

MIT401 – GUIDE TO REFERENCE DATA SERVICES

Issue 19
9 May 2025



**LONDON
STOCK
EXCHANGE**

Contents

Disclaimer	3
1.0 Introduction	4
1.1 Purpose.....	4
1.2 Readership.....	4
1.3 Document series	4
1.4 Document history	4
1.5 Enquiries	8
2.0 Reference data service	9
2.1 Calendar and service hours	9
2.2 Access to the service	9
2.3 Availability model	9
2.4 Service features	10
2.5 Intra-day changes	11
2.6 Daily delta files	11
2.7 Instrument file record layout.....	11
2.8 Calendar file record layout	18
2.9 Post-trade parameter file record layout.....	19
2.10 Trade type file record layout	20
2.11 Trading parameters file record layout	21
2.12 Price tick file record layout.....	22
2.13 Session parameters file record layout.....	22
2.14 Participant file record layout	23
2.15 Ex-marker status record layout.....	24
2.16 Market maker registration record layout	24
2.17 RFQ-enabled record layout	24
2.18 Values for trading session	25
2.19 MD5 checksum files.....	26
3.0 Guide to Secure File Transfer Protocol (SFTP)	27
3.1 Introduction	27
3.2 Service overview	27
3.3 Mandatory testing.....	27
3.4 Enablement.....	27
3.5 Connectivity	27
3.6 Automation	30

Disclaimer

London Stock Exchange has taken reasonable efforts to ensure that the information contained in this publication is correct at the time of going to press, but shall not be liable for decisions made in reliance on it. London Stock Exchange will endeavour to provide notice to customers of changes being made to this document, but this notice cannot be guaranteed. Therefore, please note that this publication may be updated at any time. The information contained in this publication and any other publications referred to herein are for guidance purposes only.

1.0 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.

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 London Stock Exchange customers to develop to the reference data services.

This document is particularly relevant to trading and technical staff within the Exchange's member firms, information vendors and other market participants interested in receiving London Stock Exchange 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 London Stock Exchange, post the migration to Millennium Exchange.

The current series of documents are set out below:

- MIT201 – Guide to new trading system
- MIT202 – Trading gateway (FIX 5.0) specification
- MIT203 – Native interface message specification
- MIT204 – Post-trade gateway (FIX 5.0) specification
- MIT205 – Drop Copy gateway (FIX 5.0) specification
- MIT304 – Regulatory news service specification
- **MIT401 – Reference data service specification (this document)**
- MIT501 – Guide to the customer testing services
- MIT502 – Guide to application certification
- MIT503 – Certification report
- MIT304 – Regulatory news service specification
- MIT701 – Guide to sponsored access
- MIT801 – Reject codes

This series principally covers non-regulatory information. It does not override or supersede the Rules of the London Stock Exchange, the AIM Rules or Admission and Disclosure Standards and is intended to be read in conjunction with these rules documents and the Millennium Exchange Parameters document.

1.4 Document history

This document has been through the following iterations:

Issue	Date	Description
1.0	1 February 2010	First issue of this document published via the Exchange's website and distributed to customers
2.0	29 February 2010	Updated to reflect some content and format changes
3.0	5 May 2010	Updated to further reflect content and delivery mechanism changes
4.0	11 June 2010	Updated with information on intra-day reference data changes and enhancements to some file content
5.0	19 July 2010	Updated with further information on field content. The following field has been removed from the instrument file: <ul style="list-style-type: none"> – Expiry source

Issue	Date	Description
6.0	15 September 2010	Updated to include guidance on accessing Secure File Transfer Protocol (SFTP) services and define in more detail delivery and format of files. 'Delete orders at EOD' field removed
6.1	11 October 2010	Updated to include the SFTP and FTP IP, and port details
7.0	3 December 2010	Seventh issue of this document published via the Exchange's website and distributed to customers
7.1	19 January 2011	Updated to rectify error in a field length in the instrument reference data file
8.0	23 May 2011	Updated to reflect minor changes highlighted
9.0	15 December 2011	Updated to support product enhancements being delivered as part of Functional Release Q1 2012
10.0	26 February 2013	Updated to clarify content of field in the Ex-marker file
10.1	22 March 2013	Amended to reflect the latest Millennium enhancements
10.1	5 April 2013	Update to Section 2.10 – Allow Named Orders – ENUM 1 changed to 2
11.0	5 July 2013	Amended to reflect the latest Millennium enhancements in section 2.16
11.1	26 July 2013	Further amendments to reflect the latest Millennium enhancements
11.2	14 August 2013	Amended contact details to sections 2.4 and 4.4. Change references for issue 11.1 also included
11.4	22 October 2013	Added clarity around 'Quote type' description in section 2.10 and 'Duration to auction' in section 2.12
11.5	12 June 2014	Amended section 2.16 to include index codes for SETSQX-RT market structure changes
11.6	31 October 2014	Amended to reflect rebranding of ITCH to MITCH
11.7	21 January 2015	<p>Section 2.6 'Instrument file record layout' has been amended to support cross order functionality, to remove references to FIX-FAST and to rename the ITCH Market Data Group to MITCH.</p> <ul style="list-style-type: none"> – One field renamed to <ul style="list-style-type: none"> – MITCH Market Data Group/AppID – Three fields removed <ul style="list-style-type: none"> – FIX-FAST Level 1 AppID – FIX-FAST Level 2 MBP AppID – FIX-FAST Level 2 MBO AppID – Four fields added <ul style="list-style-type: none"> – Cross Ord Bid Ask Spread % – Minimum BTF Quantity – Floor Price – Ceiling Price
11.8	16 June 2015	<p>The following changes have been made to aid clarity and to support the changes in Release 8.7:</p> <p>2.6 – Added new field 'Minimum Quantity at Touch'. Improved description for EMS</p> <p>2.16 – Improved/corrected trading cycle definition description for MSETS-OFIN OFLV, SETS-IOB, Standard off-book and Stand. off-book MFD. Added two new trading cycles for SETSqx with 'No market maker'. Added 'Session index' for regular trading 3 and periodic auction 3 in SETS-IDA cycle definition</p>

