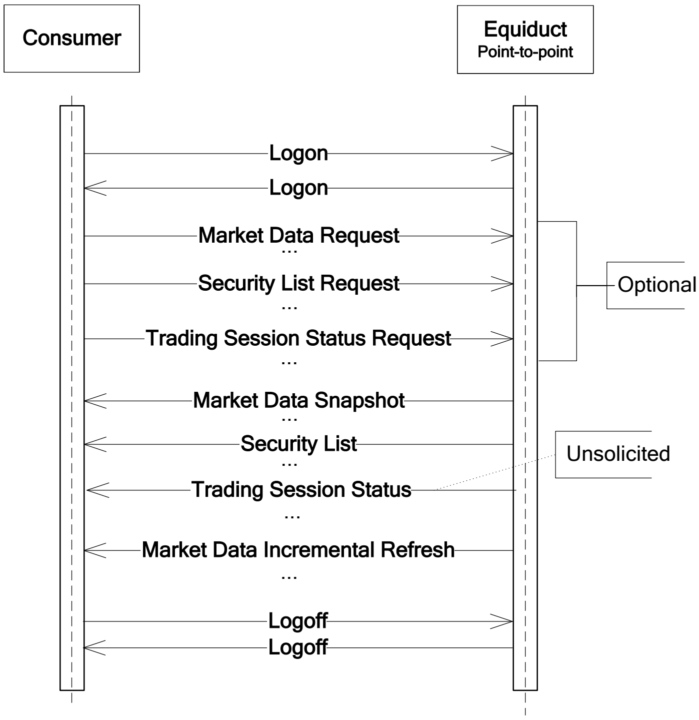
1) Logon	The Member system issues a **Logon** request to Equiduct. Equiduct responds with a **Logon** message for successful connections.
2) Synchronise systems	Standard FIX session resynchronisation and gap fill. Followed by an **optional** set of **Order Status Request**, **Quote Status Request** and **Mass Order Status Request** messages to obtain the latest state of any of the entities in the Hybrid order book.
3) Trading	Trading phase, business messages are exchanged. **Status Request** messages can be issued at anytime.
4) Logoff	The Member system issues a **Logoff** request to Equiduct. Equiduct responds with a **Logoff** message.

A typical session is illustrated below:



The session for receipt of market data messages consists of the following phases:

1)	Logon	The Consumer issues a **Logon** request to Equiduct. Equiduct responds with a **Logon** message for successful connections.
2)	Market Data Subscription	Standard FIX session sequence number checks will take place, but no retransmissions will be available based on these sequence numbers. Subscriptions to pre trade information (Hybrid order book), Equiduct VBBO at SMS and RMS and post trade (Time and Sales for Hybrid book and PartnerEx) information are made using the **Market Data Request** message. Initial images for this type of data are sent in the **Market Data Snapshot** message. Static reference data about the Instruments traded on Equiduct can be obtained using the **Security List Request** message with responses sent in **Security List** messages.
3)	Synchronisation & Market Data Updates	Updates to market data subscriptions for pre and post trade information and Equiduct VBBOs are sent using **Market Data Incremental Refresh** messages. **Market Data Incremental Refresh** messages for a given ApplID (i.e. Instrument/MDBookType) will not be sent until the **Market Data Snapshot** message for that ApplID (i.e. Instrument/MDBookType) has been sent. All **Market Data Incremental Refresh** messages received from that point should be applied to the snapshot. Unsubscribe/subscribe to the receipt of updates using the **Market Data Request** message can be issued at any time.
4)	Logoff	The Consumer issues a **Logoff** request to Equiduct. Equiduct responds with a **Logoff** message.

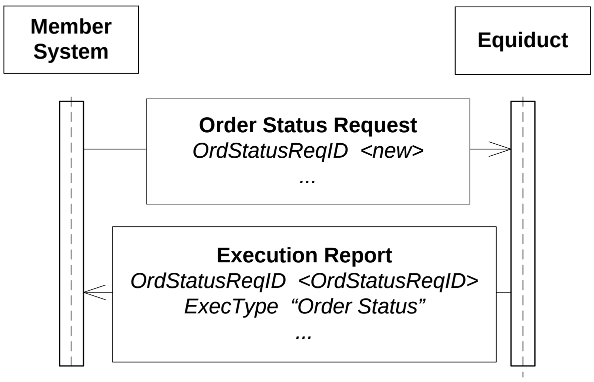


3.1 Synchronise Systems

After successful completion of the logon phase the FIX session will then be synchronised. If the member system needs further clarification after any retransmissions (that may have taken place during session synchronisation) then Equiduct supports **Order Status Request**, **Mass Order Status Request** and **Quote Status Request** messages to obtain the latest state of quotes and orders. These messages can be issued by the member system at any time.

Note: If an update is received for a quote or order prior to the response of a Status Request for that quote or order then the response should be ignored once it is received. If there is any doubt about the latest status to be applied then the TransactTime (60) field should be used to identify the newest status.

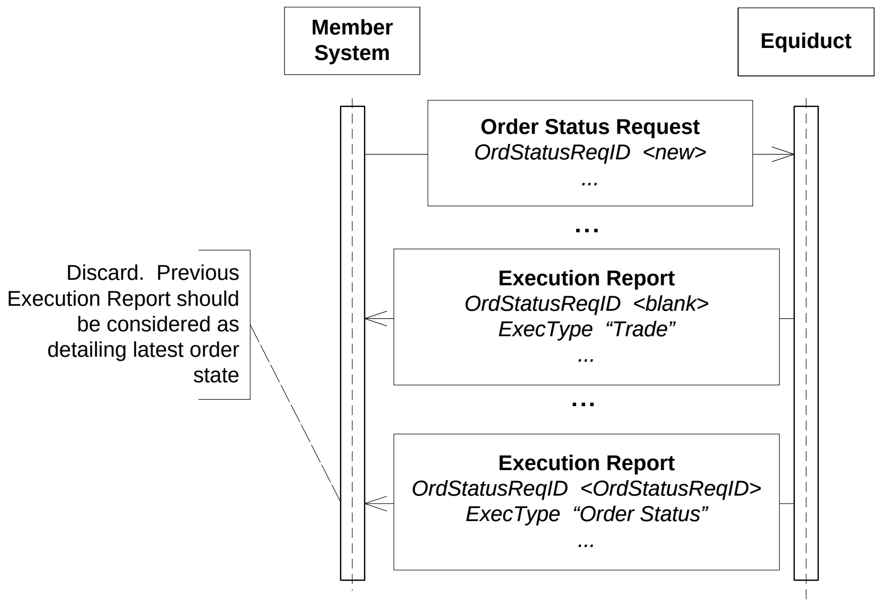
3.1.1 Order Status



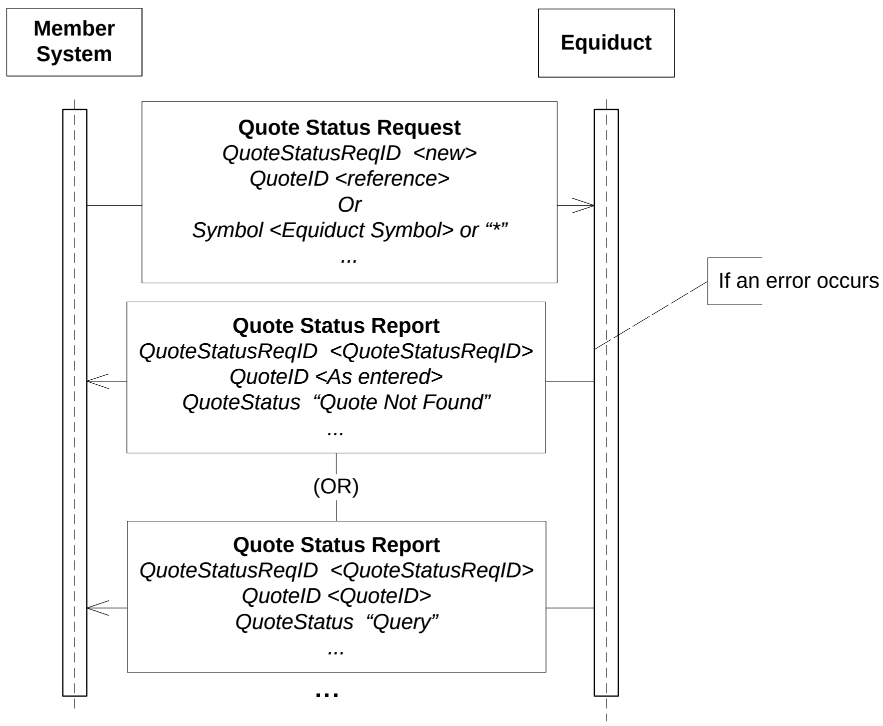
Order Mass Status Request flow is the same apart from multiple **Execution Report** messages may be returned in response to the request.

In the event that an unsolicited **Execution Report** for the Order that was requested is received before the **Execution Report** responding to the status request, then that unsolicited **Execution Report** should be deemed as detailing the latest state of the Order. Alternatively, in the event that it is not possible to apply such logic then TransactTime (60) can be used to identify the latest state of the Order.

Note: To provide a complete workflow the **Execution Report** response to the **Order Status Request** will still be sent when an unsolicited **Execution Report** precedes it.



3.1.2 Quote Status



As for **Order Status Request** messages, if an **Execution Report** (and potentially a **Quote Status Report** in the event of an execution that triggers quote refresh) is received prior to the receipt of a **Quote Status Report** then the **Execution Report** (or **Quote Status** Report) should be considered as the most up-to-date view of the side of the Quote that the **Execution Report** pertains to. Alternatively, in the event that it is not possible to apply such logic then TransactTime (60) can be used to identify the latest state of the Quote.

> Note: To provide a complete workflow the **Quote Status Report** response to the **Quote Status Request** will still be sent when an unsolicited **Quote Status Report** or **Execution Report** precedes it.

3.2 Trading

The following sections describe the message flows used to support the various business objects offered by the exchange (quotes, orders and trade reports).

3.2.1 Quote Management

Note that it is not possible in Equiduct to begin quoting in a new Instrument, or to cancel / delete an existing quote – these actions can only be performed by Equiduct Market Control. Quotes can however be amended at any time. Quote amendments to zero size will be rejected.

Quote Actions

At the beginning of each trading day, all quotes will have a status of “Closed”. Equiduct rules require Market Makers to adjust the status of all of their quotes in a given market segment to “Open” before a specified time for that market segment on each trading day. The member should take a positive action to perform this function (i.e. quotes will not be “forced” open by Equiduct).

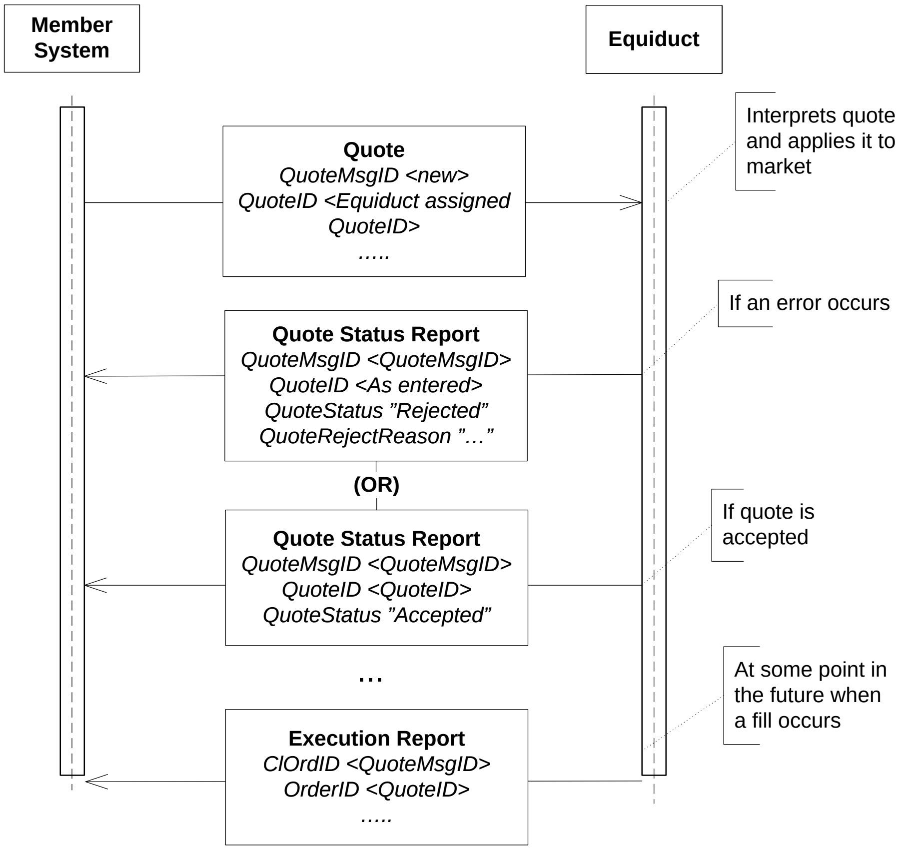
To open a specific quote, the **Quote** message should be used, with the QuoteCondition set to A “Open”. It is possible to adjust quote prices and / or volumes at the same time as opening a quote.

A successful open quote command will be acknowledged with a **Quote Status Report** message with QuoteStatus = 0 “Accepted”.

Automatic Quote Actions

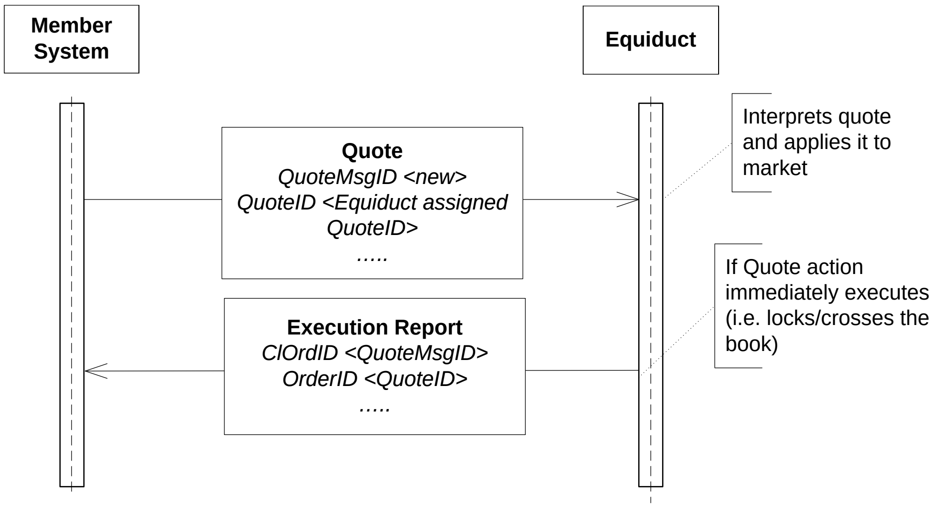
By default, all quotes for a Market Maker will be closed if a connection is abruptly disconnected or closed cleanly by sending a **Logout** message. It is the responsibility of the Market Maker to open their quotes when connectivity has been re-established.

This default behaviour can be changed by Equiduct Market Control.

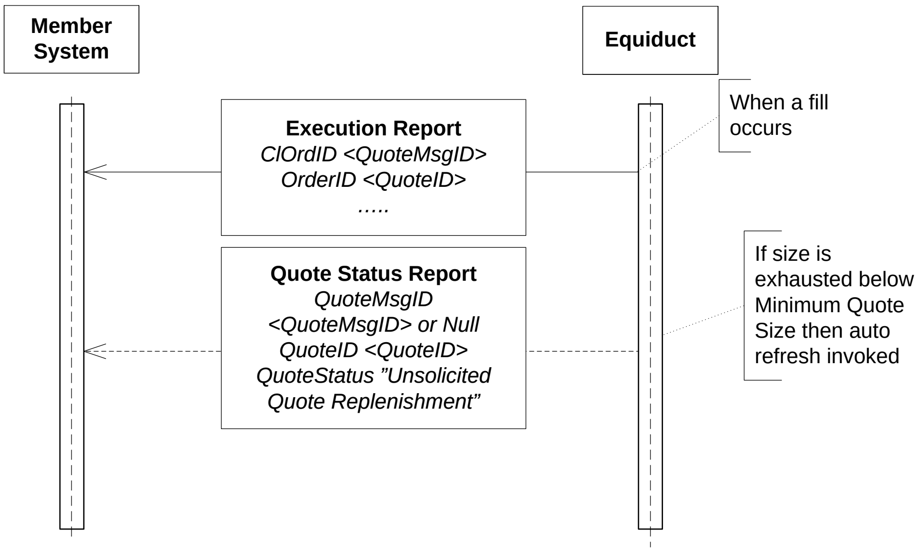


Execution

Opening a quote or amending an already open quote may give rise to an immediate execution in the hybrid book, and therefore there may be a number of **Execution Reports** returned instead.



If the quote is depleted sufficiently to invoke a quote refresh, then a **Quote Status Report** will be sent after the execution(s).



If the book is still locked or crossed after the quote refresh, there may be further **Execution Report** and **Quote Status Report** messages until the book is uncrossed.

A Market Maker quote may be matched at any time during continuous trading hours for the relevant market segment in the hybrid book. Additionally Market Makers offering best execution through the PartnerEx facility could be matched at any point during opening hours of the PartnerEx facility. The trades resulting from both types of match will be conveyed through an unsolicited **Execution Report**.

