

EQUIDUCT

ITCHMD Specification 1.6 – November 2011

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1 INTRODUCTION

1.1 DOCUMENT PURPOSE

This document describes how to programmatically access the Equiduct ITCHMD feed for Equiduct Market Data.

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/>

1.3 RELATED DOCUMENTS

TBD

1.4 REVISION HISTORY

Version	Date Issued	Comment
• V1.0	October 2009	Initial Release
• V1.1	February 2010	Added support for Equiduct VBBO
• V1.2	June 2010	Updated document to reflect UMTF symbology changes
• V1.3	November 2010	Added new values for field Side in Trade message for Uncrossing trades and Trade Reports
• V1.4	January 2011	Added a description for the format of the Order ID field which is applicable for VBBO prices
• V1.5	February 2011	Added support for Equiduct Consolidated Tape
• V1.6	May 2011	Added long-form ITCH messages for Consolidated Tape

2 FUNCTIONAL OVERVIEW

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

In summary the Equiduct ITCHMD Interface allows external systems to connect to Equiduct to receive:

1. Full Hybrid book depth (Orders and Quotes)
2. Equiduct trades (including crossing and auction trades and trade reports)
3. Instrument (security) trading status information
4. Equiduct VBBO (pre-trade transparency for PartnerEx)
5. Consolidated pan-European Order Book (Equiduct Consolidated Tape)
6. Consolidated pan-European Trades (Equiduct Consolidated Tape)

In general the Equiduct ITCHMD feed specification and behavior is consistent with the ITCH-related feeds delivered by European MTFs.

3 ITCHMD SESSION PROTOCOL

An ITCHMD session is built on top of a standard TCP/IP connection. Message exchange consists of unsequenced session level messages and sequenced application level messages. Sequenced messages can be recovered/replayed in failure scenarios.

3.1 MESSAGE FORMAT

ITCHMD messages are fixed-length sequences of ASCII bytes.

Certain messages exist in a standard form and an alternative 'long form'. Long form messages are generated automatically when the price or quantity value exceed those supported by the standard messages. Note that at present long form messages are used only for the Consolidated Tape.

- Text (alphanumeric) fields are padded on the right with spaces up to their specified field width.
- Integer fields are padded on the left with spaces.
- Price fields are sent as integers with an implied decimal point; standard prices are ten digits with the implied decimal point after the sixth digit (i.e. four decimal places). Long form prices are nineteen digits with the implied decimal point after twelve digits.
- Timestamp fields are integers, giving the number of milliseconds elapsed since midnight UTC.

3.2 ORDER/QUOTE/TRADE IDENTIFICATION

The ITCHMD feed publishes 12-character alphanumeric identifiers for Orders/Quotes and for Trades. These identifiers are globally unique for a given trading day.

Note: The OrderIDs used for Equiduct VBBO prices will have "RMS" or "SMS" as the first three characters as applicable.

3.3 SYMBOLOGY

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. For example: VODI, FTEp, VOWd.

4 SESSION LEVEL MESSAGES

4.1 INBOUND

Messages sent from client applications to the ITCHMD server.

4.1.1 LOGIN REQUEST

LOGIN REQUEST				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	"L"	
• Username	1	6	Text	
• Password	7	10	Text	
• Session ID	17	10	Text	If blank this indicates a request for the <i>current</i> session. Otherwise should contain the session ID from a previous login session.
• Sequence #	27	10	Integer	Requested starting sequence number: 0 - current system sequence (no recovery) 1 – start-of-day (all messages) N – replay starting at N
• Terminator	37	1	0x0A	

4.1.2 LOGOUT REQUEST

There is no response to the Logout Request message, upon receipt the server will drop the connection automatically.

LOGOUT REQUEST				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	"O"	
• Terminator	1	1	0x0A	

4.1.3 HEARTBEAT

Client applications should send periodic heartbeats to Equiduct to maintain their session. If the ITCHMD feed observes that a client has not sent a heartbeat for more than fifteen seconds it may assume the client is no longer listening and drop the connection.

HEARTBEAT				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	"R"	
• Terminator	1	1	0x0A	

4.1.4 DEBUG MESSAGE

Can be used for testing and troubleshooting and will be ignored by the ITCHMD server.

DEBUG MESSAGE				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	“+”	
• Text	1	Variable	Text	Free form text
• Terminator	Variable	1	0x0A	

4.1.5 OUTBOUND

Messages sent to client applications from the ITCHMD server.

4.1.6 LOGIN ACCEPTED

LOGIN ACCEPTED				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	“A”	
• Session ID	1	10	Text	Current session for this connection
• Sequence #	11	10	Integer	Sequence number for next sequenced message to be received
• Terminator	21	1	0x0A	

4.1.7 LOGIN REJECTED

LOGIN REJECTED				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	“J”	
• Reason	1	1	Text	Reason for login failure: A – Invalid username/password S – Invalid session ID requested
• Terminator	2	1	0x0A	

4.1.8 HEARTBEAT

HEARTBEAT				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	“H”	
• Terminator	1	1	0x0A	

4.1.9 DEBUG MESSAGE

Can be used for testing/troubleshooting. Should be ignored by client applications.

DEBUG MESSAGE				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	“+”	
• Text	1	Variable	Text	Free form text
• Terminator	Variable	1	0x0A	

4.1.10 SEQUENCED MESSAGE

Sequenced data packets are used to transmit market data information and are reliable in that they can be recovered after a disconnection. As the underlying transport is sequenced and reliable (TCP/IP) there is no need for explicit sequence numbers – the first message for a given session ID has implied sequence number one and this increments for each subsequent message.