Issue	Date	Description
11.9	21 October 2015	<p>The following changes have been made to aid clarity and to support the changes in Release 8.7:</p> <p>2.10 – Amended the 'Quote type' field description to clarify that the Business Parameters document will determine whether an instrument supports quotes</p> <p>2.16 – Updated description for SETS-IDA cycle definition to include the new SETS L1 only intraday auctions</p>
11.10	10 May 2016	<p>The following changes have been made to aid clarity and to support the changes for the reference data server migration:</p> <p>2.2 – Updated the IP addresses and login credentials for the new reference data service</p> <p>2.3 – Added availability model</p> <p>2.19 – Added MD5 checksum files</p> <p>2.20 – Added a note about the parallel reference data service</p> <p>3.4, 3.5 – Clarified enablement and connectivity behaviour for the new reference data service</p>
11.11	16 August 2016	<p>The following changes have been made to aid clarity and to support the changes in Release 9.1:</p> <p>2.7 – 'Multicast channel ID' and 'Load ID' fields will no longer be populated. Added 'MiFIR identifier', 'MiFIR subclass', 'Ref price allowance (%)', 'RFQ price deviation %' and 'Min RFQ quantity' fields. Renamed field 'Minimum BTF quantity' to 'Minimum BTF quantity (*EMS)'. Renamed column 'MITCH Market Data Group/AppID' to 'Market Data Group'</p> <p>2.11 – Added 'RFQ type' field</p> <p>2.16 – Added 'RFQ enabled' field</p>
	09 November 2016	<p>The following changes have been made to aid clarity and to support the changes in Release 9.1:</p> <p>2.4, 2.6 – Added new entries for new 'RFQ enabled' file</p> <p>2.7 – Clarified 'Minimum BTF quantity' description. The field will now have been already multiplied by EMS. Renamed 'Min RFQ quantity (*EMS)' to 'Min RFQ quantity' since the value will have already been multiplied by EMS</p> <p>2.16 – Removed 'RFQ enabled' field</p> <p>2.17 – Added layout for the new 'RFQ enabled' file</p>
11.12	26 April 2017	<p>The following changes have been added to aid clarity, and also to clarify that off-book trade reporting will be moved to TRADEcho in June 2017:</p> <p>2.7 – Blanks will now be populated in the following columns for instruments which will only be available in TRADEcho: 'Min reserve order value', 'Max spread percentage', 'Max spread floor', 'Market data group', 'Post-trade parameter ID', 'Trading parameter ID'.</p> <p>Note that the information in the following columns is redundant for instruments which will only be available in TRADEcho and will be blanked in a future release: 'Clearing type', 'Exchange market size', 'Minimum order size', 'Lot size'.</p> <p>2.9 – Blanks will now be populated in the 'Price validation ratio' and 'Late trade time limit' columns. Renamed columns 'Post-trade parameter ID' to 'MIT Post-trade parameter ID', and 'Trade reporting model' to 'MIT trade reporting model'. Rows for post-trade parameters PT_S and PT_Z will be removed.</p> <p>2.10 – All rows which don't have short code 'AI', 'AC' or 'PC' will be removed</p> <p>2.20 – Removed section</p> <p>3.4, 3.5 – Clarified behaviour</p>

Issue	Date	Description
11.13	23 June 2017	<p>The following changes have been made to aid clarity and to support the changes in the Release 9.2 (MiFID II compliant) upgrade:</p> <p>2.7 – Replaced 'Min reserve order value' with 'Pre- trade LIS value (currency)'. Renamed 'ADT' to 'ADT (currency)'. Replaced 'Min RFQ quantity' with 'Minimum RFQ value (currency)'. The existing field 'Minimum BTF quantity' will now be populated blank.</p> <p>Added the following new fields to the end of the file: 'MIC', 'Liquid', 'ADT (EUR)', 'ADNT', 'NTW allowed', 'Price tick table ID', 'FISN', 'Max order value (currency)', 'Max BTF value (currency)', 'Max cross value (currency)', 'Max RFQ value (currency)', 'Notional currency', 'Price notation', 'Denominated par value'.</p> <p>2.10 – Clarified that 'Execution venue' will now be populated blank.</p> <p>2.11 – Added the following new fields to the end of the file: 'Price collar percentage', 'Auction price collar percentage', 'Sponsored user price collar percentage', 'Sponsored user auction price collar percentage'.</p>
11.14	28 July 2017	<p>The following changes have been made to aid clarity and to support the changes in the Release 9.2 (MiFID II compliant) upgrade:</p> <p>2.7 – Clarified 'Liquid' and 'FISN' field descriptions. Clarified 'Pre-trade LIS value (currency)' and 'Denominated par value' data types</p> <p>2.11 – Clarified 'Price tick table ID' field description</p>
11.15	01 August 2017	<p>The following changes have been made to aid clarity and to support the changes in the Release 9.2 (MiFID II compliant) upgrade:</p> <p>2.7 – Added a new value 'N/A' and changed the length of the 'NTW allowed' field</p>
11.16	7 November 2017	<p>2.7 – Possible values of 'MiFIR identifier' and 'MiFIR subclass' fields have been added</p> <p>2.7 – Clarified the data format of 'Warrant expiry' field</p>
11.16.1	24 August 2018	<p>2.18 – Section is updated to reflect the market structure changes for IOB trading service with effect from Monday 3 September 2018 in Production:</p> <p>New 'IOB-L1' and 'IOB-L1-EARLYCLOSE' trading cycles are added to 'SETS-IDA' section</p> <p>2.18 – New 'IOB-SC-L1' and 'IOB-SC-L1- early close' trading cycles are added for future use</p> <p>2.18 – The following updates have been done for clean-up purposes (no functional change):</p> <ul style="list-style-type: none"> – The table format is changed; the new column 'Trading cycle' is added – 'SETS-IOB' section – 'SETS-IOB', 'SETS-IOB – early close' are removed, missing 'IOB' and 'IOB early close' are added (however, they will be decommissioned on 3 Sep) – 'SETS-EDSP' section – 'NE OB NO-CAC', 'NE OB CAC' are added. The following are removed: 'SETS', 'SETS early close', 'MSETS SETS', 'MSETS SETS – early close', 'MSETS SETS NO CAC', 'MSETS SETS NO CAC early close' – 'SETS-IDA' section – 'SETS L1 EDSP' is removed – 'Old session index' column is removed – 'New session index' column is renamed to 'Session index' column <p>2.4.1 – Clarification added regarding End of Line (EOL) and character encoding standard format</p>
11.17	28 August 2018	<p>2.11 – Added new parameter: Auto RFQ Min no. of quotes</p> <p>2.18 – 'IOB' and 'IOB early close' are removed from SETS-IOB' section</p>
12.0	5 June 2019	<p>2.7 – Update existing 'RFQ price deviation %' to 'RFQ quote and execution price deviation threshold %'</p> <p>2.7 – Include new instrument parameter 'RFQ tick structure ID'</p> <p>2.7 – Include new instrument parameter 'Min auction RFQ quote value'</p>

Issue	Date	Description
13	25 March 2020	2.7 – Exchange market size: data type was corrected 2.7 – RFQ tick structure ID: description was amended for more clarity 2.4.2 – ‘Number’ data format was added 2.7 – Data format for ‘Exchange market size’ was corrected (no change to the file)
14	July 2020	2.15 The possible values for the Ex-marker code have been included
15	9 July 2020	1.3 – Removed reference to MIT601 2.1.2, 2.2.2, 2.3.2, 3.2.2, 3.4, 3.5 – Added details on new managed file transfer (MFT) connectivity access
15.1	20 August 2020	1.3, 2.2.1, 2.2.2, 3.5 – Removed connectivity references, please reference to MIT1001 – Connectivity guide 2.3.2 – Updated to reflect PDC, SDC file access Removed Unix and Windows commands
15.2	12 February 2021	Removed changes in relation to MFT migration 2.1, 3.2 Updated to reflect file availability time 2.5 Intra-day changes no longer notified via email
16	14 April 2021	2.13 The following updates have been done: – The reference is corrected in ‘Trading session’ field description – Four new fields have been added in the end of the file: 2nd, 3rd, 4th and 5th price monitoring extension fields
16.1	30 November 2021	2.7 – Removed ‘ZY’ as a valid value for ‘Country of register’
16.2	31 January 2022	2.7 – One new field ‘Professional Investor Only’ has been added at the end of the Instrument file
17	7 February 2022	Section 2.2. Data Centre migration. Added new IP addresses for the FTP/SFTP
17.1	10 May 2022	FTP access not supported in the new Data Centre. Section 2.2 SFTP Port amended to 22
17.2	05 October 2022	2.2 - Credentials to access the FTP/SFTP sites can be requested from Technical Account Management Team.
18.0	05 January 2024	Section 2.7 has been updated to indicate that any references to Cross/ BTF orders are no longer applicable to the LSE venue. <u>Release 1.23.3.0 changes</u> 2.7 - Market Data Group is no longer populated.
18.1	20 February 2024	Section 2.7 has been updated to indicate that NTW Allowed field is still applicable to the LSE venue.
19	9 May 2025	Section 2.7 has been updated to include XPVT as an Execution Venue

Within this document, where amendments have been made to the previous issue, these changes will be identified by highlighting the changes in red.