Note: The Quote on the Hybrid order book is unaffected by executions in PartnerEx.

Rejects

An unsuccessful quote action will be rejected with a **Quote Status Report** message detailing QuoteStatus as 5 "Rejected" or 9 "Quote Not Found" if a Quote cannot be found based upon the given criteria. For rejects, the previous values and status of the quote are retained by Equiduct.

In certain circumstances, such as an attempt to take an unauthorised action, Equiduct may return a **Business Message Reject** message.

3.2.2 Order Management

The following sections describe order-related business functions and unsolicited messages for orders passing into the Hybrid order book.

New Order

New orders are submitted using the **New Order Single** message. All order types can be entered using this message.

Note that a "Sweep" order cannot be entered via the Member System – this can only be generated by the Equiduct back-end.

Successful acceptance of a new order will be acknowledged by possibly multiple **Execution Report** messages. In all cases, however, the **Execution Report** message will contain the unique OrderID assigned by Equiduct which is the preferred identifier to be used for further adjustments to the order.

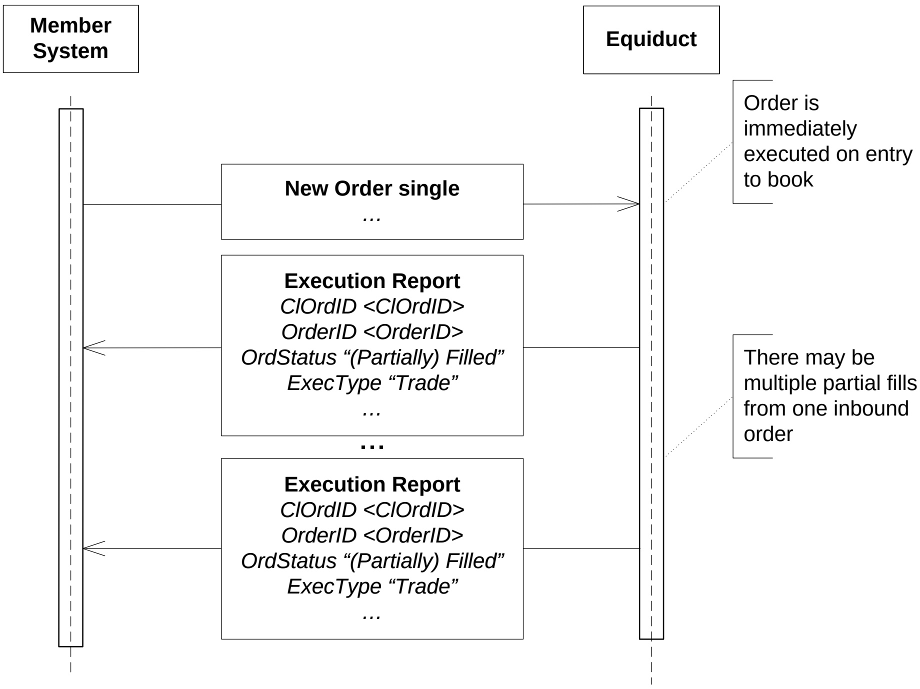
Successful acceptance of an order which is written to the order book without immediate execution will be acknowledged with an Execution Report message indicating that OrdStatus = 0 "New".

This applies to limit, iceberg orders, market orders entered during auction phases, PartnerEx limit and market orders that do not result in immediate execution and all orders entered with a TimeInForce of ATO ("At the opening") or ATC ("At the close").

Orders with a TimeInForce of GFS ("Good For Session") will only be accepted during continuous trading and will be rejected at all other times. Orders with a TimeInForce of GFS will automatically be expired at the end of continuous trading.

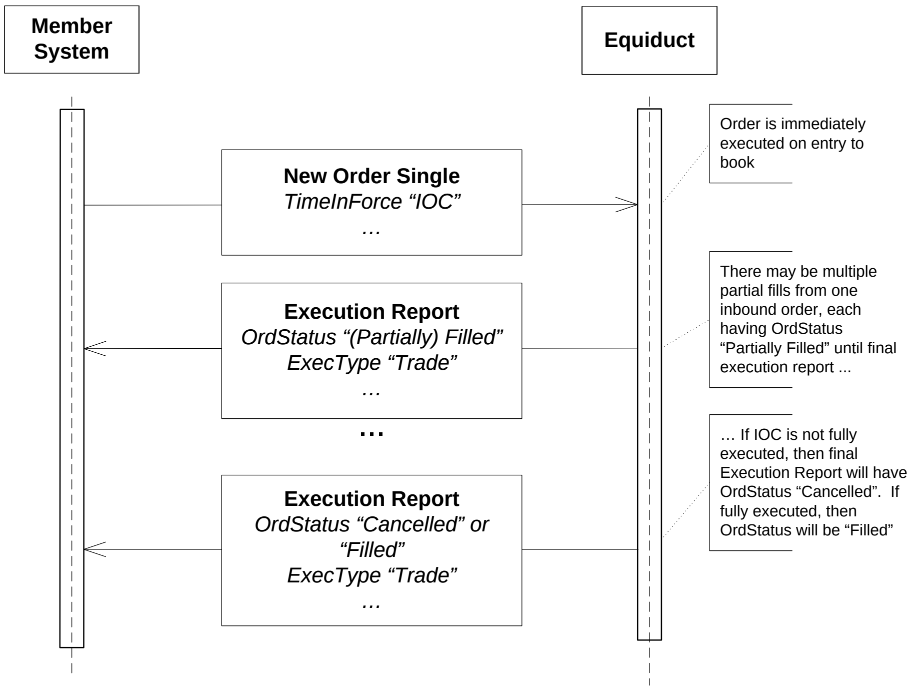
Immediate Execution on Entry

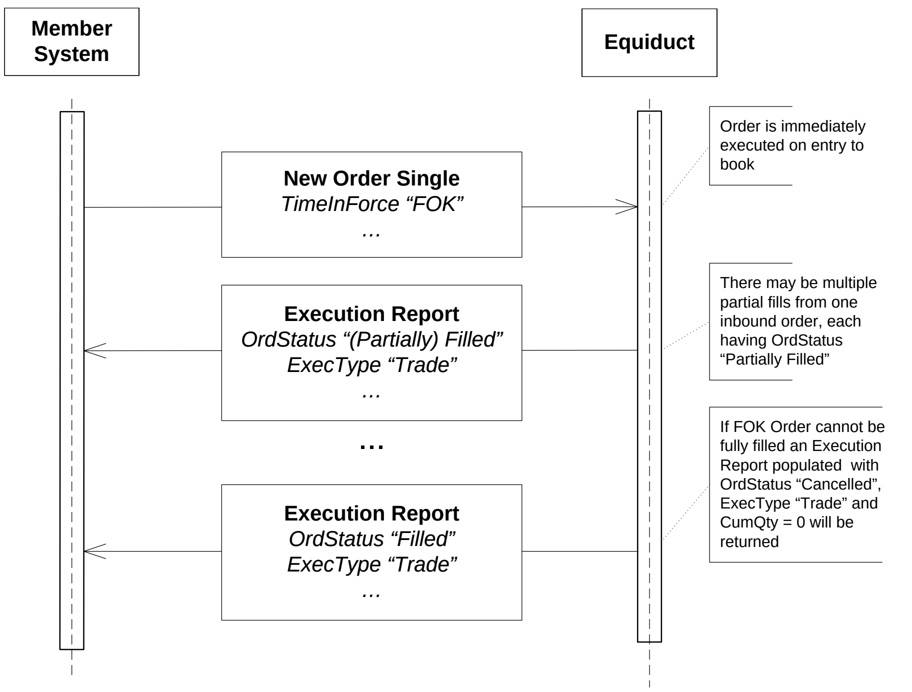
An order may match and execute immediately on entry or modification (cancel/replace). This will be communicated by one or more **Execution Report** messages with OrdStatus = "(Partially) Filled" and ExecType = "Trade" in line with the FPL Global Exchanges & Markets Committee best practices recommendations. See section 0: **Harmonized Workflow**.



IOC/FOK Orders

Successful acceptance of an order with a TimeInForce of IOC or FOK will be acknowledged by one or more **Execution Report** messages indicating that OrdStatus = "Partially Filled" and ExecType = "Trade". The final (it may be the only) **Execution Report** message will indicate that OrdStatus = "Cancelled" or "Filled" and ExecType = "Trade". This is in line with the FPL Global Exchanges & Markets Committee best practices recommendations.





Cancel Order

The **Order Cancel Request** message is used to submit a cancellation of an order to Equiduct. This message must contain the unique OrderID or OrigClOrdID of the order to be cancelled.

If OrderID is specified on an Order Cancel Request, this field alone will be used to lookup the matching order for cancellation. If OrderID is not specified then OrigClOrdID must be set and will be used for order lookup

If the Order is successfully cancelled, then Equiduct will respond with an **Execution Report** message detailing OrderStatus = "Cancelled".

However, if the cancellation message is rejected by Equiduct because of business validation failure, then the member will be returned an **Order Cancel Reject** message containing a reason code for the reject.

Automatic Cancellation of Orders

By default, all orders for a user will be cancelled if that user's connection is abruptly disconnected or closed cleanly by sending a **Logout** message. It is the responsibility of the user to resubmit their orders when connectivity has been re-established. This default behaviour can be changed by Equiduct Market Control.

Order Expire

Orders may be expired by Equiduct at various times during the day, according to the TimeInForce preferences attached to the order. At such times an Execution Report message will be sent to the Member System with OrdStatus = "Expired".

Rejects

Unsuccessful orders of all types (sent successfully to Equiduct, yet rejected because of business validations) will be acknowledged with an **Execution Report** message with an OrdStatus = "Rejected".

In certain circumstances, such as an attempt to take an unauthorised action or omitted conditionally required fields, Equiduct may return a **Business Message Reject** message.

3.2.3 PartnerEx Behaviour

PartnerEx Customer

PartnerEx orders are entered using the **New Order Single** message, with TargetSubID filled out as detailed in section 0, or left blank if the default destination for the firm is PartnerEx. The order can specify the target Market Maker (PartyID) to which the order is to be directed. If no target Market Maker is specified Equiduct will match against all Market Makers with whom the PartnerEx Customer has an established active PartnerEx relationship in the priority as predetermined by the Customer.

PartnerEx orders with a TimeInForce of IOC or FOK do not rest on a book. If there is no established active relationship for a given Instrument or with the specified Market Maker then the order is rejected. These execution conditions are not allowed during auction phases.

PartnerEx limit orders with a TimeInForce other then IOC or FOK which cannot be completely executed against one or more relationships will have any remaining quantity placed on the Hybrid order book where they will be available for execution until the opposite side of the EBBO touches the limit price. At this point the order will be resubmitted to PartnerEx and any unexecuted quantity will be returned to the Hybrid order book.

PartnerEx market orders with a TimeInForce other than IOC or FOK which cannot be completely executed against one or more relationships will have any remaining quantity placed on the Hybrid order book for a short period before being retried in PartnerEx with any unexecuted quantity returned to the Customer.

Note that **Execution Report**s will <u>not</u> be generated during transitions between PartnerEx and the

Hybrid order book.

PartnerEx orders with a TimeInForce other than IOC or FOK can participate in the opening auction and can be submitted up until the order book freeze. All orders submitted **during** the order book freeze will be rejected with ExecType (150) = “Rejected” and OrdStatus (39) = “Rejected”. At the **end** of the opening cross **ExecutionReport**(s) will be sent for all executions that occurred during the cross, PartnerEx limit orders with a TimeInForce other than ATO will have any unexecuted quantity placed into the Hybrid order book (as described above) and PartnerEx orders with a TimeInForce of ATO will be expired.

PartnerEx Provider

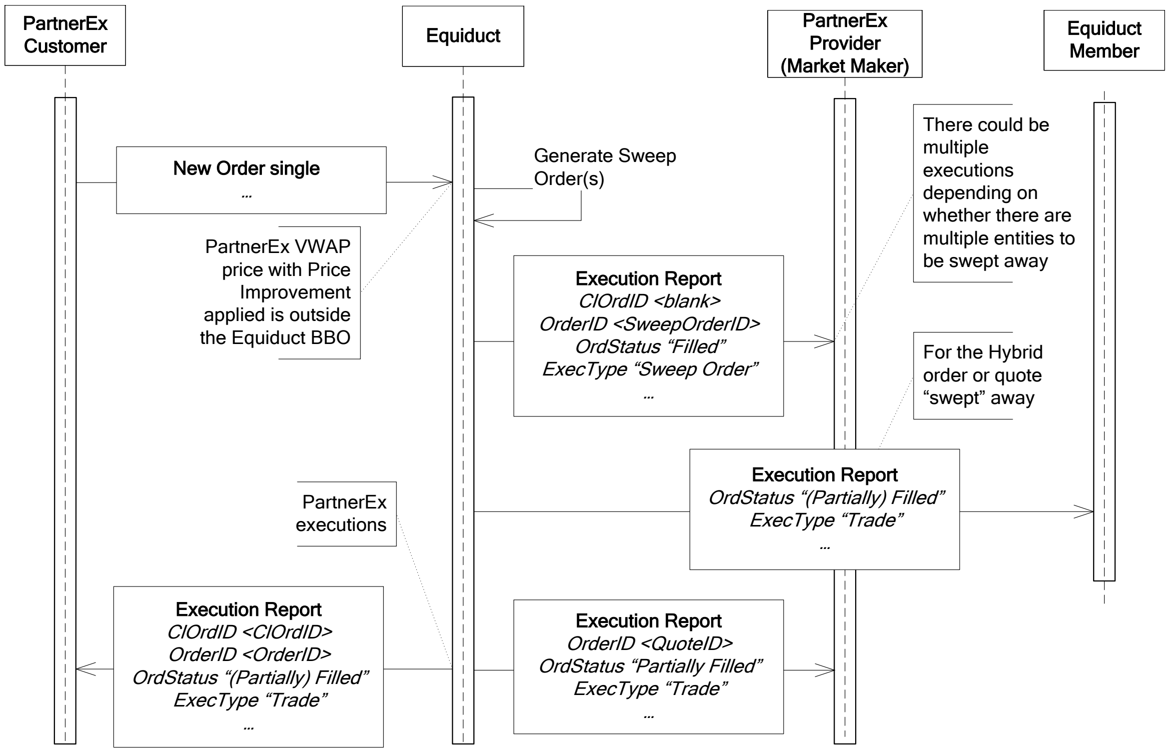
The Market Maker on the other side of a PartnerEx trade will receive an unsolicited **Execution Report** message containing the details of the execution, with the OrderID field populated with the QuoteID of their corresponding quote in that stock in the Hybrid order book.

Before the PartnerEx order is executed, however, Equiduct may need to “sweep” or interact with better-priced orders in the Hybrid order book to ensure that no PartnerEx price occurs outside the Equiduct Best Bid-Offer (BBO)[1].

In such a case Equiduct will generate a single “Sweep” order, and submit this to the hybrid book to execute all better-priced quotes or orders in the book. The PartnerEx Market Maker may, therefore receive a series of unsolicited executions for an order which was not submitted by the Market Maker system. The resulting **Execution Report**(s) will contain ExecType (150) = “Triggered or Activated by System”, OrdStatus (39) = “Filled” and TimeInForce(59) = “Fill or Kill”. ClOrdID (11) will contain the last QuoteMsgID (if provided) taken from the corresponding quote for that stock in the Hybrid order book. Sweep orders will be entered in a principal capacity for the Market Maker, and will be for the default clearing and settlement account in that particular financial instrument in the Hybrid book.

The following figure illustrates the flow for a PartnerEx market order with TimeInForce of IOC.

[1] For further details on the business logic for this and scenarios where this can occur, see the Market Model Description.



Note: PartnerEx executions do not adjust the price / volume of a Market Maker's quote in the market.

Unsuccessful entry of the above PartnerEx order will result in the entering member receiving an Execution Report with an OrdStatus = "Rejected".

PartnerEx Relationship Management

The current status of all or any particular PartnerEx relationships can be obtained at any time using the **PartnerEx Relationship Request** message. One or many **PartnerEx Relationship Status** messages will be returned.

