

TQ501 • TECHNICAL SPECIFICATION

Turquoise Equities Guide to Reference Data Services

ISSUE 1.6 • 12 OCTOBER 2010

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1 Introduction

1.1 Purpose

The purpose of this document is to provide an overview of the reference data services available on the Millennium Exchange platform once Turquoise migrate.

1.2 Readership

This document outlines the reference data services available on Millennium Exchange.

When read in conjunction with the message specifications it is intended that the document provide all of the details for Turquoise customers to develop to the new services.

This document is particularly relevant to trading and technical staff within Turquoise's member firms, information vendors and other market participants interested in receiving Turquoise reference data.

1.3 Document Series

This document is part of series of documents providing a holistic view of full trading and information services available from Turquoise post the migration to Millennium Exchange.

The current series of documents are set out below:

- TQ101 - Guide to Migration
- TQ102 - Connectivity Guide
- TQ201 - Trading Gateway (FIX 5.0)
- TQ202 - Post Trade Gateway (FIX 5.0)
- TQ203 - Drop Copy Gateway (FIX 5.0)
- TQ301 - Trading Gateway (Native)
- TQ401 - Level-2 ITCH Market Data
- **TQ501 - Guide to Reference Data Services (this document)**
- TQ601 - Guide to Certification

1.4 Document History

This document has been through the follow iterations:

Issue	Date	Description
1.0	08 July 2010	First issue of this document published via the Turquoise website and distributed to customers.
1.1	03 August 2010	Addition of FTP site details.
1.2	13 August 2010	Correction of Multicast ID field name. Addition of Reference Price field.
1.3	24 August 2010	Clarification of "Access to the service"
1.4	22 September 2010	Addition of alternative Instrument and Price Tick files. Correction of IP address for Access to the Service
1.5	23 September 2010	Clarification of IP address file structure
1.6	12 October 2010	Alteration of Reference Price definition

1.5 Enquiries

Please contact either Market Operations or your Technical Account Manager if you have any questions about the Millennium Exchange services outlined in this document. Market Operations can be contacted at:

- Telephone: +44 (0)20 7382 7676
- Email: market.operations@tradeturquoise.com

2. Reference Data Service

2.1 Calendar and Service hours

Market Reference Data files are available on published trading days. This data will be available starting from 06:00 a.m. UK time.

2.2 Access to the service

The Market Reference Data files can be downloaded via File Transfer Protocol (FTP) service. It will be possible to gain access to the FTP server via the Internet.

Site details are as follows:

Test:	213.52.196.3 (FTP/SFTP)
Production:	80.85.68.102 (SFTP) 80.85.68.103 (FTP)
Username:	public
Password:	tt5public82

Participants are recommended to regularly refresh their reference data set through regular downloads of the full reference files.

This service will also be made available via the Extranex network at a later date.

2.3 Service Features

The service provides a number of separate market reference data files needed to provide all the necessary data for the Turquoise market on Millennium Exchange. The files will be on the root directory in the CDS environment and in the folders described below in Production.

TYPE	FILE NAME	DIRECTORY
Instrument	YYYYMMDD_TRQX_Instrument	\symbol
Instrument Alternative	Tq_Eq_RefFile_YYYYMMDD	\symbol
Calendar	YYYYMMDD_TRQX_Calendar	\calendar
Price Tick	YYYYMMDD_TRQX_PriceTick	\tick
Price Tick Alternative	Tq_Eq_TickFile_YYYYMMDD	\tick

2.3.1 Data layout

The files of the format YYYYMMDD_TRQX are created in accordance with the following specifications:

File format	Csv
Fields delimiter	; (semicolon)
Decimal symbol	. (point)
Digit grouping symbol (thousands separator)	None
Date Fields format	yyyymmdd

The files of the format Tq_Eq_File_YYYYMMDD are continuing with the same content and format as from the Cinnober platform.

File format	Csv
Fields delimiter	, (comma)
Decimal symbol	. (point)
Digit grouping symbol (thousands separator)	None

The field lengths identified in the record layout below are maximum lengths. As the data is delimited, fields can be shorter than the maximum length defined.

Note: Turquoise may amend these values at anytime following one week's prior written notice. Any changes will be communicated via a Market Notice.

2.3.2 Key to Field Type

STRING	An alphanumeric field
ENUM	A look-up value against a table of options
F64	Floating point 64-bit number encoded as ASCII
I32	32-bit Integer number encoded as ASCII

2.4 Instrument File Record Layout

The following sections provide details on instrument data available within the service.

