BATS Europe
Reference Data Specification

Version 1.3
5 March 2010

Contents

1 Overview

This document describes the file formats of BATS' reference data files. These files describe the symbols tradable on BATS, including ISIN, currency, tick sizes, and more. The files are formatted in simple comma-separated value (CSV) format, making them easy to parse or view in a spreadsheet program such as Microsoft Excel.

1.1 Availability

Files are available by 7:00am London time prior to trading. Files are published for both the BATS certification and production environments.

1.2 Location

Files are available on the BATS public website via HTTP.

Production:

Symbol data	`http://www.batstrading.co.uk/resources/symbollist/BATSSymbols-PROD.csv`
Tick sizes	`http://www.batstrading.co.uk/resources/symbollist/BATSTicks-PROD.csv`

Certification:

Symbol data	`http://www.batstrading.co.uk/resources/symbollist/BATSSymbols-CERT.csv`
Tick sizes	`http://www.batstrading.co.uk/resources/symbollist/BATSTicks-CERT.csv`

2 Symbol File

The symbol file consists of a *descriptor*, a *heading*, and many *data* rows.

2.1 Descriptor

The descriptor line gives information about the file, such as the environment (CERT or PROD) for which it was created and the date and time when it was created. This line is represented with comma-separated key/value pairs.

Key	Type	Value Interpretation
`environment`	String	The environment for which the file was generated. Allowed values are `CERT` or `PROD`.
`created`	Date	The date on which the file was created. Expressed in `YYYY-MM-DD` format.
`time`	Time	The time at which the file was created. Expressed in `HH:MMZ` format; "Z" indicates the time is in UTC.

An example descriptor for a certification file created on 1 October 2008 at 6:25am UTC:

```
environment=CERT,created=2008-10-01,time=06:25Z
```

It is recommended that parsers ignore new keys which are added over time.

2.2 Heading and Data

The heading line describes the format of the data rows which will follow. To aid in backward compatibility, columns will never be removed or reordered. New columns, however, may be added. It is recommended that parsers be able to ignore new columns which are added over time.

Column Name	Type	Value Interpretation
`company_name`	String	Name of the company. Human-readable.
`bats_name`	String	BATS/Uniform Symbology symbol for the symbol. May contain digits and lower case letters.
`isin`	String	ISIN
`currency`	String	Traded currency. Stocks traded in pence will be denoted `GBX`.
`mic`	String	Market identification code. For example, `XLON`.
`reuters_exchange_code`	String	The Reuters exchange code. For example, `L` or `PA`.
`lis_local`	Notional Value	The MiFID large in scale value. Orders with a notional value less than this value must be displayed (i.e., cannot be hidden). Expressed in traded currency. For example, for GBX, this value is in pence.
`live`	Boolean	Either `t` or `f`. Symbol is only allowed for trading if market `t`.
`tick_type`	String	Name of the tick size banding used for this symbol. Refers to a definition in the BATS Ticks file.
`reference_price`	Numeric	The last price of the stock on BATS for the previous trading day. If the stock was not traded on BATS during the previous day, a suitable last price from an external venue will be used.
`bats_prev_close`	Numeric	The last price of the stock on BATS for the previous trading day. If the stock was not traded on BATS during the previous day, the close from the last day the stock was traded on BATS will be used. No value will be present if the stock has never been traded on BATS.

Example record for Vodafone Group:

```
Vodafone Group PLC,VODl,GB00B16GWD56,GBX,XLON,L,39721800,t,fese1,141.8,140.5
```

3 Ticks File

The ticks file describes the allowed minimum price increments in different price bands for each symbol. Much like a Symbol File, a Ticks File also begins with a descriptor and a heading, followed by rows which define the tick sizes.

3.1 Descriptor

The descriptor line gives information about the file, such as the environment (CERT or PROD) for which it was created and the date and time when it was created. This line is represented with comma-separated key/value pairs.

Key	Type	Value Interpretation
`environment`	String	The environment for which the file was generated. Allowed values are `CERT` or `PROD`.
`created`	Date	The date on which the file was created. Expressed in `YYYY-MM-DD` format.
`time`	Time	The time at which the file was created. Expressed in `HH:MMZ` format; "Z" indicates the time is in UTC.

An example descriptor for a certification file created on 1 October 2008 at 6:25am UTC:

```
environment=CERT,created=2008-10-01,time=06:25Z
```

It is recommended that parsers ignore new keys which are added over time.

3.2 Heading and Data

The heading line describes the format of the data rows which will follow. To aid in backward compatibility, columns will never be removed or reordered. New columns, however, may be added. It is recommended that parsers be able to ignore new columns which are added over time.

Column Name	Type	Value Interpretation
`tick_type`	String	Name of the tick size. One row will be present per tick band per tick type. `tick_type` column values in the Symbol File will match these values.
`min_price`	Numeric	The minimum price, inclusive, for this tick band. Prices at or greater than this value (up to, but not including the `min_price` of the next row), have the given `tick_size`.
`tick_size`	Numeric	The minimum price increment for this tick band. If this value is null, the price in `min_price` represents the *maximum* allowed price for order entry for this tick type.

The interpretation is best understood with an example. Here are the rows which, at the time of writing, defined the `eurozone` tick type:

```
eurozone,0.0010,0.0010
eurozone,10.0000,0.0050
eurozone,999999.9950,
```

The interpretation of these rows is as follows:

- The minimum price allowed for order entry would be 0.001.
- For prices greater than or equal to 0.001 but less than 10.0000, the allowed minimum price increment is 0.001.
- Prices greater than 10.00 have a minimum price increment of 0.005.

- The maximum allowed price for order entry is 999999.995.

Some tick types define a uniform minimum price increment regardless of price. For example, at the time of writing, the `tck_0010` tick type is defined as:

```
tck_0010,0.0010,0.0010
tck_0010,999999.9990,
```

This tick type allows a minimum price increment of 0.001 for all prices, with the minimum order price being 0.001 and the maximum order price being 999999.999.

4 Support

Please email questions or comments regarding this specification to `tradedeskeuropebatstrading.com`.

5 Revision History

1 October 2008	Initial draft version.
11 November 2008	Version 1.0. Updated text to note FSA authorisation.
28 January 2009	Version 1.1. Defined `time` field on the descriptor line of the symbol and tick files. Defined the `reference_price` field for symbols.
2 March 2010	Version 1.2. Cosmetic changes only. Added table of contents.
5 March 2010	Version 1.3. Defined the `bats_prev_close` field for symbols.