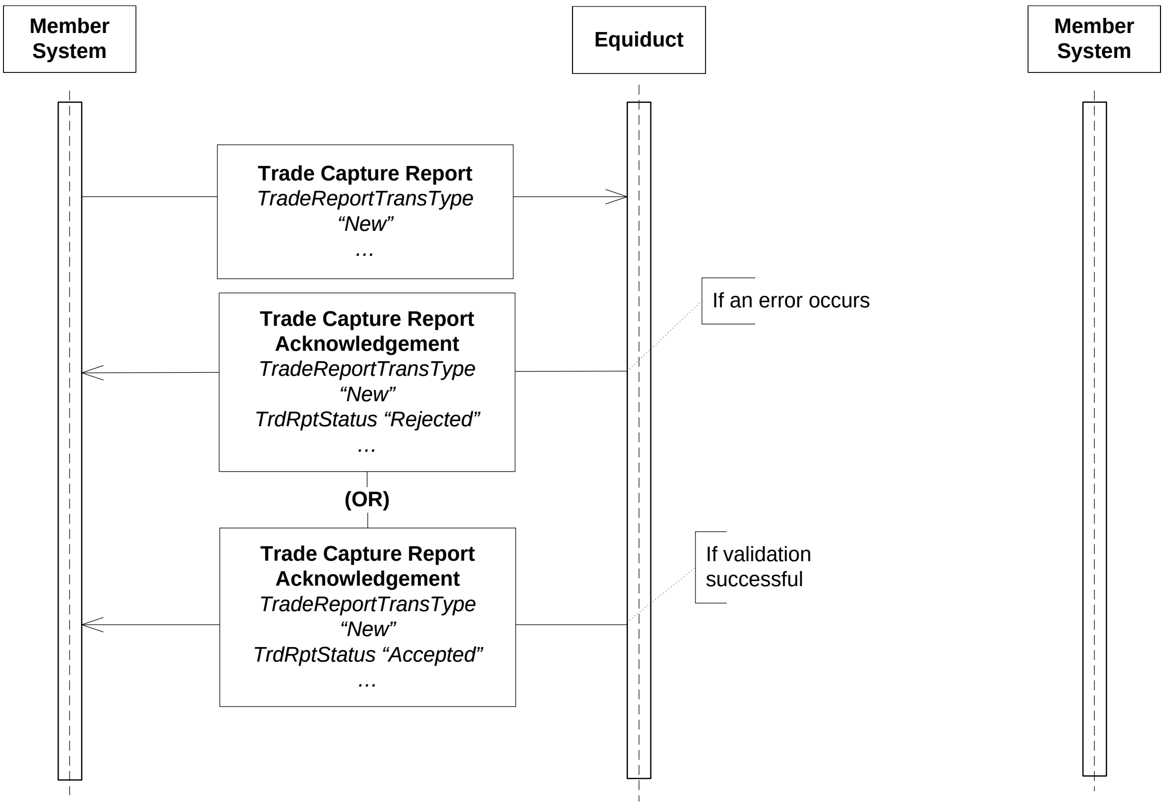
The **Update PartnerEx Relationship** message is used for altering PartnerEx relationship parameters. Both parties to the bilateral agreement will receive a **PartnerEx Relationship Status** message to notify them of any changes made by either party or Equiduct Market Control. The PartnerEx Provider will not see the PartnerExPriority assigned to the relationship by the PartnerEx Customer.

3.2.4 Trade Reporting

Successful acceptance of a **Trade Capture Report** message will be acknowledged with a **Trade Capture Report Acknowledgement** message.

New Trade Reports

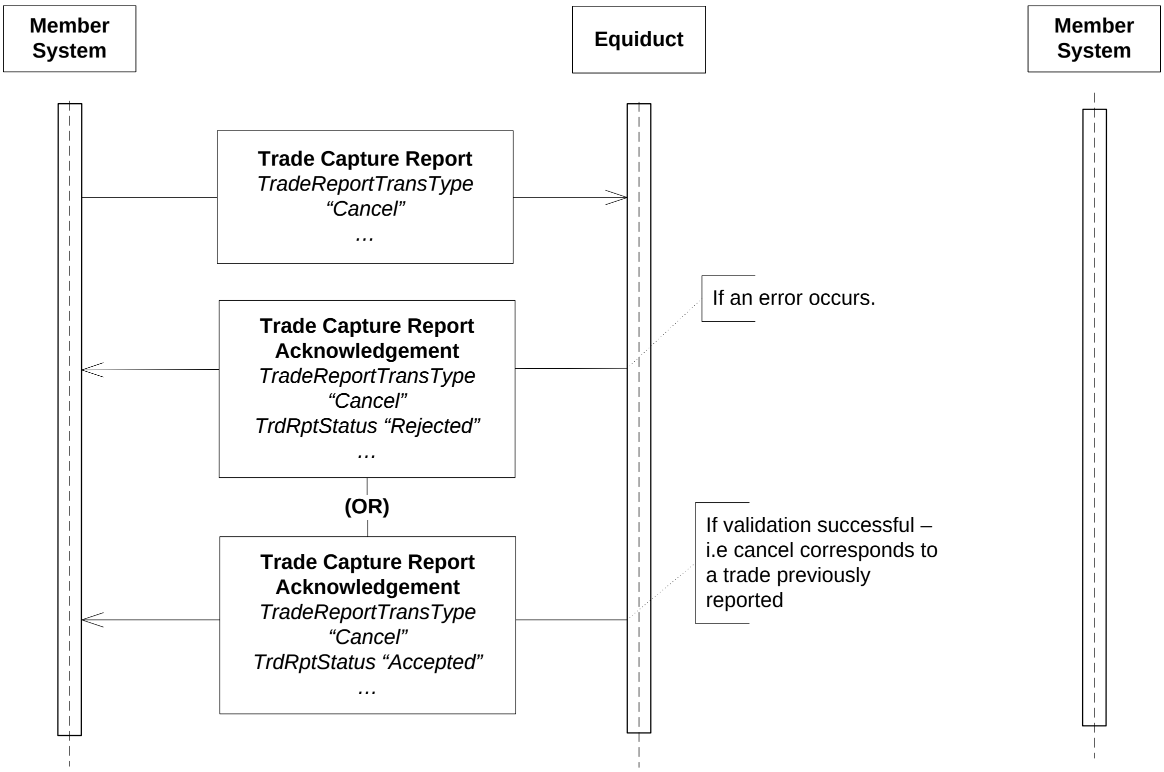
Trades reported to Equiduct may be between an Equiduct member and non-member firm, or between two member firms. Upon successful validation, the Trade will be disseminated for post-trade transparency in Equiduct Market Data.



Trade Report Cancellations

It is possible to cancel reported trades. The same flow utilised to submit trades must be used to cancel them.

Note that only Equiduct Market Control has the ability to cancel trades matched automatically via the Hybrid order book and PartnerEx.



Rejects

Should the **Trade Capture Report** message be rejected because of a business validation failure, Equiduct will send a **Trade Capture Report Acknowledgement** message to the Member system with a TrdRptStatus "Rejected". In certain circumstances a **Business Message Reject** message may be used.

3.3 Market Data

The Hybrid order book offers two views for pre-trade transparency;

- Top-Of-Book and
- Price-Depth.

The Equiduct VBBO prices are available for pre-trade transparency in the PartnerEx segment.

Time & Sales information is available across the Hybrid book, PartnerEx and Trade Reporting to supply post-trade transparency.

3.3.1 Top-Of-Book

Top-Of-Book (also referred to as Level I) information for Instruments traded in the Hybrid book can be requested by specifying MDBookType = “Top–Of-Book” in the **Market Data Request** message. Top-Of-Book provides

- Best bid-offer for an Instrument, taking into account both quotes and orders.
- Statistics (open, high, low, close and turnover)
- Security trading status information will also be provided in Top-Of-Book subscriptions.

3.3.2 Price-Depth

Price-Depth (also referred to as Level II) information for Instruments traded in the Hybrid book can be requested by specifying MDBookType = “Price-Depth” in the **Market Data Request** message. All interest (Quotes and Orders) will be aggregated at price levels.

3.3.3 Time & Sales

Time & Sales information for Instruments traded or trade reported on Equiduct systems can be obtained by specifying MDBookType = “Trade” in the **Market Data Request** message.

3.3.4 Equiduct VBBO

Equiduct VBBO information can be requested by specifying MDBookType = “VBBO” and the correct ISIN/Currency pair or symbol. Given that the VBBO can be calculated for multiple quantities for each Instrument, the Snapshot and Incremental Refresh messages will make use of the MDEntryID field to distinguish between the prices calculated for the different quantities.

4 FIX MESSAGE FORMATS

This section defines the messages supported by the FIX Gateway. These messages are based on the FIX 4.4 specification, some custom fields and values are used and where possible are in line with FIX 5.0 SP1 where FIX 4.4 does not provide the required coverage.

Only messages and fields supported by the Equiduct Messaging Interface are listed in this guide; all other FIX messages and fields are ignored by the application. Message fields are identified as required, optional or conditionally required (that is, fields required based on the presence or value of other fields).

The following sections list tables describing message content. Each of these tables has the columns shown below.

Column Name	Description
• Tag	FIX field identification number.
• Field Name	FIX field name.
• Req'd	Specifies whether this is a mandatory, conditionally required or optional field.
• Comments	Description of the field's usage.

4.1 Headers and Trailers

Every FIX message is composed of three sections: the header, the body, and the trailer. The header and trailer, the first and last sections of each message, are common to all FIX messages. They provide session support for the FIX protocol, helping to ensure that messages are delivered reliably.

The header and trailer used by the FIX Gateway are compatible with the standard FIX headers and trailers. For further details, refer to the FIX 4.4 specification.

4.1.1 Standard Header

The following table defines the fields in the message header supported by the Messaging Interface.

Standard Message Header

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.4 (Always unencrypted, must be first field in message)
9	BodyLength	Y	(Always unencrypted, must be second field in message)
35	MsgType	Y	(Always unencrypted, must be third field in message)
49	SenderCompID	Y	On inbound messages, this must be populated as assigned by (or agreed with) Equiduct Market Supervision. On outbound transactional messages, specifies "EQTX"; on outbound market data messages, specifies "EQMD".
56	TargetCompID	Y	On inbound transactional messages, specify "EQTX" on inbound market data messages specify "EQMD". On outbound messages will reflect inbound SenderCompID.
34	MsgSeqNum	Y	

50	SenderSubID	N	On inbound messages, this must be populated as agreed with Equiduct Market Supervision. Only processed for New Order Single messages targeted at PartnerEx, otherwise ignored. Not used on outbound messages or for Market Data connections.
57	TargetSubID	N	On inbound transactional messages, specifies the Equiduct execution mechanism that the message is targeted at. The default execution mechanism is configurable per-participant by Equiduct Market Supervision Valid values: HYBRID = Message is targeted at hybrid book PARTNEREX = Message is targeted at PartnerEx On outbound messages, echoes back the inbound SenderSubID where available and may also be populated with SenderSubID from a trade counterparty. . This tag is not used or interpreted for Market Data connections.
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.
52	SendingTime	Y	
122	OrigSendingTime	N	Required for message resent as a result of a ResendRequest. If data is not available set to same value as SendingTime

4.1.2 Standard Trailer

The following table defines the field in the message trailer supported by the Messaging Interface.

Standard Message Trailer

Tag	Field Name	Req'd	Comments
10	Checksum	Y	

4.2 Session Messages

All session messages adhere to the standard FIX 4.4 specification in both format and usage, apart from the logon message, described below, and those noted in section 0: **Market Data Connections**. For documentation on these messages, please refer to the FIX 4.4 specification.

4.2.1 Logon

The **Logon** message provides the initial contact between the Member system and the FIX Gateway. The HeartBtInt (108) field is used to declare the timeout interval for generating heartbeats, and must be within a predefined window agreed with Equiduct Market Control.

Upon receipt of a **Logon** message Equiduct will validate the user name and password against those stored for the session and issue a **Logon** message as acknowledgement, or a **Logout** message with failure reason.

The connecting Member system should *not* transfer any FIX messages until a **Logon** message is received from the Gateway.

Logon Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = A

98	EncryptMethod	Y	No encryption supported. Must be "0" (zero).
108	HeartBtInt	Y	Session heartbeat interval in seconds.
141	ResetSeqNumFlag	C	Required for market data connections. Indicates both sides of a FIX session should reset sequence numbers.
553	Username	Y	Username, as specified by Equiduct Market Control.
554	Password	Y	Password, as specified by Equiduct Market Control.
	Standard Trailer	Y	

4.3 Transactional Messages

This section introduces Equiducts trading-related messages.

4.3.1 Unique Identifiers

This section further explains the usage of some of the identifiers used in the transactional messages.

The table below summarises the maximum lengths of the key ID fields used in this specification:

Tag	Field Name	Maximum Length
11	ClOrdID	20 printable ASCII (1-byte) characters
37	OrderID	20 printable ASCII (1-byte) characters
117	QuoteID	20 printable ASCII (1-byte) characters
571	TradeReportID	20 printable ASCII (1-byte) characters
278	MDEntryID	20 printable ASCII (1-byte) characters
1166	QuoteMsgID	20 printable ASCII (1-byte) characters
649	QuoteStatusReqID	20 printable ASCII (1-byte) characters
1181	ApplSeqNum	20 Numeric Characters
1350	ApplLastSeqNum	20 Numeric Characters
17	ExecID	20 printable ASCII (1-byte) characters

ClOrdID

Unique Client Order IDs are supplied by the member on every order. This ID can subsequently be used to cancel, replace or query the order and is chained in the normal way, compliant with FIX standards.

Although ClOrdID is required on every order and replace, Equiduct prefer OrderID when referring to an existing order. Once a member has been notified of the OrderID (see below) they may use this in place of the ClOrdID when querying an order, or in place of OrigClOrdID when cancelling and replacing. Use of the OrderID may result in faster processing of the request. This is in accordance with recommended best practice.

ClOrdID’s are constructed of up to 20 printable ASCII (1-byte) characters; anything over this limit will be truncated before being processed.

OrderID

When a new order is entered it is given a unique OrderID by Equiduct that will last for the life of the order although the order details may change over time. The OrderID will be contained in the **Execution Report** message. The OrderID field can be used to modify, cancel or request the status of an Order.

QuoteID

When a Market Maker is first registered to quote in an Instrument a new quote is created - an action performed by Equiduct Market Control. This relationship of Market Maker to Instrument is given a unique QuoteID. This will last for the life of the quote although the quote values will change over time. The QuoteID will be obtainable through the **Quote Status Report** message. The QuoteID can be used to modify, close or query the status of a quote.

SecondaryOrderID, BuyQuoteID and SellQuoteID

In order to link orders and quotes to updates in the ITCH market data feed Equiduct have introduced three new fields; SecondaryOrderID (used in **Execution Report**s) and BuyQuoteID and SellQuoteID (used in **Quote Status Report**s). These fields are populated with a twelve (12) character identifier which is unique for an order or each side of a quote (bid or offer) over a single trading day. This id will be generated when the order is entered. In the case of GTC and GTD orders and quotes this id will be generated at the start of each trading day.

An **Execution Report** (orders) or **Quote Status Report** (quotes) will be available upon connecting to the transactional gateway at the start of each day. The SecondaryOrderID field of the **Execution Report** will contain the new identifier for an order and the BuyOrderID and SellOrderID of the **Quote Status Report** will contain the new bid and offer identifiers for the quote respectively.

When an execution occurs an **Execution Report** will be sent with the SecondaryOrderID field populated. This field will contain the id associated with the order or the side of the quote that was executed against.

Note: These fields cannot be used to modify, cancel or query the status of a quote or order - they may only be used to reference updates in the ITCH market data feed.

4.3.2 Inbound Messages (Sent by Member System)

Quote

The **Quote** message enables a Market Maker to amend the existing details of a quote on the market, and to open quotes each day.

In future releases the QuoteResponseLevel may be determined by the members bilaterally agreed workflow requirements. In this initial implementation Equiduct will acknowledge all **Quote** messages with either a **Quote Status Report** or **Execution Report** message.

All quotes are made in Principal capacity.

Quote

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = S
1166	QuoteMsgID	N	Quote issuer assigned identifier for this quote message, must be unique for every submission of a quote.
117	QuoteID	N	Static quote identifier assigned by Equiduct. This is supplied by Equiduct Market Control or can be obtained by issuing a non-specific (wild card) QuoteStatusRequest. Either Symbol or SecurityID, SecurityIDSource and Currency must also be specified if QuoteID is specified.
453	NoPartyIDs	Y	Valid value 1.
→ **448**	PartyID	Y	Used to identify source of PartyID (i.e. the business owner of the transaction). Required if PartyIDSource is specified. Required if NoPartyIDs > 0.
→ **447**	PartyIDSource	Y	Used to identify class source of PartyID value. Required if PartyID is specified. Required if NoPartyIDs > 0. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→ **452**	PartyRole	Y	Identifies the type of PartyID i.e. Executing Firm (Market Maker). Required if NoPartyIDs > 0. Valid value: 1 = Executing Firm
276	QuoteCondition	N	Indicates whether to transition the quote into open status or to close the quote (remove it from the market). If unset the default behaviour is to amend the quote, which should be used to set up the quote prior to opening and to maintain the quote during the trading day. Valid values: A = Open B = Closed
55	Symbol	Y	Equiduct stock mnemonic. Can also be specified as “[N/A]”
48	SecurityID	C	Required if Symbol is “[N/A]”, only ISIN supported.
22	SecurityIDSource	C	Required if Symbol is “[N/A]”, only ISIN supported. Valid value: 4 = ISIN number
15	Currency	C	Required if SecurityIDSource specifies ISIN.
132	BidPx	C	Either BidPx, OfferPx, BidSize, OfferSize or all must be specified, unless: • This message is opening the quote for the day (i.e. is the first message of the day with QuoteCondition=A). • The quote is being closed with QuoteCondition = B in which case these fields are optional.
133	OfferPx	C	Either BidPx, OfferPx, BidSize, OfferSize or all must be specified, unless: • This message is opening the quote for the day (i.e. is the first message of the day with QuoteCondition=A). • The quote is being closed with QuoteCondition = B in which case these fields are optional.
134	BidSize	N	Specifies the bid size. If not specified, the BidSize on the market remains unchanged.
135	OfferSize	N	Specified the offer size. If not specified, the OfferSize on the market remains unchanged.

60	TransactTime	N	
9816	TickMultiplier	N	Number of ticks applied to bid and offer price to widen the bid or offer price, as appropriate, when the auto quote refresh function is triggered. Defaults to 100 if not specified. Where permitted, may be set to zero to disable auto quote refresh.
	Standard Trailer	Y	

Quote Status Request

The **Quote Status Request** message enables a Market Maker to query the details of a quote on the market, either by QuoteID or by security. It will result in a **Quote Status Report** message with QuoteStatus="Query" being returned to the member.