1.5 Enquiries

Please contact either the Technical Account Management Team or your Technical Account Manager if you have any questions about the Millennium Exchange services outlined in this document. Client Technology Services (UK) can be contacted at:

Telephone: +44 (0)20 7797 3939

Email: londontam@lseg.com

2.0 Reference data service

2.1 Calendar and service hours

Market reference data files will be made available Monday – Friday from 21:30 local market time, on the weekday prior to published trading days.

2.2 Access to the service

The market reference data files can be downloaded via both File Transfer Protocol (FTP) and Secure File Transfer Protocol (SFTP) service. Customers can access the FTP and SFTP server via existing Extranet, CMC and hosting connections. It will not be possible to access the service via internet connection.

Clients are expected to provide the source IP addresses of the FTP or SFTP request, along with the login credentials detailed below.

In addition to files that include the full reference data content, deltas from the previous day (adds, modifications and deletes) will be featured, and this will include an additional column to indicate the nature of the change – please refer to section 2.5 of this document. Intra-day changes files will be published as required – please refer to section 2.4 of this document.

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

The **Production primary** (PDC) service can be accessed at the following location:

Data Centre	Service	IP ADDRESS	PORT
Current	SFTP	194.169.8.42	58101
Current	FTP	194.169.8.42	21
New	SFTP	194.169.6.4	22

The **Production secondary** (SDC) service can be accessed at the following location:

Data Centre	Service	IP ADDRESS	PORT
Current	SFTP	194.169.8.43	58101
Current	FTP	194.169.8.43	21
New	SFTP	194.169.7.4	22

The **CDS** service can be accessed at the following location:

Data Centre	Service	IP ADDRESS	PORT
Current	SFTP	194.169.8.157	51101
Current	FTP	194.169.8.157	21
New	SFTP	194.169.6.36	22

The credentials to access all the services can be requested from London Stock Exchange Technical Account Management Team.

2.3 Availability model

The reference data servers will operate on a hot-hot configuration at our Primary Data Centre (PDC) and Secondary Data Centre (SDC). As reference data is readily available at both sites, clients can choose whether

they wish to retrieve the reference data from PDC and/or SDC. Clients can be simultaneously connected to both PDC and SDC.

2.4 Service features

The service provides a number of separate full market reference data files needed to provide all the necessary data for the London market on Millennium Exchange.

TYPE	FILE NAME
Instrument	YYYYMMDD_XLON_Instrument
Calendar	YYYYMMDD_XLON_Calendar
Post Trade Parameter	YYYYMMDD_XLON_PostTrade
Trade Type	YYYYMMDD_XLON_TradeType
Trading Parameter	YYYYMMDD_XLON_Trading
Price Tick	YYYYMMDD_XLON_PriceTick
Session Parameter	YYYYMMDD_XLON_Session
Participant	YYYYMMDD_XLON_Participant
Ex-Marker	YYYYMMDD_XLON_ExMarker
Market Maker Registrations	YYYYMMDD_XLON_MMRegistrations
RFQ Enabled	YYYYMMDD_XLON_RFQenabled

In addition to the daily full market reference data files, a daily delta file and intra-day changes files will be published.

2.4.1. Data layout

The files 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
End of line (EOL)	\r\n
Character encoding Standard	ISO-8859

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.

All files will contain a header for each field.

Note: The Exchange may amend these values at any time following one week's prior written notice. Any changes will be communicated via Service Announcement.

2.4.2. 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
Number (X, Y)	A numeric field X – total number of digits

Y – number of digits to the right of the decimal point

2.5 Intra-day changes

An intra-day change will be published via the production of a ‘changes’ file for each of the impacted data sets outlined in Section 2.3. Each file will be identical in format to the original daily file, with the exception of an additional field indicating if the change is an add (A), update (U) or delete (D). A ‘changes’ file can be identified by the addition of ‘_Changes_Timestamp’ to the original filename. The timestamp will be in format: HHMMSS.

The following items are anticipated to require republication on a frequent basis and result in the production of a changes file intra-day:

- Market maker registrations, withdrawals and re-instatements –
YYYYMMDD_XLON_MMRegistrations_Changes
- Bid status – YYYYMMDD_XLON_Instrument_Changes
- Ex-marker status – YYYYMMDD_XLON_ExMarker_Changes

In certain circumstances it may be necessary for the Exchange to publish other intra-day changes to reference data, beyond the scope of the three areas outlined above. In these situations, the same process will be followed with notification issued to the market confirming the change and the republished files.

2.6 Daily delta files

On a daily basis, a delta file will be published in parallel with the full daily reference file. Deltas from the previous day (adds, modifications and deletes) will be featured, and this will include an additional column to indicate the nature of the change.

The daily delta files will be published for each reference data file with the following naming format:

- Instrument – YYYYMMDD_XLON_Instrument_delta
- Calendar – YYYYMMDD_XLON_Calendar_delta
- Post Trade Parameter – YYYYMMDD_XLON_PostTrade_delta
- Trade Type – YYYYMMDD_XLON_TradeType_delta
- Trading Parameter – YYYYMMDD_XLON_Trading_delta
- Price Tick – YYYYMMDD_XLON_PriceTick_delta
- Session Parameter – YYYYMMDD_XLON_Session_delta
- Participant – YYYYMMDD_XLON_Participant_delta
- Ex Marker – YYYYMMDD_XLON_ExMarker_delta
- Market Maker Registrations – YYYYMMDD_XLON_MMRegistrations_delta
- RFQ Enabled – YYYYMMDD_XLON_RFQenabled_delta

Delta files will be published as blank if there are no changes from the previous day’s complete reference data file.

2.7 Instrument file record layout

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

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)	Unique key used to link the instrument to the post-trade parameters to be used. These details are contained in the ‘Post-trade parameters’ table. This field will be blank for instruments which will only be available in TRADEcho.
Trading Parameter ID	STRING (30)	Unique key used to link the instrument to the trading parameters to be used. These details are contained in the ‘Trading parameters’ table. This field will be blank for instruments which will only be available in TRADEcho.