2.4.1 YYYYMMDD_TRQX_Instrument

Field	Type (Length)	Description								
Instrument ID	STRING (20)	Instrument ID, unique identifier across the system.								
Calendar ID	STRING (30)	Unique key used to link the instrument to the market calendar to be used. The details of the calendar are maintained in the Calendar file.								
Segment Code	STRING (4)	The code identifying the segment.								
Post Trade Parameter ID	STRING (30)	Not currently in use by Turquoise.								
Trading Parameter ID	STRING (30)	Unique key used to link the instrument to the Tick Size table to be used.								
ISIN Code	STRING (12)	The International Security Identification Number (ISIN). This will be in line with ISO 6186.								
Deletion Date	STRING (8)	Date on which the instrument will be deleted. Format yyyyymmdd. This field may be blank.								
First Trading Date	STRING (8)	Instrument's First Trading Date. Format yyyyymmdd.								
Instrument Status	ENUM	Whether the instrument is active for trading, suspended from trading or not available for trading (inactive). Possible values: <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Active</td> </tr> <tr> <td>1</td> <td>Suspended</td> </tr> <tr> <td>2</td> <td>Inactive</td> </tr> </tbody> </table>	Value	Meaning	0	Active	1	Suspended	2	Inactive
Value	Meaning									
0	Active									
1	Suspended									
2	Inactive									
Clearing Type	ENUM	Indicates whether the instrument is cleared or not. Possible values: <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Not Cleared</td> </tr> <tr> <td>1</td> <td>Cleared</td> </tr> </tbody> </table>	Value	Meaning	0	Not Cleared	1	Cleared		
Value	Meaning									
0	Not Cleared									
1	Cleared									
Delete Orders at EOD	ENUM	Delete orders from the order book at the End of the day (EOD) Possible values: <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> </tr> <tr> <td>1</td> <td>Yes</td> </tr> </tbody> </table>	Value	Meaning	0	No	1	Yes		
Value	Meaning									
0	No									
1	Yes									
Exchange Market Size	I32	Not currently in use by Turquoise.								
Min Reserve Order Value	F64	The minimum consideration value for an order to be hidden (Large In Scale).								
Minimum Order Size	F64	Not currently in use by Turquoise.								

Last Trading Day	STRING (8)	Not currently in use by Turquoise.												
Lot Size	F64	This field defines the size increment of an order entered by a participant. Orders may be entered only in multiples of the Order Lot Size for a particular instrument ID.												
Security Type	STRING (2)	Provides more granular groupings of instruments Possible values: <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>CO</td> <td>Exchange Traded Commodity</td> </tr> <tr> <td>CU</td> <td>Exchange Traded Currency</td> </tr> <tr> <td>DR</td> <td>Depository Receipt</td> </tr> <tr> <td>EQ</td> <td>Equity</td> </tr> <tr> <td>TF</td> <td>Exchange Traded Fund</td> </tr> </tbody> </table>	Value	Meaning	CO	Exchange Traded Commodity	CU	Exchange Traded Currency	DR	Depository Receipt	EQ	Equity	TF	Exchange Traded Fund
Value	Meaning													
CO	Exchange Traded Commodity													
CU	Exchange Traded Currency													
DR	Depository Receipt													
EQ	Equity													
TF	Exchange Traded Fund													
TIDM	STRING (4)	Not currently in use by Turquoise.												
Description	STRING (30)	This field is used to specify the name of a tradable instrument.												
SEDOL	STRING (7)	Not currently in use by Turquoise.												
ADT	F64	Used to define thresholds for hidden order entry.												
Currency	STRING (4)	This field contains the currency in which prices for a tradable instrument must be expressed. A list of all codes is contained in ISO 4217 - Codes for the representation of currencies and funds, except that, for SEAQ compatibility, GBX has been retained.												
Bid Status	ENUM	Not currently in use by Turquoise.												
DOL Indicator	ENUM	Not currently in use by Turquoise.												
DOL Section Number	STRING (4)	Not currently in use by Turquoise.												
Expiry Source	STRING (8)	Not currently in use by Turquoise.												
Issuer Code	STRING (6)	Not currently in use by Turquoise.												
Issuer Name	STRING (255)	Not currently in use by Turquoise.												
Normal Market Size	I10	Not currently in use by Turquoise.												
Ratio	STRING (8)	Not currently in use by Turquoise.												
Settlement Type	STRING	Not currently in use by Turquoise.												
Standard Market Size	I10	Not currently in use by Turquoise.												
Instrument Name	STRING (40)	Not currently in use by Turquoise.												

DOL Symbol	STRING (36)	Not currently in use by Turquoise.
Unit of Quotation	I10	Not currently in use by Turquoise.
Max Spread Floor	F64	Not currently in use by Turquoise.
Max Spread Percentage	F64	Not currently in use by Turquoise.
Country of Register	STRING (2)	This specifies the country of Register for a specific tradable instrument. This will be in line with ISO 3166.
Covered Warrant Strike Price	STRING (8)	Not currently in use by Turquoise.
Covered Warrant Expiry	STRING (8)	Not currently in use by Turquoise.
Sector	STRING (4)	Not currently in use by Turquoise.
Multicast ID	ENUM	This specifies the multicast channel through which market data for the instrument is broadcast.
Covered Warrant Strike Currency	STRING (TBC)	Not currently in use by Turquoise.
Covered Warrant Type	STRING (TBC)	Not currently in use by Turquoise.
Covered Warrant Style	STRING (TBC)	Not currently in use by Turquoise.
Reference Price	F64	The Reference Price used to calculate LIS and the starting point for Price Bands. This will be set to the Primary Market Last Trading Price subject to alterations due to corporate actions, etc. The Reference Price may be changed during the day subject to market movements.