This message also allows members to request status of all their quotes (by specifying Symbol as '*'), resulting in many **Quote Status Report** messages. This could be used as a mechanism to dynamically retrieve Equiduct assigned QuoteIDs.

> Note: It is possible that, after issuing a **Quote Status Request**, an **Execution Report** or unsolicited **Quote Status Report** (one with QuoteStatus other than "Query") may be received for a given security *before* the **Quote Status Report** response is received. If this happens, the **Execution Report** or unsolicited **Quote Status Report** should be considered to reflect the most current state (i.e. the delayed **Quote Status Report** (QuoteStatus="Query") should be discarded). If there is any doubt about the latest status to be applied then the TransactTime (60) field should be used to identify the newest status. See section 3.1: Synchronise Systems, for further explanation and discussion of this point.

Quote Status Request

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = a (lowercase)
649	QuoteStatusReqID		N	Unique message identifier.
117	QuoteID		N	Quote status can be requested either by QuoteID, or by instrument (allowing retrieval of Equiduct assigned QuoteIDs).
55	Symbol		Y	Equiduct stock mnemonic. Can also be specified as "[N/A]" if QuoteID is specified or if SecurityID is specified. Specify "*" to receive status for all quotes.
48	SecurityID		C	Required if QuoteID is not specified and Symbol is "[N/A]". ISIN.
22	SecurityIDSource		C	Required if SecurityID is specified, only ISIN supported. Valid value: 4 = ISIN number
15	Currency		C	Required if SecurityIDSource specifies ISIN
453	NoPartyIDs		Y	Valid value 1.
→	448	PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	447	PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)

→	452	PartyRole	Y	Identifies the type of PartyID i.e. Executing Firm (Market Maker). Required if NoPartyIDs > 0. Valid value: 1 = Executing Firm
	Standard Trailer		Y	

New Order Single

The **New Order Single** message is used to submit various types of orders to Equiduct for execution. The content of this message shall vary according to the execution method to which the order is directed.

New Order Single Message

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = D
11	ClOrdID		Y	Unique identifier of the order as assigned by institution or by the intermediary (CIV term, not a hub/service bureau) with closest association with the investor.
453	NoPartyIDs		Y	Valid values 1 or 2 (PartnerEx usage).
→	448	PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	447	PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→	452	PartyRole	Y	Identifies the type of PartyID. Valid values: 1 = Executing Firm (Order owner) 17 = Contra Firm (PartnerEx Provider)
1	Account		N	Clearing or Settlement Account number for Hybrid market. Validations performed by Equiduct will vary depending on the Clearing and Settlement structure in place for the Instrument. NOTE: PartnerEx orders will use clearing or settlement as defined in the bi-lateral PartnerEx relationship(s); if no clearing or settlement location is defined in the relationship the default location for the Instrument in the Hybrid book will be used.
660	AcctIDSource		N	Valid values: 99 = Other (custom or proprietary)
18	ExecInst		N	A single value used to identify the type of peg for a Pegged order (OrdType=P). Valid values: P = Market peg (Default). Buy Order pegs the Offer of the EBBO (excluding the Hybrid book). Sell Order pegs the Bid of the EBBO. R = Primary peg. Buy Order pegs the Bid of the EBBO (excluding the Hybrid book). Sell Order pegs the Offer of the EBBO.

111	MaxFloor	N	Maximum quantity (e.g. number of shares) within an order to be shown on the exchange floor at any given time. Order volume to be displayed to the market; "peak" volume. When specified, limit order is converted into an iceberg order.
55	Symbol	Y	Equiduct stock mnemonic. Can be '[N/A]'.
48	SecurityID	C	Required if Symbol is "[N/A]", only ISIN supported.
22	SecurityIDSource	C	Required if Symbol is "[N/A]", only ISIN supported. Valid value: 4 = ISIN number
54	Side	Y	Side of order Valid values: 1 = Buy 2 = Sell
60	TransactTime	Y	Time this order request was initiated/released by client (expressed as GMT)
38	OrderQty	Y	Order quantity in number of shares
40	OrdType	Y	Order type. Valid values: 1 = Market 2 = Limit 3 = Stop loss 4 = Stop limit P = Pegged K = At Best
44	Price	C	Price per share. Required for limit and stop limit orders. A price must not be specified for Pegged or AtBest orders.. For stop limit orders, price must be greater than or equal to StopPx for buy orders and less than or equal to StopPx for sell orders.
99	StopPx	C	Required if OrdType is 'Stop loss' or 'Stop limit' The price at which the order will be triggered. Must be greater than the last reference price for buy orders and less than the last reference price for sell orders.
15	Currency	C	Required if SecurityIDSource specifies ISIN.
59	TimeInForce	N	Specifies how long the order remains in effect. Absence of this field is interpreted as DAY (or IOC for PartnerEx). Valid values: 0 = Good for Day 1 = Good Till Cancel (GTC) 2 = At the Opening (OPG or ATO) † 3 = Immediate or Cancel (IOC)* † 4 = Fill or Kill (FOK)* † 5 = Good For Session (GFS) ** 6 = Good Till Date (also for specifying GTT) 7 = At the Close (ATC) † * Not valid for At Best orders. † Not valid for Stop loss and Stop limit orders. ** Only valid during continuous trading.

126	ExpireTime	C	Conditionally required if TimeInForce = GTD. If ExpireTime is set to a time during the current trading day then the order will expire at that time. If the ExpireTime is on a day other than the current trading day then it will expire at the time specified on that day. If the ExpireTime is out of trading hours then the order will expire **before** the start of the next trading day. Note that *midnight* ("00:00:00") is treated as the first second of a given day, so in order to have an Order remain valid for the whole of a given trading day the time component of ExpireTime should be set to a time after market close and before midnight, for example "23:59:00".
528	OrderCapacity	Y	Required for Equiduct. Designates the capacity of the firm placing the order. Valid values: A = Agency P = Principal
211	PegOffsetValue	N	A signed amount up to 4 decimal places in the traded currency that will be added to the peg price and rounded to the tick size. A buy order will be rounded down and a sell order will be rounded up. The default value is zero (0).
9938	ClearingHandlingType	N	Usage depends on the clearing and Settlement structure in place for the Instrument. Indicates the pre-posting and give-up action to be taken by the clearing system when a trade has occurred. Valid values: 0 = Manual Mode 1 = Automatic Extraction 2 = Automatic Allocation
	Standard Trailer	Y	

Order Cancel/Replace Request

Only Price, Quantity, TimeInForce and OrderType can be amended. Fields stating, "if specified, must match original order" are optional, even if they were included on the original order. Other fields stating "must match original order" are required to be populated if they were included on the original order.

Order Modification

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = G
37	OrderID		C	Unique identifier as assigned by Equiduct. Required if OrigClOrdID not specified. Note, OrderID is preferred to OrigClOrdID and can result in faster processing.
453	NoPartyIDs		Y	Valid value 1.
→	**448**	PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	**447**	PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)

→ 452	PartyRole		Y	Identifies the type of PartyID. Valid value: 1 = Executing Firm (Order owner)
18	ExecInst		N	A single value used to identify the type of peg for a Pegged order (OrdType=P). Valid values: P = Market peg (Default). Buy Order pegs the Offer of the EBBO (excluding the Hybrid book). Sell Order pegs the Bid of the EBBO. R = Primary peg. Buy Order pegs the Bid of the EBBO (excluding the Hybrid book). Sell Order pegs the Offer of the EBBO.
41	OrigClOrdID		C	ClOrdID of the previous non rejected order (NOT the initial order of the day). Required if OrderID is not specified.
11	ClOrdID		Y	Unique identifier of replacement order as assigned by institution or by the intermediary with closest association with the investor. Note that this identifier will be used in ClOrdID field of the Cancel Reject message if the replacement request is rejected.
111	MaxFloor		N	Maximum quantity (e.g. number of shares) within an order to be shown on the exchange floor at any given time. Order volume to be displayed to the market; "peak" volume. When specified, limit order is converted into an iceberg order. If specified, must match original order.
55	Symbol		Y	Equiduct stock mnemonic. Must match original order.
48	SecurityID		C	Required if Symbol is "[N/A]". Must match original order.
22	SecurityIDSource		C	Required if SecurityID is specified. Must match original order.
54	Side		Y	Side of order. Must match original order.
60	TransactTime		Y	Time this order request was initiated/released by client (expressed as GMT)
38	OrderQty		C	New total intended investor quantity (irrespective of the amount already executed for this chain of orders). Must be specified if "Price" is not present in the amendment.
40	OrdType		Y	Order type. May be amended to any type except Pegged, At Best, Stop loss or Stop limit. Note it is valid to amend a Stop loss to a Stop limit and vice versa.
44	Price		C	Price per share. Only valid for limit order types, and must be specified if OrderQty is not specified.
99	StopPx		N	Ignored if OrdType is not 'Stop loss' or 'Stop limit' The price at which the order will be triggered. Must be greater than the last reference price for buy orders and less than the last reference price for sell orders. StopPx can only be amended if the order has not been triggered.
15	Currency		C	Required if SecurityIDSource specifies ISIN. Must match original order.
59	TimeInForce		N	Amendments can be made from any TimeInForce except IOC and FOK. Additionally, GFS can only be modified to IOC or FOK.
126	ExpireTime		C	Time of order expiration. Conditionally required if TimeInForce is specified as GTD.
528	OrderCapacity		N	If specified, must match original order.
211	PegOffsetValue		N	A signed amount up to 4 decimal places in the traded currency that will be added to the peg price and rounded to the tick size. A buy order will be rounded down and a sell order will be rounded up. The default value is zero (0). Note: Amending of this value is currently not supported.

	Standard Trailer	Y	

Order Cancel Request

The **Order Cancel Request** message is used to request the cancellation of an existing order posted in the hybrid book. This includes orders that have been partially executed, and those which are not yet visible in the market (e.g. ATO orders).

The **Order Cancel Request** message requests the cancellation of the remaining quantity of an existing order – Members may not request the cancellation of part of an order.

The request will only be accepted if the order can successfully be pulled back from Equiduct system, that is, it is not already in the execution process when the instruction reaches the exchange system.

Order Cancel Request

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = F
37	OrderID		C	Unique identifier as assigned by Equiduct. Required if OrigClOrdID not specified. Note, OrderID is preferred to OrigClOrdID and can result in faster processing.
41	OrigClOrdID		C	ClOrdID of the previous non rejected order (NOT the initial order of the day). Required if OrderID is not specified.
11	ClOrdID		Y	Unique ID of cancel request as assigned by the institution.
453	NoPartyIDs		Y	Valid value 1.
→	448	PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	447	PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→	452	PartyRole	Y	Identifies the type of PartyID. Valid value: 1 = Executing Firm (Order owner)
55	Symbol		Y	Equiduct stock mnemonic. Must match original order.
48	SecurityID		C	Required if Symbol is "[N/A]". Must match original order.
22	SecurityIDSource		C	Required if SecurityID is specified. Must match original order.
54	Side		Y	Side of order. Must match original order.
60	TransactTime		Y	Time this order request was initiated/released by the trader or trading system.
38	OrderQty		Y	Order quantity in number of shares
15	Currency		C	Required if SecurityIDSource specifies ISIN. Must match original order.
	Standard Trailer		Y	

Order Status Request

The **Order Status Request** message enables a member to query the details of an order on the market, either by OrderID or by ClOrdId. It will result in an **Execution Report** with ExecType (150) of “Order Status” being returned to the member.

Note: It is possible that, after issuing an **Order Status Request**, an **Execution Report** not relating to the request (one with ExecType other than “Order Status”) may be received for the given order *before* the response to the **Order Status Request** is received. If this happens, the unrelated **Execution Report** will reflect the most current state of the order (i.e. the delayed **Execution Report** with ExecType “Order Status” should be discarded). If there is any doubt about the latest status to be applied then the TransactTime (60) field should be used to identify the newest status. See section 0:**Synchronise Systems** for further explanation and discussion of this point.

Order Status Request

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = H
37	OrderID		C	Unique identifier as assigned by Equiduct. Required if ClOrdID not specified. Note, OrderID is preferred to ClOrdID and can result in faster processing.
11	ClOrdID		C	The ClOrdID of the order whose status is being requested. Required if OrderID is not specified.
453	NoPartyIDs		Y	Valid value 1.
→	448	PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	447	PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→	452	PartyRole	Y	Identifies the type of PartyID. Valid value: 1 = Executing Firm (Order owner)
790	OrdStatusReqID		N	Uniquely identify a specific Order Status Request message. Echoed back on Execution Report if provided.
55	Symbol		Y	Equiduct stock mnemonic. If not set to “[N/A]”, must match original order.
48	SecurityID		N	If specified, must match original order.
22	SecurityIDSource		C	Required if SecurityID is specified. Must match original order.
54	Side		Y	Side of order. Must match original order.
	Standard Trailer		Y	

Order Mass Status Request

The **Order Mass Status Request** message enables a member to query the details of all of their orders, or all orders for a given security. It will result in one or more **Execution Report**s with ExecType (150) of “Order Status” being returned to the member.

NOTE: It is possible that, after issuing an **Order Mass Status Request**, **Execution Report**s not relating to the request (ones with ExecType other than “Order Status”) may be received *before* the response to the **Order Mass Status Request** is received. If this happens, the unrelated **Execution Report**s will reflect the most current state of these orders (i.e. subsequent delayed **Execution Report**s with ExecType “Order Status” should be discarded for orders that received intervening **Execution Reports**). If there is any doubt about the latest status to be applied then the TransactTime (60) field should be used to identify the newest status. See section 0:Synchronise Systems for further explanation and discussion of this point.

Order Mass Status Request

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = AF
584	MassStatusReqID		Y	Unique ID of Mass Status Request as assigned by the institution.
585	MassStatusReqType		Y	Specifies the scope of the Mass Status Request. Valid values: 1 = Status for orders for a security 7 = Status for all orders
453	NoPartyIDs		Y	Valid value 1.
→	448	PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	447	PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→	452	PartyRole	Y	Identifies the type of PartyID. Valid value: 1 = Executing Firm (Order owner)
55	Symbol		C	Equiduct stock mnemonic. Required if MassStatusRequestType is 1. Can be "[N/A]".
48	SecurityID		C	Required if Symbol is "[N/A]" and MassStatusRequestType is 1, only ISIN supported.
22	SecurityIDSource		C	Required if Symbol is "[N/A]" and MassStatusRequestType is 1, only ISIN supported. Valid value: 4 = ISIN number
15	Currency		C	Required if SecurityIDSource specifies ISIN.
	Standard Trailer		Y	

Trade Capture Report

The Trade Capture Report message enables a Member to report the details of trades agreed outside Equiduct for publication in Equiduct Market Data.

Trade Capture Report

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = AE
571	TradeReportID	Y	Unique identifier for the Trade Capture Report
487	TradeReportTransT ype	Y	Transaction type Valid values: 0 = New 1 = Cancel

828	TrdType			N	Type of Trade: Valid values: 22 = Privately Negotiated Trade (N)
829	TrdSubType			N	Valid values: 15 = B (Broker to Broker) 18 = M (Market Maker to Market Maker) 22 = P (Portfolio trade) 26 = R (Riskless principal) 37 = X (Cross trade)
881	SecondaryTradeReportRefID			C	Required for TradeReportType = 1 (Cancel).
55	Symbol			Y	Equiduct Exchange Symbol. Can be “[N/A]”.
48	SecurityID			C	Required if Symbol is “[N/A]”.
22	SecurityIDSource			C	Required if Symbol is “[N/A]”, only ISIN supported. Valid values: 4 = ISIN number
15	Currency			C	Required if SecurityIDSource specifies ISIN.
32	LastQty			Y	Trade Quantity.
31	LastPx			Y	Trade Price.
75	TradeDate			N	Ignored by Equiduct. Trade date is determined from TransactTime(60).
60	TransactTime			Y	Time the transaction represented by this Trade Capture Report occurred i.e. Trade execution time. Trade date will also be obtained from this field.
64	SettlDate			Y	Settlement date. Will not be validated by Equiduct.
1390	TradePublishIndicator			N	Ignored by Equiduct. Valid values: 1 = Publish immediately
552	NoSides			Y	Valid value 2.
→	**54**	Side		Y	Order side.
→	**37**	OrderID		N	Client order identifier.
→	**453**	NoPartyIDs		Y	Must be 1, and specify PartyRole=17 (Contra Firm), for the ‘contra’ side of the Trade Report. Can be 2 for the ‘entering’ side of the Trade Report to specify both the Firm identifier (PartyRole=17) and the Reporting MIC (PartyRole=73).
→	→	**448**	PartyID	Y	Equiduct mnemonic for Executing Firm. Equiduct mnemonic, BIC or “CLIENT” for Contra Firm. “EQTA”, “EQTB” or “EQTC” for Reporting MIC.
→	→	**447**	PartyIDSource	Y	Used to identify source of PartyID value. Valid values: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic) B = BIC (Bank Identification Code - ISO 9362) G = MIC (Market Identification Code – ISO 10383)
→	→	**452**	PartyRole	Y	Identifies the type of PartyID. Valid values: 1 = Executing Firm (trade reporter) 17 = Contra Firm 73 = Reporting MIC

→	**528**	OrderCapacity	N	Order capacity for this side of the trade. Valid values: A = Agency P = Principal
	Standard Trailer		Y	

4.3.3 Outbound Messages (Sent to Member System)

Execution Report

The **Execution Report** message has a wide variety of uses in Equiduct:

- Confirm receipt of an order.
- Confirm changes to an existing order.
- Relay cancellation of a trade.
- Relay order status information.
- Reject an order.
- Relay order fill information.
- Relay quote execution information

NOTE: For Market Makers with a PartnerEx relationship, Equiduct may – in certain circumstances – interact with the order book on behalf of the Market Maker (e.g. sweep orders). Where this occurs, the **Execution Report** received will (a) be unsolicited in nature, (b) correspond to an order generated in Equiduct, and not entered by the Member System and (c) have an ExecType = L. Such trades should, however, be accepted and processed by the Member System, as they correspond to legally binding trades.