Field	Type (length)	Description										
ISIN Code	STRING (12)	The International Security Identification Number (ISIN). This will be in line with ISO 6166.										
Deletion Date	STRING (8)	Date on which the instrument will be deleted. Format yyyymmdd. This field may be blank.										
First Trading Date	STRING (8)	Instrument's first trading date. Format yyyymmdd.										
Instrument Status	ENUM	Whether the instrument is active for trading, suspended from trading, halted for 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> <tr> <td>3</td> <td>Halt</td> </tr> </tbody> </table>	Value	Meaning	0	Active	1	Suspended	2	Inactive	3	Halt
Value	Meaning											
0	Active											
1	Suspended											
2	Inactive											
3	Halt											
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> <p>For instruments that will only be available in TRADEcho, the value should be ignored.</p>	Value	Meaning	0	Not Cleared	1	Cleared				
Value	Meaning											
0	Not Cleared											
1	Cleared											
Exchange Market Size	Number (12,0)	The Exchange market size (EMS) is set to show the minimum size a market maker must quote in an individual security for all executable and firm quotes. This value may also be used in conjunction with a multiplier to determine other parameters. For instruments that will only be available in TRADEcho, the value should be ignored.										
Pre-Trade LIS Value (Currency)	I32	The minimum consideration value for hidden orders. The pre-trade LIS threshold of the instrument will be applicable in the instrument's trading currency.										
Minimum Order Size	F64	Minimum order size allowed for that instrument. For instruments that will only be available in TRADEcho, the value should be ignored.										
Last Trading Day	STRING (8)	Last trading day of the instrument. Format yyyymmdd. This can also be blank.										
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. For instruments that will only be available in TRADEcho, the value should be ignored.										
Security Type	STRING (2)	Provides more granular groupings of instruments										
		<table border="1"> <tbody> <tr> <td>AI</td> <td>AUTOMATED INPUT FACILITY NOTIFICN</td> </tr> <tr> <td>AL</td> <td>ALLOTMENT LETTERS</td> </tr> <tr> <td>BD</td> <td>BONDS</td> </tr> <tr> <td>BG</td> <td>BULLDOGS</td> </tr> </tbody> </table>	AI	AUTOMATED INPUT FACILITY NOTIFICN	AL	ALLOTMENT LETTERS	BD	BONDS	BG	BULLDOGS		
AI	AUTOMATED INPUT FACILITY NOTIFICN											
AL	ALLOTMENT LETTERS											
BD	BONDS											
BG	BULLDOGS											

Field	Type (length)	Description
		BO BOND
		CF CLOSED FUNDS
		CN CONVERTIBLE
		CP COMMERCIAL PAPER
		CW COVERED WARRANTS
		DB Debenture
		DE UK Equity
		DR DEPOSITORY RECEIPTS
		EW EQUITY WARRANTS
		FB FOREIGN GOVERNMENT BONDS
		FC FINANCIAL CERTIFICATES
		FL FULLY PAID LETTER
		FR FLOATING RATE
		FS FOREIGN SHARES
		FT FOREIGN UNIT TRUSTS
		FU FUND UNITS
		FX FIX RATE
		GT GILTS
		GW GILT WARRANTS
		IE International Equity
		IP INVESTMENT PRODUCTS
		IT ITALIAN EQUITY
		KR KRUGER RAND GROUP
		LC LEVERAGE PRODUCTS BULL
		LE LEVERAGE PRODUCTS EXOTIC
		LP LEVERAGE PRODUCTS BEAR
		LS LOAN STOCK
		MC MULTI COUPON
		ML MEDIUM TERM LOANS
		NA NEWS ANNOUNCEMENT
		NL NIL PAID LETTER
		OC ONE COUPON
		OS Provisional JSE Ordinary Share
		PC PRIMARY CAPITAL CERTIFICATES

Field	Type (length)	Description
		PL PARTLY PAID LETTER
		PN PORTFOLIO NOTIFICATION
		PR PREFERENCE SHARES
		PS PREFERENCES SHARE
		PU PACKAGE UNITS
		RG RIGHTS
		RT RIGHTS
		RV REVERSE
		SC STEP COUPON
		SH SHARE
		SP STRUCTURED PRODUCTS
		SU STAPLED UNIT
		TA TRADABLE DURING AUCTION
		TC TRADABLE COMMODITIES
		TF TRADABLE FUND
		TR TRADABLE IN REGULATED SEGMENT
		UT UNIT TRUST
		WA WARRANTS
		WC LEVERAGE PRODUCTS COVERED WARRANT CALL
		WP LEVERAGE PRODUCTS COVERED WARRANT PUT
		WR WARRANTS
		ZC ZERO COUPON BONDS
		ZP ZERO COUPON COMMERCIAL PAPER
TIDM	STRING (4)	The mnemonic code is allocated by the Exchange and used to identify a tradable instrument.
Description	STRING (30)	Populated with the short name of the instrument.
SEDOL	STRING (7)	This field is assigned by the Exchange to uniquely identify a tradable instrument or fund.
ADT (Currency)	F64	Defines the average daily turnover of the instrument specified in the instruments trading currency.
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.

Field	Type (length)	Description	
Bid Status	ENUM	The field is used to indicate whether a tradable instrument is currently in a take-over situation. Possible values:	
		Value	Meaning
		0	Take-over situation
		1	No take-over situation
DOL Indicator	ENUM	Indicates whether a tradable instrument is included in the Daily Official List (DOL). This field can have the following values:	
		Value	Meaning
		Y	Included in DOL
		N	Not included in DOL
DOL Section Number	STRING (4)	This field indicates the section of the DOL to which a tradable instrument belongs.	
Issuer Code	STRING (6)	A code used to identify the issuer of a tradable instrument.	
Issuer Name	STRING (255)	The full name of the issuer of a tradable instrument.	
Normal Market Size	I10	Normal market size (NMS) will now become the MiFID defined threshold that is used on an EU wide basis. NMS will not be controlled by the Exchange and will be set at an EU level.	
Ratio	STRING (8)	This is a free format field used to provide the ratio of warrants to the underlying.	
Settlement Type	STRING (8)	This is a free format field which holds an indicator showing what the warrant is settled for on expiry.	
Standard Market Size	I10	Standard market size (SMS) is the MiFID average order size threshold for firms conducting in-house business (internalisation). Order sizes above the SMS do not need the offer prices to be published. SMS will not be controlled by the Exchange but will be set at an EU level.	
Instrument Name	STRING (40)	The description of a tradable instrument. This is commonly known as the 'Long name'.	
DOL Symbol	STRING (36)	This field contains 12, 3-byte codes, each identifying a specific symbol used in the formatting of the DOL.	
		These codes are not in any specific order. Embedded blank codes may exist within a list of genuine codes.	
Unit of Quotation	I10	The unit of quotation for an asset.	
Max Spread Floor	F64	This field defines the maximum spread allowed based on a monetary value.	
		This field will be blank for instruments which will only be available in TRADEcho.	
Max Spread Percentage	F64	This field defines the maximum spread allowed based on a percentage value. The max spread floor value is used when a greater spread can be achieved by using the spread floor.	
		This field will be blank for instruments which will only be available in TRADEcho.	
Country of Register	STRING (2)	This specifies the country of register for a specific tradable instrument. This will be in line with ISO 3166 and can also feature the following values: 'ZZ' – Multi Currency, Bearer Instruments, and unknown Country of Register Instruments 'DI' – Depository interest Instruments.	
Warrant Strike Price	STRING (8)	This field will provide the price at which the warrant can be exercised.	

