

Equiduct

ITCHMD Specification

1.1

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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

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. Hybrid trades (including crossing and auction trades)
3. PartnerEx trades
4. Instrument (security) trading status information
5. Equiduct VBBO (pre-trade transparency for PartnerEx)

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.

- 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 (ie four decimal places).
- Timestamp fields are integers, giving the number of milliseconds elapsed since midnight GMT.

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.

3.3 SYMBOLOGY

Standard Equiduct instrument symbols are limited to a maximum eight characters and always contain the trading currency as the last three characters, for example **VODGBX** or **RDSAEUR**. ITCHMD symbols are limited to six characters for compatibility reasons, and are formed by truncating the Equiduct symbol to the first six characters. For example **VODGBX** and **RDSAEU**.

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 hearbeats 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	

4.2 OUTBOUND

Messages sent to client applications from the ITCHMD server.

4.2.1 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	

4.2.2 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	

4.2.3 HEARTBEAT

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

4.2.4 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	

4.2.5 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 only *ADD ORDER*, *CANCEL ORDER* 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)

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. VODGBX, RDSAEU
Price	34	10	Price	
Display flag	44	1	Text	"Y" – Hybrid book "N" – Equiduct VBBO

5.3 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

5.4 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

5.5 TRADE

The *Trade* message is sent for executions which do not correspond to a visible order, for example Equiduct *PartnerEx* trades and auction trades.

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" – PartnerEx trade (buy order) "S" – PartnerEx trade (sell order) "A" – Auction trade "O" – Opening cross trade "C" – Closing cross 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

5.6 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)

5.7 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
Reason	16	4	Text	TBD