Execution Report Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = 8
37	OrderID	Y	Unique order id or quote id generated by Equiduct.
198	SecondaryOrderID	C	Required unless ExecType(150) = 8 (Rejected). Identifies the order or quote in the ITCH market data feed. Each order or each side of a quote will receive a new id when created and this will remain unchanged throughout the trading day A new id will automatically be assigned to GTC and GTD orders or quotes at the start of each trading day.
526	SecondaryClOrdID	N	Populated with quote id when Execution Report refers to an execution against a quote in the Hybrid book. It is also populated with the quote id of the PartnerEx Provider when the Execution Report refers to an execution in PartnerEx and is destined for the PartnerEx Provider.
11	ClOrdID	N	Populated for executions against electronically submitted orders which were assigned an ID by the submitting member. Not populated for orders manually entered by other means. If the execution report is for a quote, then populated with quote message id (QuoteMsgID) from the current quote.
41	OrigClOrdID	N	Conditionally populated for response to an electronic Cancel or Cancel/Replace request (ExecType=Replace or Cancelled). ClOrdID of the previous accepted order (NOT the initial order of the day) when cancelling or replacing an order.
790	OrdStatusReqID	N	Populated if responding to **and if provided on** the Order Status Request message. Echoes back the value provided by the requester.
584	MassStatusReqID	N	Required if responding to an Order Mass Status Request. Echoes back the value provided by the requester.

912	LastRptRequested	N	Used when responding to an Order Mass Status Request to indicate that this is the last Execution Report that will be returned as a result of the request.
453	NoPartyIDs	Y	2 or 3 when ExecType = F, H or for sweep orders, otherwise 1.
→ 448	PartyID	Y	When NoPartyIDs = 1, specifies the business owner of the order or quote (Executing Firm) When NoPartyIDs = 2, specifies the business owner of the order or quote (Executing Firm) and the generally accepted mnemonic of the clearing house or settlement agent (for non-cleared markets) when matched on the hybrid book. When NoPartyIDs = 3, specifies the business owner of the order or quote (Executing Firm), the generally accepted mnemonic of the clearing house or settlement agent/location (for non-cleared markets) when matched in the PartnerEx facility and the counterparty mnemonic (Contra Firm) to the bilateral PartnerEx relationship.
→ 447	PartyIDSource	Y	When NoPartyIDs = 1, always "C" NOTE: Must be C if the party is an Equiduct member. Both B and C are for specifying Clearing (PartyRole = 21) & Settlement (PartyRole = 10). Valid values: B = BIC (Bank Identification Code—Swift managed) code (ISO 9362 - See FIX documentation "Appendix 6-B") C = Generally accepted market participant identifier (Equiduct mnemonic, clearing house or settlement location)
→ 452	PartyRole	Y	Valid values: 1 = Executing Broker 10 = Settlement Location 17 = Contra Firm 21 = Clearing Organisation
17	ExecID	Y	Unique identifier of execution message as assigned by Equiduct (will be 0 (zero) for ExecType=I (Order Status)).
19	ExecRefID	C	Required if ExecType = H (Trade Cancel). Will be ExecID of ExecutionReport being cancelled.
150	ExecType	Y	Describes the purpose of the execution report. Describes the specific ExecutionRpt (i.e. Pending Cancel) while OrdStatus (39) will always identify the current order status (i.e. Partially Filled) Valid values: 0 = New 4 = Cancelled 5 = Replace 8 = Rejected C = Expired D = Restated F = Trade (partial fill or fill) H = Trade Cancel (Trade Cancelled by Equiduct Market Control) I = Order Status L = Triggered or Activated by System (e.g. Equiduct Sweep Order)

39	OrdStatus	Y	Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx Valid values: 0 = New 1 = Partially filled 2 = Filled 4 = Cancelled 8 = Rejected A = Pending New* C = Expired * Only valid for a Stop loss or Stop limit order which has not yet been triggered.
103	OrdRejReason	N	For optional use with ExecType = 8 (Rejected) or ExecType = I (Order Status) Valid values: 5 = Unknown Order 99 = Other Text field provides description of reject reason.
378	ExecRestatementReason	C	Conditionally required if ExecType = D (Restated) Code to identify the reason for an unsolicited Execution Report: 0 = GT Corporate Action 11 = Peg Refresh 99 = Other This tag will be set to “0” when cancelling an order due to a Corporate Action requiring a cancellation of the order at the start of the trading day. This tag will be set to “11” (Peg Refresh) to inform the member that the reference price for the Pegged order has changed. This tag will be set to “99” to inform the member of one of the following conditions: that a previously entered ATO/ATC order has become “active” as the market has entered the open or closing period, to acknowledge an order entered on previous day (ExecRestatementReason=99 will be sent even if the ATO/ATC order is placed *during* that auction phase) or for a Stop order which has been triggered without an immediate trade.
1	Account	N	Clearing or Settlement Account number
660	AcctIDSource	N	Valid values: 99 = Other (custom or proprietary)
63	SettlType	N	If both SettlType (63) and SettDate (64) are omitted, the default for SettlType (63) is 0 (Regular) Regular is defined as the default settlement period for the particular security on the exchange of execution. Valid values: 0 = Regular 2 = Next Day (T+1) 3 = T+2 4 = T+3 5 = T+4 7 = When And If Issued 9 = T+ 5
64	SettlDate	N	Takes precedence over SettlType value and conditionally required/omitted for specific SettlType values.

574	MatchType	N	Identifies the trading mechanism the Execution Report relates to. Valid values: HYB = Hybrid order book execution PEX = PartnerEx execution
55	Symbol	Y	Equiduct stock mnemonic.
48	SecurityID	N	ISIN code.
22	SecurityIDSource	N	Set to 4 indicating ISIN
207	SecurityExchange	N	Transaction Reporting MIC (Market Identification Code – ISO 10383). Valid values: EQTA EQTB EQTC EQTD
54	Side	Y	Valid values: 1 = Buy 2 = Sell
38	OrderQty	Y	Order quantity in number of shares
40	OrdType	N	Order type. Valid values: 1 = Market 2 = Limit 3 = Stop loss 4 = Stop limit P = Pegged K = At Best
44	Price	N	Required if specified on the order.
99	StopPx	C	Required for OrdType of 'Stop loss' or 'Stop limit'.
211	PegOffsetValue	N	A signed amount up to 4 decimal places in the traded currency that will be added to the peg price and rounded to the tick size. A buy order will be rounded down and a sell order will be rounded up. The default value is zero (0).
15	Currency	N	
59	TimeInForce	N	Absence of this field is interpreted as Good for Day. Valid values: 0 = Good for Day 1 = Good Till Cancel (GTC) 2 = At the Opening (ATO) 3 = Immediate or Cancel (IOC) 4 = Fill or Kill (FOK) 5 = Good For Session (GFS) 6 = Good Till Date (GTD) 7 = At the Close (ATC)
126	ExpireTime	N	Conditionally required if TimeInForce = GTD.

18	ExecInst	N	A single value used to identify the type of peg for a Pegged order (OrdType=P). Valid values: P = Market peg (Default). Buy Order pegs the Offer of the EBBO (excluding the Hybrid book). Sell Order pegs the Bid of the EBBO. R = Primary peg. Buy Order pegs the Bid of the EBBO (excluding the Hybrid book). Sell Order pegs the Offer of the EBBO.
528	OrderCapacity	N	Designates the capacity of the firm. Valid values: A = Agency P = Principal
32	LastQty	N	Quantity (e.g. shares) bought/sold on this (last) fill. Required if ExecType = Trade.
31	LastPx	N	Price of this (last) fill. Required if ExecType = Trade.
151	LeavesQty	Y	Quantity open for further execution. If the OrdStatus is Cancelled, Expired, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.
14	CumQty	Y	Currently executed quantity for chain of orders. Will always be zero for Execution Reports pertaining to quotes.
6	AvgPx	Y	Will always be zero for Execution Reports pertaining to quotes.
75	TradeDate	N	Used when reporting other than current day trades.
60	TransactTime	N	Time the transaction represented by this ExecutionReport occurred
120	SettlCurrency	N	Settlement Currency
111	MaxFloor	N	
851	LastLiquidityInd	N	Applicable only on OrdStatus of Partial Fill, Fill or Trade Cancel 1=Added Liquidity 2=Removed Liquidity
58	Text	N	Text description of reject reason
9938	ClearingHandlingType	N	Indicates the pre-posting and give-up action to be taken by the clearing system when a trade has occurred. Valid values: 0 = Manual Mode 1 = Automatic Extraction 2 = Automatic Allocation
	Standard Trailer	Y	

Order Cancel Reject

The **Order Cancel Reject** message is used report a failed attempt to cancel or amend an order in the central limit order book.

Order Cancel Reject Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = 9
37	OrderID	Y	If CxlRejReason="Unknown order" then this will be "NONE".

11	ClOrdID	Y	Unique order id assigned by institution or by the intermediary to the cancel request or to the replacement order.
41	OrigClOrdID	C	ClOrdID which could not be cancelled/replaced. ClOrdID of the previous accepted order (NOT the initial order of the day) when cancelling or replacing an order. If the CxlRejReason="Unknown Order" then this field will not be present on the outgoing message.
39	OrdStatus	Y	OrdStatus value after this cancel reject is applied, i.e. current status of the order. If CxlRejReason = "Unknown Order", this specifies "Rejected"
60	TransactTime	N	
434	CxlRejResponseTo	Y	Identifies the type of request that a Cancel Reject is in response to. Valid values: 1 = Order Cancel Request 2 = Order Cancel/Replace Request
102	CxlRejReason	N	Code to identify reason for cancel rejection. Valid values: 1 = Unknown order 99 = Other
58	Text	N	Description of rejection reason.
453	NoPartyIDs	Y	Valid value 1.
→	448 PartyID	Y	Used to identify source of PartyID. Business owner of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	447 PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→	452 PartyRole	Y	Identifies the type of PartyID. Valid value: 1 = Executing Firm (Order Cancel Request owner)
	Standard Trailer	Y	

Quote Status Report

The **Quote Status Report** message reports the current state of a quote on the market as requested by the **Quote Status Request** message. It may also be generated in response to a **Quote** message (acknowledgement), or as a result of unsolicited quote replenishment performed by Equiduct.

Quote Status Report

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = AI
649	QuoteStatusReqID	N	When responding to a Quote Status Request, this will reflect the value from the request message (if supplied).
117	QuoteID	Y	Static quote identifier assigned by Equiduct.

10015	BuyQuoteID	C	Identifies the buy side for the quote in the ITCH market data feed. This id is assigned when the quote is created and will remain unchanged throughout the trading day. A new id will automatically be assigned at the start of each trading day. NOTE: This field will always be populated in response to a Quote message that is accepted.
10016	SellQuoteID	C	Identifies the sell side for the quote in the ITCH market data feed. This id is assigned when the quote is created and will remain unchanged throughout the trading day. A new id will automatically be assigned at the start of each trading day. NOTE: This field will always be populated in response to a Quote message that is accepted.
1166	QuoteMsgID	N	Will contain the QuoteMsgID from the last Quote message sent by the user.
276	QuoteCondition	N	Populated by Equiduct to indicate if this quote is open or closed. Valid values: A = Open B = Closed
912	LastRptRequested	N	Used when responding to a Quote Status Request to indicate that this is the last Quote status Report that will be returned as a result of the request.
453	NoPartyIDs	Y	Valid value 1.
→	**448** PartyID	Y	Used to identify source of PartyID. Business owner (Market Maker) of the transaction must be specified i.e. PartyRole = 1 (Executing Firm)
→	**447** PartyIDSource	Y	Used to identify class source of PartyID value. Valid value: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic)
→	**452** PartyRole	Y	Identifies the type of PartyID i.e. Executing Firm (Market Maker). Required if NoPartyIDs > 0. Valid value: 1 = Executing Firm
55	Symbol	Y	Equiduct stock mnemonic.
48	SecurityID	N	ISIN code
22	SecurityIDSource	N	Set to 4 indicating ISIN
207	SecurityExchange	N	Transaction Reporting MIC (Market Identification Code – ISO 10383). Valid values: EQTA EQTB EQTC EQTD
15	Currency	N	Indicates default currency of instrument
132	BidPx	N	Equiduct will populate with current quote details.
133	OfferPx	N	Equiduct will populate with current quote details.
134	BidSize	N	Equiduct will populate with current quote details.
135	OfferSize	N	Equiduct will populate with current quote details.
60	TransactTime	N	Last update time of quote.

297	QuoteStatus	N	Identifies the status of the quote acknowledgement. Valid values: 0 = Accepted 5 = Rejected 6 = Removed from Market 8 = Query 9 = Quote Not Found 10 = Pending. Sent when a Quote has been automatically removed from the market due to failing to satisfy requirements of the Market Model, for example quote volume below MQS. 32 = Unsolicited Quote Update
9816	TickMultiplier	Y	Number of ticks applied to bid and offer price to widen the bid or offer price, as appropriate, when the auto quote refresh function is triggered.
58	Text	N	Text description of reject reason
	Standard Trailer	Y	

Trade Capture Report Acknowledgement

The **Trade Capture Report Acknowledgement** message is used to confirm receipt of a **Trade Capture Report**.

Trade Capture Report Ack

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = AR
571	TradeReportID	Y	Unique identifier for the Trade Capture Report
487	TradeReportTransType	Y	Transaction type Valid values: 0 = New 1 = Cancel
828	TrdType	N	Type of Trade: Valid values: 22 = Privately Negotiated Trade (N)
829	TrdSubType	N	Valid values: 15 = B (Broker to Broker) 18 = M (Market Maker to Market Maker) 22 = P (Portfolio trade) 26 = R (Riskless principal) 37 = X (Cross trade)
939	TrdRptStatus	Y	Status of Trade Report. Valid values: 0 = Accepted 1 = Rejected
751	TradeReportRejectReason	N	Reason for rejection of Trade Report. Valid values: 4 = Invalid TrdType 99 = Other 100 = Duplicate TradeReportID

818	SecondaryTradeReportID			Y	Equiduct Trade Report ID.
55	Symbol			Y	Equiduct Exchange Symbol. Can be “[N/A]”.
48	SecurityID			C	Required if Symbol is “[N/A]”.
22	SecurityIDSource			C	Required if Symbol is “[N/A]”, only ISIN supported. Valid values: 4 = ISIN number
207	SecurityExchange			N	Transaction Reporting MIC (Market Identification Code – ISO 10383). Valid values: EQTA EQTB EQTC EQTD
15	Currency			C	Required if SecurityIDSource specifies ISIN.
32	LastQty			Y	Trade Quantity.
31	LastPx			Y	Trade Price.
75	TradeDate			N	Trade Date.
60	TransactTime			Y	Time report was processed by Equiduct.
64	SettlDate			Y	Settlement date. Will not be validated by Equiduct.
1390	TradePublishIndicator			N	
552	NoSides			Y	Valid value 2.
→	54	Side		Y	Order side.
→	37	OrderID		N	Client order identifier.
→	453	NoPartyIDs		Y	1 or 2.
→	→	448	PartyID	Y	Equiduct mnemonic for Executing Firm. Equiduct mnemonic, BIC or “CLIENT” for Contra Firm. “EQTA”, “EQTB” or “EQTC” for Reporting MIC.
→	→	447	PartyIDSource	Y	Used to identify source of PartyID value. Valid values: C = Generally accepted market participant identifier (i.e. Equiduct mnemonic) B = BIC (Bank Identification Code - ISO 9362) G = MIC (Market Identification Code – ISO 10383)
→	→	452	PartyRole	Y	Identifies the type of PartyID. Valid values: 1 = Executing Firm (trade reporter) 17 = Contra Firm 73 = Reporting MIC
→	528	OrderCapacity		N	Order capacity for this side of the trade. Valid values: A = Agency P = Principal
	Standard Trailer			Y	

4.3.4 PartnerEx Relationship Messages

Equiduct allows the trading member to maintain and view certain information relating to PartnerEx relationships. This section provides details of these functions.

Inbound Messages (Sent by Member System)

PartnerEx Relationship Request

The following message is used to query for current status of PartnerEx relationships. If no relationships are found based on the criteria specified, then a Status message with a RejectReason "Relationship Not Found" will be returned.