Field	Type (length)	Description
Warrant Expiry	STRING (8)	This is the date (YYYYMMDD) at which a warrant expires.
Sector	STRING (4)	The sector identifies a division of the market within a Segment.
Multicast Channel ID	I32	Will be null.
Warrant Strike Currency	STRING (3)	This field contains the currency in which the warrant strike price is expressed.
Warrant Type	STRING (30)	This field will provide the type of warrant.
Warrant Style	STRING (30)	This field will provide the exercise style of warrant.
Load ID	I32	Will be null.
Market Data Group	STRING (1)	This field will be blank for all instruments. Refer to the Millennium Exchange and TRADEcho Business Parameters document.
Cross Ord Bid Ask Spread %	STRING (13)	For a BTF order, the price must be within: visible best bid – a configurable percentage AND visible best offer + a configurable percentage. This field is no longer applicable.
Minimum BTF Quantity	STRING (0)	Will be null. This field is no longer applicable.
Floor Price	STRING (30)	The floor price is the lowest price an instrument can reach before an expiry is triggered.
Ceiling Price	STRING (30)	The ceiling price is the highest price an instrument can reach before an expiry is triggered.
Minimum Quantity At Touch	F64	Minimum order size on entry allowed for that instrument to set a revised best bid/offer (BBO).
Mifir Identifier	STRING (4)	MiFIR identifier for the type of instrument: SHRS – Shares ETFS – ETFs DPRS – Depositary receipts OTHR – Other equity-like financial instruments CRFT – Certificates ETCS – Exchange traded commodities ETNS – Exchange traded notes SDRV – Securitised derivatives BOND – Bonds SFPS – Structured Finance Products (SFPs)
MiFIR Subclass	STRING (4)	MiFIR subclass of instrument: COMM – Commodity CRDT – Credit CRPB – Corporate bond CURR – Currency CVDB – Covered Bond CVTB – Convertible Bond EQU – Equity EUSB – Sovereign Bond

Field	Type (length)	Description										
		INTR – Interest Rate OEPB – Other Public Bond OTHR – Other										
Ref Price Allowance (%)	F64	Defines the allowance to be applied to the reference price, which is 'LTP/Previous close', to validate cross orders. This field is no longer applicable.										
RFQ Quote and Execution Price Deviation Threshold (%)	F64	Defines the percentage deviation allowed from bid/ask prices, LTP or previous close price of the normal book when accepting quotes and quote responses for RFQs. The bid ask prices of the quotes submitted should be validated against the (bid/ask prices of the normal book) ± (bid/ask prices of the normal book × RFQ price deviation %).										
Minimum RFQ Value (Currency)	F64	Defines the minimum value allowed for a RFQ, or a quote as a response to a RFQ.										
MIC	STRING (4)	Execution venue MIC code. Will be populated N/A for ODTT and TEST segments. For other segments, the following values will be populated.										
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>XLON</td> <td>LONDON STOCK EXCHANGE</td> </tr> <tr> <td>AIMX</td> <td>AIM MTF</td> </tr> <tr> <td>XLOM</td> <td>LONDON STOCK EXCHANGE – MTF</td> </tr> <tr> <td>XPVT</td> <td>LONDON STOCK EXCHANGE – PRIVATE SECURITIES MARKET</td> </tr> </tbody> </table>	Value	Meaning	XLON	LONDON STOCK EXCHANGE	AIMX	AIM MTF	XLOM	LONDON STOCK EXCHANGE – MTF	XPVT	LONDON STOCK EXCHANGE – PRIVATE SECURITIES MARKET
Value	Meaning											
XLON	LONDON STOCK EXCHANGE											
AIMX	AIM MTF											
XLOM	LONDON STOCK EXCHANGE – MTF											
XPVT	LONDON STOCK EXCHANGE – PRIVATE SECURITIES MARKET											
Liquid	STRING (1)	Indicates whether the instrument is liquid or illiquid. Possible values are:										
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>Liquid</td> </tr> <tr> <td>N</td> <td>Illiquid</td> </tr> </tbody> </table>	Value	Meaning	Y	Liquid	N	Illiquid				
Value	Meaning											
Y	Liquid											
N	Illiquid											
ADT (EUR)	F64	Defines the average daily turnover of the instrument specified in euros.										
ADNT	F64	Defines the average daily number of transactions for the instrument.										
NTW Allowed	STRING (3)	Defines if cross orders and negotiated off-book trades are enabled or disabled for the instrument.										
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>Enabled</td> </tr> <tr> <td>N</td> <td>Disabled</td> </tr> <tr> <td>N/A</td> <td>Not applicable</td> </tr> </tbody> </table>	Value	Meaning	Y	Enabled	N	Disabled	N/A	Not applicable		
Value	Meaning											
Y	Enabled											
N	Disabled											
N/A	Not applicable											
Price Tick Table ID	STRING (30)	Price tick table identifier for the instrument.										
FISN	STRING (35)	Financial instrument short name for the instrument. Will be blank in the R9.2 test environment.										
Max Order Value (Currency)	F64	Defines the maximum order value allowed for the instrument.										

Field	Type (length)	Description						
Max BTF Value (Currency)	F64	Defines the maximum value allowed for BTF orders. This field is no longer applicable.						
Max Cross Value (Currency)	F64	Defines the maximum value allowed for cross orders. This field is no longer applicable.						
Max RFQ Value (Currency)	F64	Defines the maximum value allowed for RFQs and quotes which are sent in response to the RFQ.						
Notional Currency	STRING (3)	Defines the currency of the notional amount. Only populated for non-equity instruments.						
Price Notation	STRING (4)	Indicates whether the price is expressed in monetary value, a percentage or yield. MONE will be populated for equity like instruments and PERC will be populated for bond instruments.						
Denominated Par Value	F64	Used to specify minimum denomination of a bond.						
Min Auction RFQ Quote Value (Currency)	F64	Defines the minimum value allowed for quotes in response to an auction RFQ. If the RFQ's value is less than the value set in this parameter, then the quote value is not validated against the parameter. The value will be in the trading currency of the instrument.						
Professional Investor Only	STRING (3)	Defines if the instrument belongs to a sector which is to be used by professional investors only.						
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>Yes</td> </tr> <tr> <td>N</td> <td>No</td> </tr> </tbody> </table>	Value	Meaning	Y	Yes	N	No
Value	Meaning							
Y	Yes							
N	No							

2.8 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							

2.9 Post-trade parameter file record layout

The following sections provide details on post trade parameter available within the reference data service.

Field	Type (length)	Description
MIT Post Trade Parameter ID	STRING (30)	Unique key used to link the post-trade parameters to files.
Trade Type Table ID	STRING (30)	Unique key used to link the 'Post-trade parameters' file to the 'Trade type' file.
Settlement Cycle	I32	The number of business days for standard settlement.

Field	Type (length)	Description												
CCP Internaliser	ENUM	Indicates whether instrument is available for SETS internalisation or not. Possible values:												
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Disabled</td> </tr> <tr> <td>1</td> <td>Enabled (but not for LSE)</td> </tr> <tr> <td>2</td> <td>SETS Internalisation</td> </tr> </tbody> </table>	Value	Meaning	0	Disabled	1	Enabled (but not for LSE)	2	SETS Internalisation				
Value	Meaning													
0	Disabled													
1	Enabled (but not for LSE)													
2	SETS Internalisation													
		Please note this service is optional. Customers wishing to use SETS internalisation need to opt in to the service. Please see MIT 201 for more details.												
MIT Trade Reporting Model	ENUM	Trade reporting model enabled for the instrument. Possible values:												
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>All</td> </tr> <tr> <td>2</td> <td>Single sided</td> </tr> <tr> <td>3</td> <td>Dual sided – Alleged</td> </tr> <tr> <td>4</td> <td>Dual sided – Independent</td> </tr> <tr> <td>5</td> <td>None</td> </tr> </tbody> </table>	Value	Meaning	1	All	2	Single sided	3	Dual sided – Alleged	4	Dual sided – Independent	5	None
Value	Meaning													
1	All													
2	Single sided													
3	Dual sided – Alleged													
4	Dual sided – Independent													
5	None													
Price Validation Ratio	F64	Will be populated blank.												
Late trade Time limit	I32	Will be populated blank.												

