



BATS Europe DROP Specification

Version 1.3
1 July 2011

BATS Trading Limited is authorised and regulated by the Financial Services Authority. BATS Trading Limited is a wholly-owned subsidiary of BATS Global Markets, Inc. and is a company registered in England and Wales with Company Number 6547680 and registered office at 25 Cophall Avenue, London EC2R 7BP. This document has been established for informational purposes only. None of the information concerning the services or products described in this document constitutes advice or a recommendation of any product or service. To the extent that the information provided in this document constitutes a financial promotion as defined by section 21 of the Financial Services and Markets Act 2000, it is only directed at persons who qualify as a Professional Client or Eligible Counterparty. Persons who do not qualify should not act or rely upon it.

Contents

1 Overview	3
2 Configuration	3
3 Protocol	3
4 Replaying from a Specified Line Number	3
5 Heartbeats	4
6 Data Types	4
7 Trade Message Format	4
8 Support	6
9 Revision History	6

1 Overview

BATS Europe (hereafter “BATS”) uses a variation of the DROP protocol to provide realtime information about executions. A FIX protocol implementation is also available; see the BATS Europe FIX Specification for additional information.

DROP cannot be used to enter orders. For order entry, refer to the BATS Europe FIX Specification.

Note that the field layout is slightly different than similar protocols used by other markets, including BATS Exchange.

2 Configuration

DROP is typically used by clearing firms or Participants to monitor their trading activity.

With proper authorisation, a single DROP session can be used to obtain execution information about multiple BATS Participants, allowing a service bureau configuration.

For redundancy, multiple DROP hosts can be configured to send the same information about the same set of Participants.

3 Protocol

DROP is a carriage return/line feed (CR/LF) terminated protocol. The client connects to an assigned host and port using a TCP/IP socket. After a successful connection, the client sends an assigned password followed by a CR/LF.

The DROP host authenticates the password and begins sending fixed length, comma delimited execution information to the client. Each line reflects a single execution and is terminated with a CR/LF.

Once the DROP host has sent all previous executions, the connection remains open but idle until the next new execution is sent by the host. After initial replay, each execution is sent as quickly as possible in realtime. If the client is slow in reading executions, the executions are queued and delivered in sequence as fast as the client can read them.

An empty line containing only a CR/LF marks the end of the trading day.

An empty line from a client which only contains a CR/LF represents a logout request. The DROP host will then close the connection and wait for a new connection.

The protocol can be used manually with a standard Telnet client. Using a Telnet client, a user could log into a DROP port, download execution information, log out, and then directly import the comma-separated execution information into a spreadsheet or database application.

4 Replaying from a Specified Line Number

If a connection is lost between a DROP host and its client, the client can reconnect and request the host begin transmitting with a specific line number using the following login format:

```
password[,line number]
```

where `password` is the assigned client password and `line number` is the optional line number at which the host will begin transmission. The login must be terminated with a CR/LF. If the optional line number is not specified, the DROP host will begin transmission with the first trade for the current day (line number one). The client application must count incoming lines and request the next expected line on reconnect to avoid duplicate transmission of execution data.

5 Heartbeats

A heartbeat message should be sent from the DROP client to the server every ten seconds. This will ensure the client is notified of connectivity interruptions and network timeouts. The heartbeat sent to the DROP server must have the following format:

```
H\r\n
```

6 Data Types

Data Type	Description
Numeric	A string of ASCII digits, right justified, and zero filled on the left.
Alphanumeric	A string of ASCII characters (33–126), left justified, and space padded on the right.
Base 36 Numeric	A string of ASCII numbers and letters (A–Z, 0–9), representing base 36 digits, right justified and zero filled on the left. Typically used for Order IDs and Execution IDs.
Alpha	A string of ASCII letters (A–Z), left justified and space padded on the right.
Price $x.y$	Decimal with x whole number digits followed by y decimal digits. The whole number portion is zero filled on the left; the decimal portion is zero filled on the right. The decimal point explicitly appears inside the price field. Note that this is slightly different from implementations on some other markets.
Timestamp	A string of ASCII numbers (0–9) representing the whole number of milliseconds past midnight London time, right justified and zero padded on the left, with no decimal point.
Order ID	A 12 character base 36 numeric order ID ¹ , followed by a “.” followed by a 2 character base 36 number which indicates the number of times the order was modified.

7 Trade Message Format

After login, the client will receive a series of Trade Messages from the host in realtime. Each Trade Message is fixed format, comma delimited, and CR/LF terminated ASCII text.

Field Name	Offset	Length	Type	Sample	Description
Timestamp	0	9	Timestamp	12345.123	The time the trade occurred on BATS, accurate to the millisecond
Sender Comp ID	10	4	Alphanumeric	ABCD	Sending firm
Sender Sub ID	15	4	Alphanumeric	0001	The firm port identifier where the order originated
Clearing Firm	20	4	Alphanumeric	WXYZ	The clearing firm identifier
User	25	4	Alphanumeric	A001	User defined pass through value to distinguish trading activity. Matches FIX <i>ClearingAccount</i> (440)

¹This order ID matches the order ID as seen on FIX, PITCH, and Multicast PITCH.

Client Order ID	30	24	Alphanumeric	j4Ig000T00	
Order ID	55	15	Order ID	1CW7A0000001.02	Day-unique order identifier assigned by BATS
Execution ID	71	12	Base 36 Numeric	12W7A0000001	Day-unique execution identifier assigned by BATS to this execution
Symbol	84	6	Alpha	VOD1	The stock symbol. This is always in BATS/Uniform Symbology.
Side	91	1	Alpha	B	The side of the execution. B = Bought S = Sold
Price	93	11	Price 6.4	000130.5000	Execution price
Shares	105	8	Numeric	00082000	Number of shares executed
Capacity	114	1	Alpha	P	FIX <i>OrderCapacity</i> (47) value
Liquidity	116	1	Alpha	A	A = Added R = Removed X = Routed
Clearing Method	118	1	Alpha	Q	Not used on BATS Europe.
MTF Access Fee	120	12	± Price 5.5	+99999.99999	(+) Fee or (-) rebate for the entire execution based on BATS access fee policies
Participant ID	133	4	Alphanumeric	ABCD	BATS assigned Participant ID

8 Support

Please email questions or comments regarding this specification to tradedeskeurope@batstrading.com.

9 Revision History

6 October 2008	Version 1.0 Initial BATS Europe version.
4 March 2010	Version 1.1 Updated layout for consistency. Corrected terminology and symbology to match European platform.
15 April 2010	Version 1.2 Message format will change 28 May 2010 to allow for larger order sizes.
1 July 2011	Version 1.3 Removed pre-28 May 2010 message format.