PartnerEx Relationship Request

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = U1
10002	PartnerExReqID		N	Optional identifier of request.
10011	PartnerExID		N	Unique identifier for the PartnerEx relationship. Can be used to request status of a single relationship. If specified all other fields will be ignored.
453	NoPartyIDs		Y	Must be 1, 2 or 3. If 1, and no PartnerExID is specified, then all relationships for the stock (or range of stocks) will be returned for that firm (Entering Firm). If 2, then all relationships where the Entering Firm is the PartnerEx Customer or PartnerEx Provider can be requested by populating their mnemonic for the relevant PartyRole. If 3, then the set of relationships for that specific PartnerEx Customer/Provider are being requested. Entering Firm must always be specified.
→	**448**	PartyID	Y	Equiduct mnemonic
→	**447**	PartyIDSource	Y	Always "C"
→	**452**	PartyRole	Y	Valid Values 1 = Executing Broker (PartnerEx Customer) 7 = Entering Firm (PartyID must match either the PartnerEx Customer or Provider) 17 = Contra Firm (PartnerEx Provider)
55	Symbol		C	Equiduct instrument symbol. "*" if relationships across all stocks are required. Not required if PartnerExID is specified.
48	SecurityID		C	Required if Symbol is "[N/A]".
22	SecurityIDSource		C	Required if Symbol is "[N/A]", only ISIN supported. Valid values: 4 = ISIN number
15	Currency		C	Required if SecurityIDSource specifies ISIN.
60	TransactTime		Y	Time this request was initiated
	Standard Trailer		Y	

Update PartnerEx Relationship

The following message may be used by either the Broker (Order Flow Provider/PartnerEx Customer) or Market Maker (PartnerEx Provider) in an established PartnerEx relationship to adjust the details of the relationship. On successful validation these changes will take immediate effect in Equiduct.

Update PartnerEx Relationship Message

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = U2
10002	PartnerExReqID		N	Optional identifier of request for change to relationship.
10011	PartnerExID		N	Unique identifier for the PartnerEx relationship. Can be used to identify relationship to be updated.
10003	PartnerExUpdateAction		Y	Valid Values: 1 = Amend 2 = Halt 3 = Resume
453	NoPartyIDs		Y	If PartnerExID is not specified, then must be 3. If PartnerExID is specified must be 1 in order to specify Entering Firm (PartyRole = 7).
→	**448**	PartyID	Y	Equiduct mnemonic or "*". When PartyRole = Executing Broker or Contra Firm, and PartnerExUpdateAction = Halt or Resume, then "*" is a valid value for PartyID. For example, when PartyRole = 1, PartyID = *, it means that the Halt or Resume is applicable to all Executing Brokers (PartnerEx Customers) to whom the Entering Firm provides PartnerEx.
→	**447**	PartyIDSource	Y	Always "C"
→	**452**	PartyRole	Y	Valid Values 1 = Executing Broker (PartnerEx Customer) 7 = Entering Firm (PartyID must match either the PartnerEx Customer or Provider) 17 = Contra Firm (PartnerEx Provider)
55	Symbol		Y	Equiduct instrument symbol, or "*" when PartnerExUpdateAction = Halt or Resume. "*" denotes that the Halt or Resume is applicable to all Instruments for the relationships identified by the Parties group above.
48	SecurityID		C	Required if Symbol is "[N/A]".
22	SecurityIDSource		C	Required if Symbol is "[N/A]", only ISIN supported. Valid values: 4 = ISIN number
15	Currency		C	Required if SecurityIDSource specifies ISIN.
38	OrderQty		N	Maximum accepted quantity for relationship. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
9816	TickMultiplier		N	Deprecated, will be removed in the next release. Price improvement (expressed as a number of ticks) for relationship. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
10005	PartnerExPriority		N	Integer priority value from 1 (highest) to 99 (lowest). If the priority is changed to that of another relationship, then that relationship and all below will be moved down. NOTE: Only the PartnerEx Customer of the relationship can adjust this parameter.
10006	PartnerExFeeSplit		N	Deprecated, will be removed in the next release. Percentage of the Equiduct PartnerEx trading fee that the PartnerEx Provider is willing to pay. The value should be an integer in the range

			0 to 100. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
10013	PartnerExProviderSide	N	Whether the relationship amendment applies to a Buy side, Sell side or Both sided PartnerEx relationship. 0 = Both 1 = Buy 2 = Sell N.B. Default is Both. Here the Side refers to the PartnerEx Provider Side. i.e. a Buy side relationship is for Sell orders and a Sell side relationship is for Buy Orders.
60	TransactTime	Y	Time this update request was initiated
	Standard Trailer	Y	

Note that it is only possible for Members to update a PartnerEx relationship in which they are acting as either the Provider or Customer. Only PartnerEx Customers and Market Control have the ability to adjust the priority rating on a relationship. Only Market Control has the ability to adjust the Settlement Location and cycle once confirmation is received from both parties to the relationship.

Outbound Messages (Sent to Member System)

PartnerEx Relationship Status

This message is sent upon request, or following the update of a PartnerEx relationship by either of the parties to the relationship or Equiduct Market Control. Both PartnerEx partners will receive a PartnerEx Relationship Status message detailing the revised details of the relationship. Note that the PartnerExPriority field is not visible to the PartnerEx provider.

Note: In the following message specification "*" indicates that the field will not be present where the relationship is unknown (indicated with PartnerExStatus(10004)=UnknownRelationship(4).

PartnerEx Relationship Status message fields

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = U3
10002	PartnerExReqID	N	Optional identifier of change.
10011	PartnerExID	N	Unique identifier for the PartnerEx relationship.
10004	PartnerExStatus	Y	Status of the PartnerEx relationship. Valid values: 0 = OK 1 = Suspended 2 = Deleted 3 = Halted 4 = Unknown Relationship
10012	PartnerExHaltStatus	C	Additional information regarding halt status. Valid Values: 0 = OK (Relationship not halted) 1 = PartnerEx Relationship halted by customer 2 = PartnerEx Relationship halted by provider 3 = Relationship halted by both parties.

			Note: Field is not sent when PartnerExStatus=4
912	LastRptRequested	N	Used when responding to a PartnerEx Relationship Request to indicate that this is the last PartnerEx Relationship Status that will be returned as a result of the request.
453	NoPartyIDs	Y*	If the relationship exists then NoPartyIDs will be 3 or 4. Settlement location is optional; otherwise default clearing and settlement procedures for the stock as per the Hybrid book will be followed. In the case of the result being an "Unknown" relationship, then NoPartyIDs will be "1" and identify the entering firm.
→	448 PartyID	Y*	When PartyIDSource = C, Equiduct mnemonic for PartnerEx counterparties or settlement locations.
→	447 PartyIDSource	Y*	NOTE: Will be C if the party is an Equiduct member. Both B and C are for specifying Settlement Location (PartyRole = 10). Valid values: B = BIC (Bank Identification Code—Swift managed) code (ISO 9362 - See FIX documentation "Appendix 6-B") C = Generally accepted market participant identifier (i.e. Equiduct mnemonic or settlement location)
→	452 PartyRole	Y*	Valid values: 1 = Executing Broker (PartnerEx Customer) 7 = Entering Firm (PartyID must match either the PartnerEx Customer or Provider) 10 = Settlement Location 17 = Contra Firm (PartnerEx Provider)
55	Symbol	Y*	Equiduct instrument symbol.
48	SecurityID	C*	Required if Symbol is "[N/A]".
22	SecurityIDSource	C*	Required if Symbol is "[N/A]", only ISIN supported. Valid values: 4 = ISIN number
207	SecurityExchange	N	Transaction Reporting MIC (Market Identification Code – ISO 10383). Valid values: EQTA EQTB EQTC EQTD
15	Currency	C*	Required if SecurityIDSource specifies ISIN.
38	OrderQty	N	Maximum accepted quantity for relationship. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
9816	TickMultiplier	N	Deprecated, will be removed in the next release. Price improvement (expressed as a number of ticks) for relationship. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
63	SettlType	N	Regular is defined as the default settlement period for the particular security on the exchange of execution. Valid values: 0 = Regular 2 = Next Day (T+1) 3 = T+2 4 = T+3 5 = T+4

			7 = When And If Issued 9 = T+ 5 NOTE: Can only be adjusted by Equiduct Market Control.
10005	PartnerExPriority	N	Integer priority value from 1 (highest) to 99 (lowest). If the priority is changed to that of another relationship, then that relationship and all those below it will be moved down. NOTE: Only the PartnerEx Customer of the relationship can adjust this parameter. Will not be sent when the message is destined for the PartnerEx Provider
10006	PartnerExFeeSplit	N	Deprecated, will be removed in the next release. Percentage of the Equiduct PartnerEx trading fee that the PartnerEx Provider is willing to pay. The value should be an integer in the range 0 to 100. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
10013	PartnerExProviderSide	N	Whether the status applies to a Buy side, Sell side or Both sided PartnerEx relationship. 0 = Both 1 = Buy 2 = Sell N.B. Default is Both. Here the Side refers to the PartnerEx Provider Side. i.e. a Buy side relationship is for Sell orders and a Sell side relationship is for Buy Orders.
58	Text	N	Reason text of any failure to adjust or query relationships.
60	TransactTime	N	Time the relationship was updated by the trading system
	Standard Trailer	Y	

4.4 Market Data Messages

This section introduces Equiduct's market data related messages. The messages are based upon the FIX 4.4 Specification and provide both pre and post trade transparency for Equiduct's trading functions.

4.4.1 Unique Identifiers

Some of the unique identifiers used in the Market Data messages warrant further explanation.

MDEntryID

MDEntryID will be specified for all MDBookType's in snapshot and update messages. Consumers should use MDEntryID locate entries within a given MDBookType.

MDEntryID will remain constant throughout the day for the Equiduct VBBO (MDBookType = 99) and Top-Of-Book (MDBookType = 1) prices. Each side of an Equiduct VBBO (which is a bid and offer price pair calculated for a pre-defined number of shares) will have different MDEntryIDs. When the price or quantity for one side of an Equiduct VBBO changes an update will be sent with the same MDEntryID and MDUpdateAction = 1 (Change). Similarly, updates to the Top-Of-Book (MDBookType = 1) will always be conveyed with MDUpdateAction = 1 (Change) and referencing the same MDEntryIDs that were sent in the original snapshot.

For quotes and orders (which are aggregated at price levels) there will be an MDEntryID per price level per side. When a price level disappears an update with MDUpdateAction = 2 (Delete) will be sent for the MDEntryID. The MDEntryID may be reused at a later point for a different (or the same) price level. New quotes and orders at new price levels will be sent with MDUpdateAction

= 0 (New) and a new unique (among active entries) MDEntryID. Changes at a given price level will be communicated by referencing a valid MDEntryID with MDUpdateAction = 1 (Change) and the fields that have changed.

The removal of a price level may also be observed as an MDUpdateAction = 1 (Change) for a given MDEntryID specifying a new MDEntryPx; as well as the MDUpdateAction = 2 (Delete) followed by an MDUpdateAction = 0 (New)

ApplID, ApplSeqNum & ApplLastSeqNum

Note: For Consumers of conflated data the ApplSeqNum and ApplLastSeqNum update semantics described below do not hold and are not applicable. However, conflation is only available over point-to-point connections where ApplSeqNum's are not required for synchronisation and gaps will not occur during a given session.

ApplSeqNum's primary use is for the subscriber to reconcile which multicast updates to apply to their view of the book while waiting for the snapshot reply to their subscription request.

ApplSeqNum is an increasing 64-bit integer sequence number. The ApplLastSeqNum contains the value of the ApplSeqNum that was sent in the last update for a given ApplID. ApplID's are segmented on an Instrument/MDBookType basis. In other words, each Instrument/MDBookType pair has a separate ApplID; each ApplID has its own ApplLastSeqNum/ApplSeqNum sequence that can be used for synchronisation over the multicast connectivity option. See Market Data Synchronisation for more details.

A mismatch between ApplLastSeqNum received on the current update and the ApplSeqNum received on the last update to the ApplID constitutes a gap. This is only possible for Consumers connecting via the multicast option. When a gap is detected Consumers must consider the ApplID stale and issue a snapshot request for that ApplID (or Instrument/MDBookType if preferred) and resynchronise. Once the Snapshot response is received the standard Market Data Synchronisation procedure must be repeated. Gaps will not occur (during a given session) for tick-by-tick Consumers connecting via the point-to-point option.

4.4.2 Request Messages (Sent by Subscriber)

Security List Request

The **Security List Request** is used to obtain information about a particular Instrument, or all Instruments.

Security List Request

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = x (lowercase X)
320	SecurityReqID	Y	Unique ID of Request
559	SecurityListRequestType	Y	Type of Security List Request being made Valid values: 0 = Symbol 4 = All Securities
55	Symbol	C	Stock mnemonic.
48	SecurityID	C	Required if Symbol is “[N/A]”.

22	SecurityIDSource	C	Required if Symbol is "[N/A]". Valid values: 4 = ISIN number
15	Currency	C	Required if Symbol is "[N/A]".
263	SubscriptionRequestType	N	Subscribe or unsubscribe for security status to security specified in request. Valid values: 0 = Snapshot
	Standard Trailer	Y	

Trading Session Status Request

The **Trading Session Status Request** is used to obtain information about the current state of the different trading mechanisms in the various Equiduct market segments. Changes to market segment status will always be sent – no subscription necessary; the Consumer must discard **Trading Session Status** messages if they are not required.

Note: Trade Session Status Request has been deprecated and will be removed in a future release.

Trading Session Status Request

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = g (lowercase)
335	TradSesReqID	Y	Must be unique, or the ID of previous Trading Session Status Request to disable if SubscriptionRequestType = "Disable previous Snapshot + Updates Request (2)".
207	SecurityExchange	Y	Home Market tracked by this set of Instruments
10010	MarketSegmentID	Y	"PARTNEREX" "HYBRID"
263	SubscriptionRequestType	Y	Valid values: 0 = Snapshot
	Standard Trailer	Y	

Market Data Request

The **Market Data Request** message is used to request a snapshot or register a subscription to a set of instruments. A range of market data information can be requested.

Updates will only be conveyed using the **Market Data Incremental Refresh** message.

Note: AggregatedBook and MDImplicitDelete are not included in the request message. The behaviour supported in relation to these fields is explained in 0: **Price-Depth**.

Market Data Request

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = V
262	MDReqID		Y	Must be unique, or the ID of a previous Market Data Request to disable if SubscriptionRequestType = Disable previous Snapshot + Updates Request (2).
263	SubscriptionRequestType		Y	SubcriptionRequestType indicates to the other party what type of response is expected. A snapshot request only asks for current information. A subscribe request asks for updates as the status changes. Unsubscribe will cancel any future update messages from the counter party. Valid values: 0 = Snapshot (no Unsubscribe necessary) 1 = Snapshot + Updates (Subscribe – only valid on point-to-point connection) 2 = Disable previous Snapshot + Update Request (Unsubscribe – only valid on point-to-point connection)
1180	ApplID		C	Required if MDBookType and NoRelatedSymbol group not specified. The "application" or "stream" identifier for the ApplSeqNum sequence. Can be used to resynchronise after a gap has been detected in the market data stream, as described in Section 0
1021	MDBookType		C	Required if ApplID not specified. Valid Values: 0 = Trade (Time & Sales – will also return historical Time & Sales information) 1 = Top-Of-Book 2 = Price-Depth 99 = VBBO
146	NoRelatedSym		C	Required if ApplID not specified. Number of symbols (instruments) requested.
→	55	Symbol	C	Required if ApplID not specified. Stock mnemonic.
→	48	SecurityID	C	Required if Symbol is "[N/A]" and ApplID not specified.
→	22	SecurityIDSource	C	Required if Symbol is "[N/A]" and ApplID not specified. Valid values: 4 = ISIN number
→	15	Currency	C	Required if SecurityIDSource specifies ISIN.
	Standard Trailer		Y	

4.4.3 Response Messages (Sent to the Subscriber)

Security List

The **Security List** message contains static reference information about an Instrument.

Security List Message

Tag	Field Name		Req'd	Comments
	Standard Header		Y	MsgType = y (lowercase Y)
320	SecurityReqID		Y	Unique ID of Request
322	SecurityResponseID		Y	Identifier for the Security List message
560	SecurityRequestResult		Y	Result of the Security Request identified by the SecurityReqID Valid values: 0 = Valid request 1 = Invalid or unsupported request 2 = No instruments found that match selection criteria 4 = Instrument data temporarily unavailable
393	TotNoRelatedSym		N	Used to indicate if the total number of securities being returned for this request. Used in the event that message fragmentation is required.
893	LastFragment		N	Indicates if this message in a fragmented response Valid values: Y = Last message N = Not last message
146	NoRelatedSym		N	Specifies the number of repeating symbols (instruments) specified
→	55	Symbol	Y	Stock mnemonic.
→	48	SecurityID	Y	ISIN
→	22	SecurityIDSource	Y	Valid values: 4 = ISIN number
→	207	SecurityExchange	Y	Home Market (as defined by CESR) of Instrument.
→	107	SecurityDesc	Y	Security Description
→	15	Currency	Y	Stock Currency
→	561	RoundLot	N	
→	6138	TickSize	N	Minimum permitted price change. See Equiduct Market Configuration document for details of the tick size ranges in use, the value provided here is the applicable tick size at the close of the previous trading day.
→	9871	RefreshSize	N	Minimum Quotation Size (MQS). The number of shares that a quote will be refreshed to by the auto quote refresh mechanism.
→	10007	SMSQty	N	The number of shares as determined by Equiduct (based on the € value CESR defined Standard Market Size - SMS) for which an Equiduct VBBO will be calculated. If CESR does not provide a value for the stock this field will be blank.
→	10008	RMSQty	Y	The number of shares as determined by Equiduct (based on the € value CESR defined Retail Market Size - RMS) for which an Equiduct VBBO will be calculated
	Standard Trailer		Y	

Trading Session Status

The **Trading Session Status** message is used to communicate the status of trading mechanisms within the various Equiduct market segments.