SEQUENCED DATA				
Field	Offset	Length	Type/Value	Comments
• Message type	0	1	"S"	
• Data	1	Variable	ASCII text	Message body
• Terminator	Variable	1	0x0A	Always follows the message body

5 MARKET DATA MESSAGES

Market Data messages are sequenced messages sent from ITCHMD to client applications to communicate changes in the Equiduct book, trades etc.

Note that the *ORDER EXECUTED* message is only applicable for the Equiduct Hybrid Book, and that only *ADD ORDER*, *ORDER CANCEL* and *INSTRUMENT TRADING STATUS* messages are applicable for Equiduct VBBO.

5.1 SYSTEM EVENT

This message signals an event which affects the entire Equiduct trading platform.

SYSTEM EVENT				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"S"	
• Event code	9	1	Text	"S" – Start-of-day (first message of the day) "E" – End-of-day (last message of the day)
SYSTEM EVENT				

5.2 ADD ORDER

ADD ORDER				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"A"	
• Order ID	9	12	Text	Order ID, globally unique for a given day
• Side	21	1	Text	"B" – Buy "S" – Sell
• Quantity	22	6	Integer	Visible order quantity
• Instrument	28	6	Text	e.g. VODI, RDSAa
• Price	34	10	Price	
• Display flag	44	1	Text	"Y" – Hybrid book "N" – Equiduct VBBO, Consolidated Tape

5.3 ADD ORDER (LONG FORM)

ADD ORDER (LONG)				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"a"	
• Order ID	9	12	Text	Order ID, globally unique for a given day
• Side	21	1	Text	"B" – Buy "S" – Sell
• Quantity	22	10	Integer	Visible order quantity

• Instrument	32	6	Text	e.g. VODI, RDSAa
• Price	38	19	Price	
• Display flag	57	1	Text	“Y” –Hybrid book “N” – Equiduct VBBO, Consolidated Tape

5.4 ORDER EXECUTED

ORDER EXECUTED				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	“E”	
• Order ID	9	12	Text	Identifier of the Order which has been partially or fully traded
• Shares traded	21	6	Integer	
• Execution ID	27	12	Text	Day-unique trade identifier

5.5 ORDER EXECUTED (LONG FORM)

ORDER EXECUTED (LONG)				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	“e”	
• Order ID	9	12	Text	Identifier of the Order which has been partially or fully traded
• Shares traded	21	10	Integer	
• Execution ID	31	12	Text	Day-unique trade identifier

5.6 ORDER CANCEL

Used when the visible quantity of an Order is decreased or the Order is removed from the book. Note that once an Order is removed from the book the corresponding ID becomes available for re-use and so may be sent in a new *Add Order* message.

ORDER CANCEL				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	“X”	
• Order ID	9	12	Text	Identifier of the Order which has been cancelled or had a quantity decrease
• Quantity decrement	21	6	Integer	Number of shares removed – will be equal to the Order quantity for a cancellation

5.7 ORDER CANCEL (LONG FORM)

ORDER CANCEL (LONG)				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"x"	
• Order ID	9	12	Text	Identifier of the Order which has been cancelled or had a quantity decrease
• Quantity decrement	21	10	Integer	Number of shares removed – will be equal to the Order quantity for a cancellation

5.8 TRADE

The Trade message is sent for on-Exchange executions which do not correspond to a visible order, for example auction trades and off-book, on-Exchange trade reports.

This message is also used to report trades for the Consolidated Tape.

TRADE				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"p"	
• Order ID	9	12	Text	Non-visible order identifier
• Side	21	1	Text	"B" – On-book trade (buy side aggressor) "S" – On-book trade (sell side aggressor) "A" – Auction trade "O" – Opening cross trade "C" – Closing cross trade "U" – Uncrossing trade "N" – Off-book, on-Exchange Trade Report "L" – Late Trade Report "P" – Trade Report from previous day "D" – Trade Report subject to conditions other than current market price "T" – Consolidated Tape trade
• Shares traded	22	6	Integer	
• Instrument	28	6	Text	
• Price	34	10	Price	Trade price
• Execution ID	44	12	Text	Day-unique trade identifier

5.9 TRADE (LONG FORM)

TRADE (LONG)				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"p"	

• Execution ID	9	12	Text	Non-visible order identifier
• Side	21	1	Text	"B" – On-book trade (buy side aggressor) "S" – On-book trade (sell side aggressor) "A" – Auction trade "O" – Opening cross trade "C" – Closing cross trade "U" – Uncrossing trade "N" – Off-book, on-Exchange Trade Report "L" – Late Trade Report "P" – Trade Report from previous day "D" – Trade Report subject to conditions other than current market price "T" – Consolidated Tape trade
• Shares traded	22	10	Integer	
• Instrument	32	6	Text	
• Price	38	19	Price	Trade price

5.10 TRADE CANCEL

TRADE CANCEL				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"B"	
• Execution ID	9	12	Text	Identifier of trade which has been cancelled (broken)

5.11 INSTRUMENT TRADING STATUS

INSTRUMENT TRADING STATUS				
Field	Offset	Length	Type/Value	Comments
• Timestamp	0	8	Integer	
• Message type	8	1	"H"	
• Instrument	9	6	Text	
• Trading status	15	1	Text	"H" – Halted "T" – Trading "A" – Auction* * Not applicable for Equiduct VBBO or Consolidated Tape
• Reason	16	4	Text	TBD