2.4.2 Tq_Eq_RefFile_YYYYMMDD

Field	Type (Length)	Description
Name	STRING (30)	This field is used to specify the name of a tradable instrument.
Market ID	STRING (4)	MIC code
Market Name	STRING (30)	Full name of MIC
ISIN Code	STRING (12)	The International Security Identification Number (ISIN). This will be in line with ISO 6186.
Symbol	STRING (20)	Instrument ID, unique identifier across the system.

Currency	STRING (4)	This field contains the currency in which prices for a tradable instrument must be expressed. A list of all codes is contained in ISO 4217 - Codes for the representation of currencies and funds, except that, for SEAQ compatibility, GBX has been retained.								
Visibility	STRING (1)	This field will populate with either <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>Integrated only</td> </tr> <tr> <td>M</td> <td>Mid-Point only</td> </tr> <tr> <td>B</td> <td>Both integrated and mid-point books</td> </tr> </tbody> </table>	Value	Meaning	I	Integrated only	M	Mid-Point only	B	Both integrated and mid-point books
Value	Meaning									
I	Integrated only									
M	Mid-Point only									
B	Both integrated and mid-point books									
CSD	STRING (2)	This specifies the country of Register for a specific tradable instrument. This will be in line with ISO 3166.								
ADT	F64	Used to define thresholds for hidden order entry.								
LIS Limit	F64	The minimum consideration value for an order to be hidden (Large In Scale).								
Tick Table	STRING (30)	Unique identifier for the Price Tick that links the data in the file to other reference data files.								
Closing Price	F64	The Reference Price used to calculate LIS and the starting point for Price Bands. This will be set to the Primary Market Last Trading Price subject to alterations due to corporate actions, etc. The Reference Price may be changed during the day subject to market movements.								
Lower Limit	F64	Lower price band value for that tick size.								
Tick Size	F64	The code to identify the valid format in which prices can be entered/displayed. The price must be a multiple of this Tick Size.								

2.5 Calendar File Record Layout

The following sections provide details on calendar reference data available within the reference data service.

Field	Type (Length)	Description
Calendar ID	STRING (30)	Unique code used to identify the calendar. This code is used to link the calendar to the instrument.
Calendar Date	STRING (8)	Calendar Date, format yyyyymmdd.
Description	STRING (30)	Name used to identify the calendar.

Early Closing	ENUM	Whether the calendar allows early closing or not. Possible values: <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> </tr> <tr> <td>1</td> <td>Yes</td> </tr> </tbody> </table>	Value	Meaning	0	No	1	Yes
Value	Meaning							
0	No							
1	Yes							
Trading Allowed	ENUM	Whether Trading is allowed on this day. Possible values: <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> </tr> <tr> <td>1</td> <td>Yes</td> </tr> </tbody> </table>	Value	Meaning	0	No	1	Yes
Value	Meaning							
0	No							
1	Yes							

2.6 Price Tick File Record Layout

2.6.1 YYYYMMDD_TRQX_PriceTick

Field	Type (Length)	Description
Price Tick Table ID	STRING (30)	Unique identifier for the Price Tick that links the data in the file to other reference data files.
Decimals	I32	Maximum number of decimals supported by the Tick Structure.
Description	STRING (100)	Name used to identify the Price Tick.
Max Value	F64	Upper price band value for that tick size.
Min Value	F64	Lower price band value for that tick size.
Tick Value	F64	The code to identify the valid format in which prices can be entered/displayed. The price must be a multiple of this Tick Size.

2.6.2 Tq_Eq_TickFile_YYYYMMDD

Field	Type (Length)	Description
Tick Table	STRING (30)	Unique identifier for the Price Tick that links the data in the file to other reference data files.
Band	I32	Sequential line in the tick table
Lower Limit	F64	Lower price band value for that tick size.
Tick Size	F64	The code to identify the valid format in which prices can be entered/displayed. The price must be a multiple of this Tick Size.

3 Customer Testing

All customers using the Turquoise Customer Development Service (CDS) environment are encouraged to use the reference data files provided on our website here:

http://www.tradeturquoise.com/tq_resources.shtml > Millennium Exchange > TQ CDS Reference Files

Please note that these TQ CDS files will **not** be updated on a daily basis.

Please note the YYYYMMDD_TRQX files may not be accurate to the live trading environment before the first live date file (i.e. 20101004_TRQX)

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