Note: Trade Session Status has been deprecated and will be removed in a future release.

Trading Session Status Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = h (lowercase)
335	TradSesReqID	N	Provided for a response to a specific Trading Session Status Request message (snapshot).
207	SecurityExchange	Y	Home Market tracked by this set of Instruments
10010	MarketSegmentID	Y	Valid values: "PARTNEREX" "HYBRID"
336	TradingSessionID	Y	"DAY"
625	TradingSessionSubID	Y	Valid values: "OPENING AUCTION" "TRADING" "CLOSING AUCTION" "INTRADAY AUCTION" "CLOSED"
340	TradSesStatus	Y	State of the trading session. Valid values: 0 = Unknown 1 = Halted 2 = Open 3 = Closed 4 = Pre-Open 5 = Pre-Close 6 = Request Rejected
567	TradSesStatusRejReason	N	Required when TradSesStatus = "Request Rejected" Valid values: 99 = Other 100 = Duplicate TradSesReqID 101 = Unknown SecurityExchange 102 = Unknown MarketSegmentID 103 = Unsupported SubscriptionRequestType Text provides extra information.
58	Text	N	
	Standard Trailer	Y	

Market Data Request Reject

Failed requests are communicated using the **Market data Request Reject** message.

Market Data Request Reject Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = Y
262	MDReqID	Y	Must refer to the MDReqID of the request.

281	MDReqRejReason	N	Reason for the rejection of a Market Data request. Valid values: 0 = Unknown symbol 1 = Duplicate MDReqID 4 = Unsupported SubscriptionRequestType A = Unsupported Scope a = Unsupported MDBookType b = Unknown MDReqID (i.e. trying to cancel an unknown subscription) c = Unknown ApplID
58	Text	N	
	Standard Trailer	Y	

Market Data Snapshot / Full Refresh

The **Market Data Snapshot / Full Refresh** messages are used to respond to **Market Data Requests**.

Market Data Snapshot Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = W
1180	ApplID	Y	The "application" or "stream" identifier for the ApplSeqNum sequence.
1181	ApplSeqNum	Y	Sequence number of the Market Data update. Populated with zero when there is no data to be returned; such as a response to a Time & Sales request (MDBookType = Trade) for an Instrument that has not yet traded today.
262	MDReqID	N	Conditionally required if this message is in response to a Market Data Request.
55	Symbol	Y	Stock mnemonic.
48	SecurityID	C	Requires SecurityIDSource if specified.
22	SecurityIDSource	C	Required if SecurityID is specified. Valid value: 4 = ISIN number
15	Currency	C	Can be used to specify the currency of the quoted price.
451	NetChgPrevDay	N	Net change from previous day's closing price vs. last traded price. Only included for Top-Of-Book (MDBookType = 1)
1021	MDBookType	Y	Valid Values: 0 = Trade (Time & Sales) 1 = Top-Of-Book 2 = Price-Depth 99 = VBBO
268	NoMDEntries	Y	Number of entries following.

→	269	MDEntryType		Y	Must be the first field in this repeating group. Valid values: 0 = Bid 1 = Offer 2 = Trade 4 = Opening Price 5 = Closing Price 7 = Trading Session High Price 8 = Trading Session Low Price B = Trade Volume I = Instrument Status
→	278	MDEntryID		N	If specified, must be unique among currently active entries if MDUpdateAction = New (0), must be the same as a previous MDEntryID if MDUpdateAction = Delete (2) or Change(1).
→	453	NoPartyIDs		N	Valid values 0 (MDEntry is an Order or Quote) or 1 (MDEntry relates to a VBBO).
→	→	448	PartyID	N	Used to identify source of PartyID. Required if PartyIDSource is specified. Required if NoPartyIDs > 0. Used to identify the size of VBBO calculation ("RMS" or "SMS") when MDBookType = 99.
→	→	447	PartyIDSource	N	Used to identify class source of PartyID value. Required if PartyID is specified. Required if NoPartyIDs > 0. Valid values for Equiduct: C = Default value
→	→	452	PartyRole	N	Identifies the type of PartyID (e.g. Executing Broker). Required if NoPartyIDs > 0. Valid value: 1 = Executing Firm
→	270	MDEntryPx		C	Conditionally required if MDEntryType is not Trade Volume (B). During a market halt or auction call phase it is possible for market orders to rest in the order book. Market orders will be signified with MDEntryPx=0.
→	271	MDEntrySize		C	Conditionally required if MDEntryType = Bid(0), Offer(1), Trade(2) or Trade Volume (B)
→	272	MDEntryDate		N	Date of Market Data Entry
→	273	MDEntryTime		N	Time of Market Data Entry
→	60	TransactTime		N	Required when MDEntryType = Trade (2). Trade time as reported or execution time on Equiduct.
→	326	SecurityTradingStatus		N	Identifies the trading status of the Instrument Valid values: 2 = Trading Halt 3 = Resume 17 = Ready to trade 18 = Not Available for trading

→	327	HaltReason	N	Denotes the reason for Trading Halt Valid values: H = Equiduct Market Control Initiated I = Equiduct Internal technical fault S = Suspended P = News Pending R = “Home” reference market for stock is not in open continuous trading T = Technical issue obtaining reference market prices D = News Dissemination M = Additional Information (see Text) For more details on the reason for the Halt see Text field.
→	277	TradeCondition	N	Will be populated when MDEntryType = Trade (2). Equiduct Trade Type identifier. If multiple conditions apply then identifier will be assigned in the priority order listed below (highest priority first). Valid values: OC = Opening Cross Trade CC = Closing Cross Trade CT = Cancelled Trade AU = Auction Trade BE = Best Execution (PartnerEx) Trade AT = Hybrid Trade LP = Trade Report from Previous Day LT = Late Trade Report DT = Trade Report subject to conditions other than current market price NT = Off-book, on-Exchange Trade Report
→	17	ExecID	C	Required where MDBookType=0 This field provides a unique identifier for the Trade.
→	346	NumberOfOrders	N	Used to show how many individual orders make up an MDEntry
→	58	Text	N	Further details relating to the HaltReason
	Standard Trailer		Y	

Market Data Incremental Refresh

The **Market Data Increment Refresh** message is used to notify the subscriber of updates to the data set they are interested in.

Market Data Incremental Message

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = X
1180	ApplID	Y	The “application” or “stream” identifier for the ApplLastSeqNum, ApplSeqNum sequence.
1181	ApplSeqNum	Y	Sequence number of the Market Data update.
1350	ApplLastSeqNum	N	Previous sequence number sent for this ApplID (i.e. for this Instrument, MDBookType pair). Will be equal to ApplSeqNum for the first message of the day.

1021	MDBookType			Y	Valid Values: 0 = Trade (Time & Sales) 1 = Top-Of-Book 2 = Price-Depth 99 = VBBO
262	MDReqID			N	Conditionally required if this message is in response to a Market Data Request.
268	NoMDEntries			Y	Number of entries following.
→	**279**	MDUpdateAction		Y	Must be first field in this repeating group. Valid values: 0 = New 1 = Change 2 = Delete
→	**269**	MDEntryType		N	Conditionally required if MDUpdateAction = New(0). Cannot be changed. Valid values: 0 = Bid 1 = Offer 2 = Trade 4 = Opening Price 5 = Closing Price 7 = Trading Session High Price 8 = Trading Session Low Price B = Trade Volume I = Instrument Status
→	**278**	MDEntryID		N	If specified, must be unique among currently active entries if MDUpdateAction = New (0), must be the same as a previous MDEntryID if MDUpdateAction = Delete (2) or Change(1).
→	**453**	NoPartyIDs		N	Valid values 0 (MDEntry is an Order or a Quote update) or 1 (MDEntry relates to a VBBO).
→	→	**448**	PartyID	N	Used to identify source of PartyID. Required if PartyIDSource is specified. Required if NoPartyIDs > 0. Used to identify the size of VBBO calculation (“RMS” or “SMS”) when MDBookType = 99.
→	→	**447**	PartyIDSource	N	Used to identify class source of PartyID value. Required if PartyID is specified. Required if NoPartyIDs > 0. Valid values for Equiduct: C = Default value
→	→	**452**	PartyRole	N	Identifies the type of PartyID (e.g. Executing Broker). Required if NoPartyIDs > 0. Valid value: 1 = Executing Firm
→	**55**	Symbol		C	Must be specified if MDUpdateAction = New(0) for the first Market Data Entry in a message. For subsequent Market Data Entries where MDUpdateAction = New(0), the default is the instrument used in the previous Market Data Entry if Symbol is not specified. Stock mnemonic.
→	**48**	SecurityID		C	Requires SecurityIDSource if specified.

→	22	SecurityIDSource	C	Required if SecurityID is specified. Valid value: 4 = ISIN number
→	270	MDEntryPx	C	Conditionally required when MDUpdateAction = New(0) and MDEntryType is not Trade Volume (B).; During a market halt or auction call phase it is possible for market orders to rest in the order book. Market orders will be signified with MDEntryPx=0.
→	15	Currency	C	Can be used to specify the currency of the quoted price.
→	271	MDEntrySize	C	Conditionally required when MDUpdateAction = New(0) and MDEntryType = Bid(0), Offer(1), Trade(2) or Trade Volume(B).
→	272	MDEntryDate	N	Date of Market Data Entry
→	273	MDEntryTime	N	Time of Market Data Entry
→	60	TransactTime	N	Required when MDEntryType = Trade (2). Trade time as reported or execution time on Equiduct.
→	326	SecurityTradingStatus	N	Identifies the trading status of the Instrument Only populated for MDBookType = Top-Of-Book and VBBO. Valid values: 2 = Trading Halt 3 = Resume 17 = Ready to trade 18 = Not Available for trading
→	327	HaltReason	N	Denotes the reason for Trading Halt, and only populated for MDBookType = Top-Of-Book or MDBookType=VBBO Valid values: H = Equiduct Market Control Initiated I = Equiduct Internal technical fault S = Suspended P = News Pending R = “Home” reference market for stock is not in open continuous trading T = Technical issue obtaining reference market prices D = News Dissemination M = Additional Information (see Text) For more details on the reason for the Halt see Text field.
→	277	TradeCondition	N	Will be populated when MDEntryType = Trade (2). Equiduct Trade Type identifier. If multiple conditions apply then identifier will be assigned in the priority order listed below (highest priority first). Valid values: OC = Opening Cross Trade CC = Closing Cross Trade CT = Cancelled Trade AU = Auction Trade BE = Best Execution (PartnerEx) Trade AT = Hybrid Trade LP = Trade Report from Previous Day LT = Late Trade Report DT = Trade Report subject to conditions other than current market price NT = Off-book, on-Exchange Trade Report
→	17	ExecID	C	Required where MDBookType=0 This field provides a unique identifier for the Trade.
→	346	NumberOfOrders	N	Used to show how many individual orders make up an MDEntry

→	**451**	NetChgPrevDay	N	
→	**58**	Text	N	Further details relating to the HaltReason
	Standard Trailer		Y	

5 APPENDICES

Appendix A: Example Scenarios

This section provides examples of message population for a variety of scenarios.

5.1 Transactional

5.1.1 Order Immediate Execution & Cancel / Replace

The table details the population of key fields when an order is immediately executed on entry; followed by a cancel/replace to increase the size of the order.

Time	Message Received (ClOrdID, OrigClOrdID)	Message Sent (ClOrdID, OrigClOrdID)	Exchange (OrderID)	Exec Type	Ord Status	Order Qty	Cum Qty	Leaves Qty	Comment
1	New Order(X)					10,000			
2		Execution (X)	A	Trade	Partially Filled	10,000	1,000	9,000	Execution for 1,000
3	Replace Request(Y,X)		A			12,000			Request to increase total order qty from 10,000 to 12,000
4		Execution (Y,X)	A	Replace	Partially Filled	12,000	1,000	11,000	Order continues to exist with an executed quantity of 1,000, client order ID changes from X to Y, exchange order ID remains A
5		Execution (Y)	A	Trade	Partially Filled	12,000	2,000	10,000	Execution for 1,000

Note:

In line with the FPL Global Exchanges & Markets Committee best practices:-

1. The absence of an Execution Report with ExecType “New” and OrdStatus “New” prior to the Execution Report on line 2.
2. OrdQty specified on line 3 is interpreted as the new total investor quantity on the order.

The table below illustrates what would have happened in the above example had the investor wanted to reduce the quantity

Time	Message Received (ClOrdID, OrigClOrdID)	Message Sent (ClOrdID, OrigClOrdID)	Exchange (OrderID)	Exec Type	Ord Status	Order Qty	Cum Qty	Leaves Qty	Comment
1	New Order(X)					10,000			
2		Execution (X)	A	Trade	Partially Filled	10,000	1,000	9,000	Execution for 1,000
3	Replace Request(Y,X)		A			8,000			Request to decrease total order qty from 10,000 to 8,000
4		Execution (Y,X)	A	Replace	Partially Filled	8,000	1,000	7,000	Order continues to exist with an executed quantity of 1,000, client order ID changes from X to Y, exchange order ID remains A
5		Execution (Y)	A	Trade	Partially Filled	8,000	2,000	6,000	Execution for 1,000

IOC and FOK order flows

Time	Message Received (ClOrdID, OrigClOrdID)	Message Sent (ClOrdID, OrigClOrdID)	Exchange (OrderID)	Exec Type	Ord Status	Order Qty	Cum Qty	Leaves Qty	Comment
1	New Order(X)					10,000			Order is IOC
2		Execution (X)	A	Trade	Cancelled	10,000	1,000	9,000	Execution for 1,000 and implicit cancellation of remainder
3	New Order(X)					10,000			Order is FOK
4		Execution(X)	A	Trade	Cancelled	10,000	0	0	No execution – order cannot be fully filled.
5	New Order(X)					10,000			Order is FOK
6		Execution(X)	A	Trade	Partially Filled	10,000	1000	9000	Matched against an order/quote for 1000
7		Execution(X)	A	Trade	Partially Filled	10,000	5000	5000	Matched against an order/quote for 4000
8		Execution(X)	A	Trade	Filled	10,000	10000	0	Matched against an order/quote for final 5000

5.1.2 Iceberg Orders

Time	Message Received (ClOrdID, OrigClOrdID)	Message Sent (ClOrdID, OrigClOrdID)	Exchange (OrderID)	Exec Type	Ord Status	Order Qty	Cum Qty	Leaves Qty	MaxFloor	Comment
1	New Order(X)					10,000			200	
2		Execution (X)	A	New	New	10,000			200	Order rests on Hybrid order book
3		Execution (X)	A	Trade	Partially Filled	10,000	100	9,900	200	Execution for 100. 100 shares remain visible in the market

5.2 Market Data

This section provides message population examples for various scenarios in order to further clarify the usage of the messages defined in the main document. For brevity, only the main body fields are shown.

Fictitious Instruments GMBBb and IVVBb are used. The examples reference the following book for GMBBb that has two market makers MM1 and MM2.

Quote Status	Split/MMID	Quantity	Bid	Ask	Quantity	Split/MMID	Quote Status
B	MM1	450	22.45	22.48	300	2	
	3	300	22.45	22.49	200	MM2	A
A	MM2	250	22.44	22.49	100	MM1	B
	2	400	22.43	22.49	250	2	
				22.51	100	1	

5.2.1 Book Management - (Level I & Market Depth)

Level I, Market Depth, Times and Sales and VBBO information are all subscribed to using the same message type. The following sections provide examples of how to subscribe to these different data streams and how the responses and subsequent updates are populated.

Subscription Request

The following table illustrates an example of how to subscribe to Top Of Book updates for two instruments.

Tag	Name	Value	Description
262	MDReqID	1254	
263	SubscriptionRequestType	1	Snapshot and Updates
1021	MDBookType	1	Top-Of-Book
146	NoRelatedSym	2	Two top of book subscriptions
55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
15	Currency	EUR	Along with ISIN uniquely identifies Instrument
55	Symbol	IVVBb	Instrument
48	SecurityID	BE0233793108	ISIN for IVVBb
22	SecurityIDSource	4	ISIN
15	Currency	EUR	Along with ISIN uniquely identifies Instrument

Subscription Response

If the subscription request is valid, the following is an example Snapshot message that could be sent in response for the instrument GMBBb.

Tag	Name	Value	Description
	MsgType	W	Market Data Snapshot
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
262	MDReqID	1254	From the request message
55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
15	Currency	EUR	Along with ISIN uniquely identifies Instrument
1021	MDBookType	1	Top-Of-Book
326	SecurityTradingStatus	17	Instrument is open for automated matching.
268	NoMDEntries	2	
269	MDEntryType	0	Bid
278	MDEntryID	1234B	Unique Top-Of-Book bid price identifier for “GMBBb”. Note: Value shown is for illustrative purposes only.
270	MDEntryPx	22.45	Best Bid price
271	MDEntrySize	300	Sum of all size available at best bid (300 shares from orders). 450 shares from MM1’s quote are not included as the quote is currently Closed.
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change to Top-Of-Book
269	MDEntryType	1	Offer
278	MDEntryID	1234S	Unique Top-Of-Book offer price identifier for “GMBBb”. Note: Value shown is for illustrative purposes only.
270	MDEntryPx	22.48	Best offer
271	MDEntrySize	300	Sum of all size available at best offer
272	MDEntryDate	<UTCDateOnly>	Date of Latest Change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change to Top-Of-Book

If the request had been for MDBookType = 0 (Full Book), then a Snapshot message of the kind (partially) shown below would be sent.