2.10 Trade type file record layout

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

Field	Type (length)	Description								
Trade Type Table ID	STRING (30)	Unique key used to link the trade type to files								
Short Code	STRING (4)	Short code of the trade type								
Fix Value	I32	Corresponding FIX value of the short code								
Publication Type	ENUM	Type of the trade publication applied to the instrument Possible values:								
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Do not publish</td> </tr> <tr> <td>1</td> <td>Immediate publication</td> </tr> <tr> <td>2</td> <td>Delay Requested</td> </tr> </tbody> </table>	Value	Meaning	0	Do not publish	1	Immediate publication	2	Delay Requested
Value	Meaning									
0	Do not publish									
1	Immediate publication									
2	Delay Requested									
Execution Venue	STRING	Will be blank								

2.11 Trading parameters file record layout

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

Field	Type (length)	Description								
Trading Parameters ID	STRING (30)	Unique identifier for the trading parameter that links the data in the file to other reference data files.								
Price Tick Table ID	STRING (30)	Will be blank.								
Session Parameter Table ID	STRING (30)	Unique identifier that links this data to the session parameter file.								
Allow Named Orders	ENUM	Indicates whether named orders are enabled.								
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Disabled</td> </tr> <tr> <td>2</td> <td>Enabled</td> </tr> </tbody> </table>	Value	Meaning	0	Disabled	2	Enabled		
		Value	Meaning							
0	Disabled									
2	Enabled									
Maximum Random Duration	I32	Maximum random time in seconds.								
Maximum Order Duration	I32	Maximum time an order can stay on the order book for GTC orders. When the maximum order duration is set to any value other than zero, GTC orders are rejected and GFD is allowed.								
Min Quote Size EMS	I32	This will always be 100% of Exchange market size.								
Minimum Auction Volume EMS	F64	This determines the minimum volume allowed before an uncrossing takes place where the proposed uncrossing price is outside of price monitoring values after all possible extensions. The percentage is based on the instruments Exchange market size.								
Quote Type	ENUM	Type of quote available in the market. Firm quotes do not interact with orders on the order book.								
		Possible values:								
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No Quotes</td> </tr> <tr> <td>1</td> <td>Firm Quote</td> </tr> <tr> <td>2</td> <td>Executable Quote</td> </tr> </tbody> </table>	Value	Meaning	0	No Quotes	1	Firm Quote	2	Executable Quote
		Value	Meaning							
0	No Quotes									
1	Firm Quote									
2	Executable Quote									
Note: Please refer to the market maker quote type in the sector tab of the Business Parameters document to determine whether an instrument supports quotes. This field should be ignored for instruments that do not support quotes.										
Allow Stop Orders	ENUM	Indicates whether stop orders are enabled.								
		Possible values:								
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Disabled</td> </tr> <tr> <td>1</td> <td>Enabled</td> </tr> </tbody> </table>	Value	Meaning	0	Disabled	1	Enabled		
Value	Meaning									
0	Disabled									
1	Enabled									
Minimum Disclosed Size EMS	F64	This relates to the iceberg peak refresh percentage.								

Field	Type (length)	Description						
AESP Auction Duration	I32	AESP auction duration in minutes.						
RFQ Type	ENUM	<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>None</td> </tr> <tr> <td>2</td> <td>Private</td> </tr> </tbody> </table>	Value	Meaning	0	None	2	Private
Value	Meaning							
0	None							
2	Private							
Price Collar Percentage	F64	Defines the spread between the dynamic reference price and the price collar in terms of the percentage of the dynamic reference price.						
Auction Price Collar Percentage	F64	Defines the spread between the dynamic reference price and the price collar in terms of the percentage of the dynamic reference price. Applicable during auction sessions.						
Sponsored User Price Collar Percentage	F64	Defines the spread between the dynamic reference price and the price collar in terms of the percentage of the dynamic reference price. Applicable for sponsored users.						
Sponsored User Auction Price Collar Percentage	F64	Defines the spread between the dynamic reference price and the price collar in terms of the percentage of the dynamic reference price. Applicable in auctions for sponsored users.						
Auto RFQ Min No of Quotes	F64	Defines the minimum number of quotes that needs to be live for an auto RFQ in order for execution to take place.						

2.12 Price tick file record layout

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

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	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.

2.13 Session parameters file record layout

The following sections provide details on session parameters available within the reference data service. Only session parameters where one or more field is populated will be referenced in the session parameter file.

Field	Type (length)	Description
Session Parameter Table ID	STRING (30)	Unique identifier for the session parameter that links the data in the file to other reference data files
Trading Session	ENUM	Indicates as to which session the parameters are applicable. Please see section 2.18 for full list of values
Duration to Auction	I32	Duration to auction in seconds

Field	Type (length)	Description						
Dynamic Circuit Breaker	F64	Percentage value for the dynamic circuit breaker						
Market Order Extension	I32	Number of market order extensions						
Market Order Extension Duration	I32	Market order extension duration in seconds						
Minimum Volume Check	ENUM	Whether the minimum order volume check is applied during an auction 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							
Price Monitoring Extension	I32	Number of price monitoring extensions						
Price Monitoring Extension Duration	I32	Duration of price monitoring extension in seconds						
Static Circuit Breaker	F64	Percentage value for the static circuit breaker						
2nd Price Monitoring Extension	F64	Percentage value for 2nd PME. If null, then the <i>dynamic circuit breaker</i> is applied where applicable						
3rd Price Monitoring Extension	F64	Percentage value for 3rd PME. If null, then the <i>dynamic circuit breaker</i> is applied where applicable						
4th Price Monitoring Extension	F64	Percentage value for 4th PME. If null, then <i>dynamic circuit breaker</i> is applied where applicable						
5th Price Monitoring Extension	F64	Percentage value for 5th PME. If null, then the <i>dynamic circuit breaker</i> is applied where applicable						

2.14 Participant file record layout

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

Field	Type (length)	Description
Member ID	STRING (11)	Unique code identifying the member firm
Member Mnemonic	STRING (4)	A code that identifies the member firm
Member Name	STRING (100)	This field holds the full name of the member firm

2.15 Ex-marker status record layout

The following sections provide details on ex-marker status information for an instrument.

Field	Type (length)	Description																								
Instrument ID	STRING (20)	Instrument ID, identifies the instrument																								
Ex-Marker Code	STRING (2)	The value of an ex-marker pertaining to a tradable instrument. It Indicates whether the instrument is trade cum or ex (dividend, coupon etc.) Possible values:																								
		<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>XA</td> <td>EX Corporate Action</td> </tr> <tr> <td>XC</td> <td>EX Capitalisation</td> </tr> <tr> <td>XD</td> <td>EX Dividend</td> </tr> <tr> <td>XL</td> <td>Liquidation Distribution</td> </tr> <tr> <td>XO</td> <td>EX Other</td> </tr> <tr> <td>XP</td> <td>EX Repayment of Capital</td> </tr> <tr> <td>XR</td> <td>EX Rights</td> </tr> <tr> <td>XS</td> <td>EX Stock Distribution</td> </tr> <tr> <td>XV</td> <td>EX Reverse Stock Split</td> </tr> <tr> <td>XW</td> <td>EX Stock Split</td> </tr> <tr> <td>S</td> <td>Stabilisation Marker</td> </tr> </tbody> </table>	Value	Meaning	XA	EX Corporate Action	XC	EX Capitalisation	XD	EX Dividend	XL	Liquidation Distribution	XO	EX Other	XP	EX Repayment of Capital	XR	EX Rights	XS	EX Stock Distribution	XV	EX Reverse Stock Split	XW	EX Stock Split	S	Stabilisation Marker
Value	Meaning																									
XA	EX Corporate Action																									
XC	EX Capitalisation																									
XD	EX Dividend																									
XL	Liquidation Distribution																									
XO	EX Other																									
XP	EX Repayment of Capital																									
XR	EX Rights																									
XS	EX Stock Distribution																									
XV	EX Reverse Stock Split																									
XW	EX Stock Split																									
S	Stabilisation Marker																									
Ex-Marker End Date	STRING (8)	This is the last day a particular ex-marker set on a tradable instrument is valid for. Format yyyyymmdd																								
Ex-Marker Start Date	STRING (8)	This is the date from which a particular ex-marker set on a tradable instrument is valid. Format yyyyymmdd																								

2.16 Market maker registration record layout

The following sections provide details on market makers registered in instrument.