Tag	Name	Value	Description
	MsgType	W	Market Data Snapshot
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
262	MDReqID	1254	From the request message

55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
15	Currency	EUR	Along with ISIN uniquely identifies Instrument
1021	MDBookType	2	Price-Depth
326	SecurityTradingStatus	17	Instrument is ready for automated matching.
268	NoMDEntries	9	
269	MDEntryType	0	Bid
278	MDEntryID	1234QB02	Unique identifier for entry
270	MDEntryPx	22.44	Buy price
271	MDEntrySize	250	Sum of Quantity at Offer Price
272	MDEntryDate	<UTCDateOnly>	Date of Latest Change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
269	MDEntryType	0	Bid
278	MDEntryID	1234OB02	Unique identifier for entry
270	MDEntryPx	22.45	Best offer
271	MDEntrySize	300	Sum of Quantity at OfferPrice
272	MDEntryDate	<UTCDateOnly>	Date of Latest Change
273	MDEntryTime	<UTCTime>	Time of latest change
346	NumberOfOrders	3	Three orders make up the 300 shares of order interest at this price level.
269	MDEntryType	0	Bid
278	MDEntryID	1234OB03	Unique identifier for entry
270	MDEntryPx	22.43	Offer price
271	MDEntrySize	400	Sum of Quantity at Offer Price
272	MDEntryDate	<UTCDateOnly>	Date of Latest Change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
346	NumberOfOrders	2	Two orders make up the 300 shares of order interest at this price level.
…	…	…	Similar pattern for the offer side.

New/Open Quote

If MM1 opens his quote without changing his prices the following update will be sent out. If MM1 changes any other quote parameters they will also be included in the update. Note, that the 450 shares from the quote are now available for trading so a Top-Of-Book update is sent (only if Top-Of-Book updates are subscribed to).

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	For a non-conflated point-to-point connection this should equal the <ApplSeqNum> of the first example snapshot sent above
1021	MDBookType	1	Top-Of-Book
268	NoMDEntries	1	
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
278	MDEntryID	1234B	Unique Top-Of-Book bid price identifier for “GMBBb”. Note: Value shown is for illustrative purposes only.
271	MDEntrySize	750	450 shares from MM1’s quote and 300 shares from aggregated order interest.
272	MDEntryDate	<UTCDateOnly>	Date of Latest Change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change

Note: Price has not changed and so is not sent.

The following update is sent to Price-Depth subscribers.

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	For a non-conflated point-to-point connection this should equal the <ApplSeqNum> of the second example snapshot sent above
1021	MDBookType	2	Price-Depth
268	NoMDEntries	1	
269	MDEntryType	0	Bid
278	MDEntryID	1234QB03	Unique identifier for entry
270	MDEntryPx	22.45	Best offer
271	MDEntrySize	750	Sum of Quantity at OfferPrice

272	MDEntryDate	<UTCDateOnly>	Date of Latest Change
273	MDEntryTime	<UTCTime>	Time of latest change

New Price Level

If a new buy order were to be added for 150 shares at 22.46, then the following would be sent to Top-Of-Book subscribers.

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	For a non-conflated consumers this should equal the last <ApplSeqNum> received for this <ApplID>
1021	MDBookType	1	Top-Of-Book
268	NoMDEntries	1	
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
278	MDEntryID	1234B	Unique Top-Of-Book bid price identifier for “GMBBb”.
270	MDEntryPx	22.46	Buy price
15	Currency	EUR	Along with ISIN uniquely identifies Instrument
271	MDEntrySize	150	150 shares
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change

Price-Depth subscribers will receive the following update.

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	For a non-conflated consumers this should equal the last <ApplSeqNum> received for this <ApplID>
1021	MDBookType	2	Price-Depth
268	NoMDEntries	1	
279	MDUpdateAction	0	New entry
269	MDEntryType	0	Bid
278	MDEntryID	1234OB07	Unique identifier for entry
55	Symbol	1234	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
270	MDEntryPx	22.46	Buy price

15	Currency	EUR	Along with ISIN uniquely identifies Instrument
271	MDEntrySize	150	150 shares
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
346	NumberOfOrders	1	One order at this price level

If the Equiduct member with the sell order at 22.51 for 100 shares modifies the price on the order to 22.52 for 50 shares the following messages will be sent out to Price-Depth subscribers.

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	
268	NoMDEntries	1	
279	MDUpdateAction	2	Delete entry
1021	MDBookType	2	Price-Depth
269	MDEntryType	1	Offer
278	MDEntryID	1234OA04	Unique identifier for entry

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	
268	NoMDEntries	1	
279	MDUpdateAction	0	New entry
1021	MDBookType	2	Price-Depth
269	MDEntryType	1	Offer
278	MDEntryID	1234OA08	New unique (among active entries) identifier for entry
55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
270	MDEntryPx	22.52	Buy price
15	Currency	EUR	Along with ISIN uniquely identifies Instrument
271	MDEntrySize	50	50 shares offered
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
346	NumberOfOrders	1	One order at this price level

Note: Consumers of conflated data may see this pattern of updates, or they may only receive one message referring to the MDEntryID with all relevant fields updated. This does not require any special processing provided MDEntryID handling is implemented as described in this document.

Deleted Price Level

If the member now decides to cancel the amended sell order at 22.52 for 50 shares, the following message will be sent to Price-Depth subscribers.

Note: The correlation of MDEntryID.

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	
1021	MDBookType	2	Price-Depth
268	NoMDEntries	1	
279	MDUpdateAction	2	Delete entry
269	MDEntryType	1	Offer
278	MDEntryID	1234OA08	Unique identifier for entry

5.2.2 Trades

When a trade occurs in a stock, a message such as the following will be sent to subscribers of Trade information.

Tag	Name	Value	Description
	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	For a non-conflated consumers this should equal the last <ApplSeqNum> received for this <ApplID> (i.e. Time & Sales update for this Instrument)
1021	MDBookType	0	Time & Sales
268	NoMDEntries	1	
279	MDUpdateAction	0	New entry
269	MDEntryType	2	Trade
278	MDEntryID	1234TS08	New unique (among active entries) identifier
55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
270	MDEntryPx	22.47	Buy price

15	Currency	EUR	Along with ISIN uniquely identifies Instrument
271	MDEntrySize	400	400 shares traded
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of trade publication
60	TransactTime	<UTCTime>	Time of trade execution as reported.
17	ExecID	Exe.d73h399191	Unique reference for trade.
277	TradeCondition	AT	Trade was reported to Equiduct

5.2.3Trading Session Status

Note: Trade Session Status Request has been deprecated and will be removed in a future release.

Subscription Request

To request the current trading state for the Hybrid book of the Belgian segment of Equiduct, the following request would be issued.

Tag	Name	Value	Description
335	TradSesReqID	51234	
207	SecurityExchange	XBRU	Instruments where the Brussels Stock Exchange is the "Home Market"
10010	MarketSegmentID	HYBRID	Hybrid book trading session transitions
263	SubscriptionRequestType	0	Snapshot

Subscription Response

If the request is valid, the following is an example response when the market is in the call auction of the pre-open phase.

Tag	Name	Value	Description
335	TradSesReqID	51234	
207	SecurityExchange	XBRU	Instruments where the Brussels Stock Exchange is the "Home Market"
10010	MarketSegmentID	HYBRID	Hybrid book trading session transitions
336	TradingSessionID	"DAY"	
625	TradingSessionSubID	OPENING AUCTION	
340	TradingSesStatus	4	Market Segment is in pre-open state

Transitions

When the above market segment moves into continuous trading, the following message will be sent to anyone subscribing to updates.

Tag	Name	Value	Description
335	TradSesReqID	51234	
207	SecurityExchange	XBRU	Instruments where the Brussels Stock Exchange is the "Home Market"
10010	MarketSegmentID	HYBRID	Hybrid book trading session transitions
336	TradingSessionID	"DAY"	Normal hours
625	TradingSessionSubID	TRADING	Continuous trading
340	TradingSesStatus	2	Market Segment is now open

5.2.4 VBBO

Equiduct VBBOs will be differentiated from the underlying stocks by being given a different MDBookType.

Subscription Request

The following table illustrates an example of how to subscribe to an Equiduct VBBO. Through one subscription you are subscribing to all VWAP prices calculated for the Instrument.

Tag	Name	Value	Description
262	MDReqID	12345	
263	SubscriptionRequestType	1	Snapshot and Updates
1021	MDBookType	99	VBBO
146	NoRelatedSym	1	Number of VBBOs subscribed to.
55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
15	Currency	EUR	Along with ISIN uniquely identifies the underlying Instrument

Subscription Response

If the subscription request is valid, the following is an example Snapshot message that could be sent in response for the instrument 1234.

Tag	Name	Value	Description
35	MsgType	W	Market Data Snapshot
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
262	MDReqID	12345	From the request message
55	Symbol	GMBBb	Instrument
48	SecurityID	BE0233793107	ISIN for GMBBb
22	SecurityIDSource	4	ISIN
15	Currency	EUR	Along with ISIN uniquely identifies Instrument

1021	MDBookType	99	VBBO
268	NoMDEntries	4	
269	MDEntryType	0	Bid
278	MDEntryID	1234VQB02	Unique identifier for buy VWAP buy price at “RMS”
453	NoPartyIDs	1	Entry is a quote
448	PartyID	RMS	
447	PartyIDSource	C	PartyID is an Equiduct assigned mnemonic
452	PartyRole	1	Party is the executing firm
270	MDEntryPx	22.45	Volume Weighted Average Price for 400 shares.
271	MDEntrySize	400	Number of shares, calculated by Equiduct as representing a retail size order.
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
276	QuoteCondition	I	Price is indicative for pre-trade transparency purposes.
269	MDEntryType	1	Offer
278	MDEntryID	1234VQA01	Unique identifier for VWAP offer price at “SMS”
453	NoPartyIDs	1	Entry is a quote
448	PartyID	SMS	
447	PartyIDSource	C	PartyID is an Equiduct assigned mnemonic
452	PartyRole	1	Party is the executing firm
270	MDEntryPx	22.4863	Volume Weighted Average Price for 800 shares.
271	MDEntrySize	800	Number of shares, calculated by Equiduct as representing a standard market size order.
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
276	QuoteCondition	I	Price is indicative for pre-trade transparency purposes.
269	MDEntryType	1	Offer
278	MDEntryID	1234VQA02	Unique identifier for VWAP offer price at “RMS”
453	NoPartyIDs	1	Entry is a quote
448	PartyID	RMS	
447	PartyIDSource	C	PartyID is an Equiduct assigned mnemonic
452	PartyRole	1	Party is the executing firm
270	MDEntryPx	22.4825	Volume Weighted Average Price for 400 shares.
271	MDEntrySize	400	Number of shares, calculated by Equiduct as representing a retail size

			order.
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
276	QuoteCondition	I	Price is indicative for pre-trade transparency purposes.
269	MDEntryType	0	Bid
278	MDEntryID	1234VQB01	Unique identifier for buy VWAP buy price at “SMS”
453	NoPartyIDs	1	Entry is a quote
448	PartyID	SMS	
447	PartyIDSource	C	PartyID is an Equiduct assigned mnemonic
452	PartyRole	1	Party is the executing firm
270	MDEntryPx	22.4494	Volume Weighted Average Price for 800 shares.
271	MDEntrySize	800	Number of shares, calculated by Equiduct as representing a standard market size order.
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change
276	QuoteCondition	I	Price is indicative for pre-trade transparency purposes.

Price Change

Updates to the VBBO prices are communicated in the same way as updates to quotes on the hybrid book. For example, a change in a price from one of the reference markets that changed the SMS calculated buy price would be communicated as follows.

Tag	Name	Value	Description
35	MsgType	X	Market Data Incremental Refresh
1180	ApplID	<ApplID>	
1181	ApplSeqNum	<ApplSeqNum>	64bit number
1350	ApplLastSeqNum	<ApplLastSeqNum>	
1021	MDBookType	99	VBBO
268	NoMDEntries	1	
279	MDUpdateAction	1	Change
269	MDEntryType	0	Bid
278	MDEntryID	1234VQB01	Unique identifier for VWAP buy price calculated for a “SMS” number of shares can be used to find the entry in the book to update.
270	MDEntryPx	22.4498	New buy price
272	MDEntryDate	<UTCDateOnly>	Date of latest change
273	MDEntryTime	<UTCTimeOnly>	Time of latest change

Appendix B: Custom FIX tags and values

Additional information not provided for in the current FIX 4.4 specification is communicated using custom FIX tags and values. Where possible tags already registered with the FPL were utilised.

Tag	Field Name	Type	Comments
10003	PartnerExUpdateAction	Char	Valid Values: 1 = Amend 2 = Halt 3 = Resume
10002	PartnerExReqID	String	Optional identifier of request or change to PartnerEx relationship.
10005	PartnerExPriority	Int	Integer priority value from 1 (highest) to 99 (lowest). If the priority is changed to that of another relationship, then that relationship and all below will be moved down. NOTE: Only the PartnerEx Customer of the relationship can adjust this parameter. Will not be sent when the message is destined for the PartnerEx Provider
10004	PartnerExStatus	Char	Status of the PartnerEx relationship. Valid values: 0 = OK 1 = Suspended 2 = Deleted 3 = Halted 4 = Unknown Relationship
10006	PartnerExFeeSplit	Int	Deprecated, will be removed in the next release. Percentage of the Equiduct PartnerEx trading fee that the PartnerEx Provider is willing to pay. The value should be an integer in the range 0 to 100. NOTE: Only the PartnerEx Provider to the relationship can adjust this parameter.
10007	SMSQty	Int	The number of shares as determined by Equiduct (based on the € value CESR defined Standard Market Size - SMS) for which an Equiduct VBBO will be calculated
10008	RMSQty	Int	The number of shares as determined by Equiduct (based on the € value CESR defined Retail Market Size - RMS) for which an Equiduct VBBO will be calculated
10010	MarketSegmentID	String	"PARTNEREX" "HYBRID" "TRADE REPORTING"
10011	PartnerExID	String	Unique identifier for the PartnerEx relationship.
10012	PartnerExHaltStatus	Char	0 = OK (Relationship not halted) 1 = PartnerEx Relationship halted by customer 2 = PartnerEx Relationship halted by provider 3 = Relationship halted by both parties.

10013	PartnerExProviderSide	Char	Whether the message applies to a Buy side, Sell side or Both sided PartnerEx relationship. 0 = Both 1 = Buy 2 = Sell N.B. Default is Both. Here the Side refers to the PartnerEx Provider Side. i.e. a Buy side relationship is for Sell orders and a Sell side relationship is for Buy Orders.
10015	BuyQuoteID	String	Identifies the buy side for the quote in the ITCH market data feed. This id is assigned when the quote is created and will remain unchanged throughout the trading day. A new id will automatically be assigned at the start of each trading day.
10016	SellQuoteID	String	Identifies the buy side for the quote in the ITCH market data feed. This id is assigned when the quote is created and will remain unchanged throughout the trading day. A new id will automatically be assigned at the start of each trading day.
1166	QuoteMsgID	String	Quote issuer assigned identifier for this quote message, must be unique for every submission of a quote.
6138	TickSize	Price	Minimum permitted price change. See Equiduct Market Configuration document for details of the tick size ranges in use, the value provided here is the applicable tick size at the close of the previous trading day.
9816	TickMultiplier	Int	Number of ticks applied to bid and offer price to widen the bid or offer price, as appropriate, when the auto quote refresh function is triggered.
9871	RefeshSize	Int	Minimum Quotation Size (MQS). The number of shares that a quote will be refreshed to by the auto quote refresh mechanism.
9938	ClearingHandlingType	Int	Usage depends on the clearing and Settlement structure in place for the Instrument. Indicates the pre-posting and give-up action to be taken by the clearing system when a trade has occurred.

Some standard FIX tags have been extended to meet the specific needs of the Equiduct Market Model.

Tag	Field Name	Type	Comments
269	MDEntryType	char	I = Instrument Status

277	TradeCondition	String	Populated when MDEntryType = Trade (2). Equiduct Trade Type identifier. If multiple conditions apply then identifier will be assigned in the priority order listed below (highest priority first). Valid values: OC = Opening Cross Trade CC = Closing Cross Trade CT = Cancelled Trade AU = Auction Trade BE = Best Execution (PartnerEx) Trade AT = Hybrid Trade LP = Trade Report from Previous Day LT = Late Trade Report DT = Trade Report subject to conditions other than current market price NT = Off-book, on-Exchange Trade Report
297	QuoteStatus	Char	32 = Unsolicited Quote Replenishment
567	TradSesStatusRejReason	Int	100 = Duplicate TradSesReqID 101 = Unknown SecurityExchange 102 = Unknown MarketSegmentID 103 = Unsupported SubscriptionRequestType
574	MatchType	String	Identifies the trading mechanism the Execution Report relates to. Valid values: HYB = Hybrid order book execution PEX = PartnerEx execution
1021	MDBookType	Int	0 = Trade (Time & Sales) 99 = VBBO

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