Field	Type (length)	Description
Member ID	STRING (11)	Unique code identifying the member firm
Instrument ID	STRING (20)	Instrument ID, identifies the instrument

2.17 RFQ-enabled record layout

Field	Type (length)	Description
Instrument ID	STRING (20)	Instrument ID of an instrument for which a market maker is eligible to receive private RFQs for
Firm ID	STRING (11)	Unique code of a member firm who is eligible to receive named private RFQs

2.18 Values for trading session

Cycle definition	Trading cycle	Session	Session index
SETS-EDSP	NE OB NO-CAC	Pre-Trading	217
	NE OB NO-CAC – Early close	Opening Auction Call	218
	NE OB CAC	Regular Trading 1	219
	NE OB CAC – Early close	EDSP Auction Call	220
		Regular Trading 2	221
		Closing Auction Call	222
		Post Close	224
		Re-Opening Auction Call	225
		Resume Auction Call	226
		Closing Price Cross	227
		Halt	228
		Halt and Close	229
		Pause	230
	MSETS-OFIN OFLV	NE OB EOD ONLY	Pre-Trading
NE OB EOD ONLY Early close		Regular Trading	185
		Post Close	187
		Halt	188
		Pause	189
ETS-IOB	ODTT	Pre-Trading	191
	ODTT Early close	Opening Auction Call	192
		Regular Trading	193
		Closing Auction Call	194
		Post Close	196
		Re-Opening Auction Call	197
		Resume Auction Call	198
		Closing Price Cross	199
		Halt	200
		Halt and Close	201
	Pause	202	
SETS-IDA	SETSQX-RT	Pre-Trading	287
	SETSQX-RT Early close	Opening Auction Call	288
	SETSQX-NOMM	Regular Trading	289
	SETSQX-NOMM Early close SETS-L1	EDSP Auction Call	290

Cycle definition	Trading cycle	Session	Session index
	SETS-L1- Early close IOB-L1	Periodic Auction Call 1	291
	IOB-L1- Early close IOB-SC-L1	Regular Trading 1	292
	IOB-SC-L1- Early Close	Periodic Auction Call 2	293
	Note: IOB-SC-L1 will be introduced in due course	Regular Trading 2	294
		Periodic Auction Call 3	315
		Regular Trading 3	316
		Closing Auction Call	295
		Post Close	297
		Re-Opening Auction Call	298
		Resume Auction call	299
		Halt	300
		Halt and Close	301
		Pause	302
		Closing Price Cross	303
Standard Off Book	Standard Off Book Standard Off Book Early Close	Pre-Trade Reporting	178
		Trade Reporting	15
		Post Close	22
		Halt	16
Standard Off Book MFD	Standard Off Book EQS ITR MFD	Grace Period	177
	Standard Off Book EQS ITR MFD Early Close	Trade Reporting 1	17
	Standard Off Book MFD	Trade Reporting 2	18
	Standard Off Book MFD	Trade Reporting 3	19
	Early Close	Halt	20
		Post Close	21
Quote Book	QB1 – QB26	Pre-Trading	232
	QB1 – QB26 Early close	Pre Mandatory	233
		Mandatory	234
		Post Mandatory	235
		Halt	236

2.19 MD5 checksum files

Each reference data file will have a corresponding MD5 checksum file for clients to use for their information systems to ensure data integrity. This is an optional feature for clients to use.

3.0 Guide to Secure File Transfer Protocol (SFTP)

3.1 Introduction

The introduction of Millennium Exchange has created a new model for downloading reference data.

The service model will allow for customers to PULL the relevant reference data files in real time.

3.2 Service overview

The service is designed to allow customers to download the reference data files in a secure and flexible manner.

Market reference data files will be made available Monday – Friday from 21:30 local market time on the weekday prior to published trading days.

In addition to files that include the full reference data content, deltas from the previous day (adds, modifications and deletes) will be featured. Deltas will include an additional column to indicate the nature of the change. Please refer to section 2.5 of MIT 401 – Guide to reference data services. Intra-day changes files will be published as required – please refer to section 2.4 of MIT 401 – Guide to reference data services. Customers are recommended to regularly refresh their reference data set through regular downloads of the full reference files.

Previous days' files will be moved into individual date stamped folders to keep the current day clear of older files.

3.3 Mandatory testing

There are no testing requirements for customers to certify against the new reference data service.

3.4 Enablement

Access to the reference data service can be requested via the contact details provided in section 1.5 above.

At the time of the request, users will have their SAP given permission for access. Note: Any IP address from the SAP Subnet will be allowed access to the service.

A single username and password, detailed in section 2.2, can be used to log in. The username and password will be valid for both test and production in order to limit administration.

3.5 Connectivity

Connectivity to reference data services is provided via the Exchange's network – Extranex, CMC, hosting. Customers should target the addresses detailed in section 2.2 to enable file transmission.

Below is a series of screen shots to guide customers in the process of SFTP for file download from Windows and UNIX.

3.5.1 UNIX commands

```
>sftp -oPort=51101 username@IP
```

```
Connecting to xxx.xxx.xxx.xxx...
```

```
The authenticity of host '[xxx.xxx.xxx.xxx]:51101 ([xxx.xxx.xxx.xxx]:51101)' can't be established. RSA key fingerprint is 4b:6d:c4:0f:16:54:8d:94:d8:a4:0d:d0:bf:da:ce:a1.
```

```
Are you sure you want to continue connecting (yes/no)? Yes
```

```
Warning: Permanently added '[xxx.xxx.xxx.xxx]:51101' (RSA) to the list of known hosts. username@IP's password: (Enter Password)
```

```
sftp> dir
```

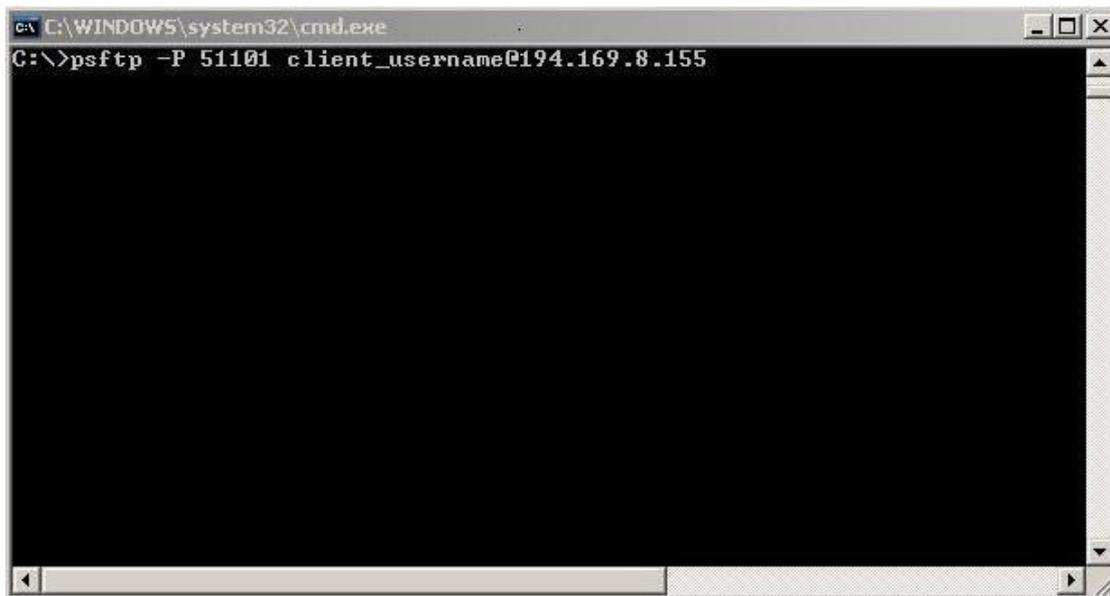
20100727_XLON_Calendar ON_MMRegistration	20100727_XLON_ExMarker	20100727_XL
20100727_XLON_Participant ON_PriceTick	20100727_XLON_PostTrade	20100727_XL

```
sftp> quit
```

3.5.2 Windows commands

Step 1

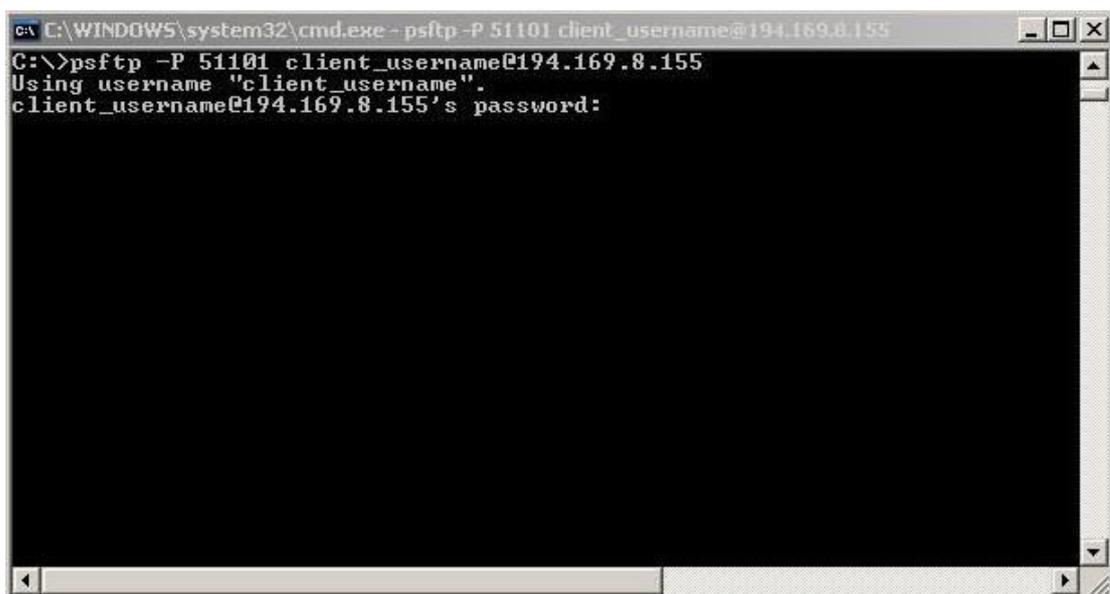
SFTP to the address provided above with provided username.



```
C:\WINDOWS\system32\cmd.exe
C:\>psftp -P 51101 client_username@194.169.8.155
```

Step 2

Insert password as required.



```
C:\WINDOWS\system32\cmd.exe - psftp -P 51101 client_username@194.169.8.155
C:\>psftp -P 51101 client_username@194.169.8.155
Using username "client_username".
client_username@194.169.8.155's password:
```

Step 3

Once logged in, you can perform a directory list.

```

C:\WINDOWS\system32\cmd.exe - psftp -P 51101 client_username@194.169.8.155
psftp> ls
Listing directory /
drwxr-xr-x  2 0      0      4096 Aug  9 10:30 .
drwxr-xr-x  2 0      0      4096 Aug  9 10:30 ..
-rw-r--r--  1 0      0     26219 Aug  9 10:30 20100727_XLON_Calendar
-rw-r--r--  1 0      0     3219 Aug  9 10:30 20100727_XLON_ExMarker
-rw-r--r--  1 0      0      159 Aug  9 10:30 20100727_XLON_MMRegistration
-rw-r--r--  1 0      0     2422 Aug  9 10:30 20100727_XLON_Participant
-rw-r--r--  1 0      0     1499 Aug  9 10:30 20100727_XLON_PostTrade
-rw-r--r--  1 0      0     3154 Aug  9 10:30 20100727_XLON_Pricelick
-rw-r--r--  1 0      0      485 Aug  9 10:30 20100727_XLON_Session
-rw-r--r--  1 0      0      494 Aug  9 10:30 20100727_XLON_TradeType
-rw-r--r--  1 0      0     2093 Aug  9 10:30 20100727_XLON_Trading
-rw-r--r--  1 0      0     26052 Aug  9 10:30 20100728_XLON_Calendar
-rw-r--r--  1 0      0     3414 Aug  9 10:30 20100728_XLON_ExMarker
-rw-r--r--  1 0      0      193 Aug  9 10:30 20100728_XLON_MMRegistration
-rw-r--r--  1 0      0     4099 Aug  9 10:30 20100728_XLON_Participant
-rw-r--r--  1 0      0     1499 Aug  9 10:30 20100728_XLON_PostTrade
-rw-r--r--  1 0      0     3154 Aug  9 10:30 20100728_XLON_Pricelick
-rw-r--r--  1 0      0      485 Aug  9 10:30 20100728_XLON_Session
-rw-r--r--  1 0      0      494 Aug  9 10:30 20100728_XLON_TradeType
-rw-r--r--  1 0      0     2093 Aug  9 10:30 20100728_XLON_Trading
-rw-r--r--  1 0      0     25885 Aug  9 10:30 20100729_XLON_Calendar
-rw-r--r--  1 0      0     2670 Aug  9 10:30 20100805_XLON_Trading
-rw-r--r--  1 0      0     24549 Aug  9 10:30 20100806_XLON_Calendar
-rw-r--r--  1 0      0     2853 Aug  9 10:30 20100806_XLON_ExMarker
-rw-r--r--  1 0      0      160 Aug  9 10:30 20100806_XLON_MMRegistration
-rw-r--r--  1 0      0     4267 Aug  9 10:30 20100806_XLON_Participant
-rw-r--r--  1 0      0     1499 Aug  9 10:30 20100806_XLON_PostTrade
-rw-r--r--  1 0      0     3102 Aug  9 10:30 20100806_XLON_Pricelick
-rw-r--r--  1 0      0      485 Aug  9 10:30 20100806_XLON_Session
-rw-r--r--  1 0      0      494 Aug  9 10:30 20100806_XLON_TradeType
-rw-r--r--  1 0      0     2670 Aug  9 10:30 20100806_XLON_Trading
-rw-r--r--  1 0      0     2825 Aug  9 10:30 20100809_XLON_ExMarker

```

Step 4

Get the required files individually.

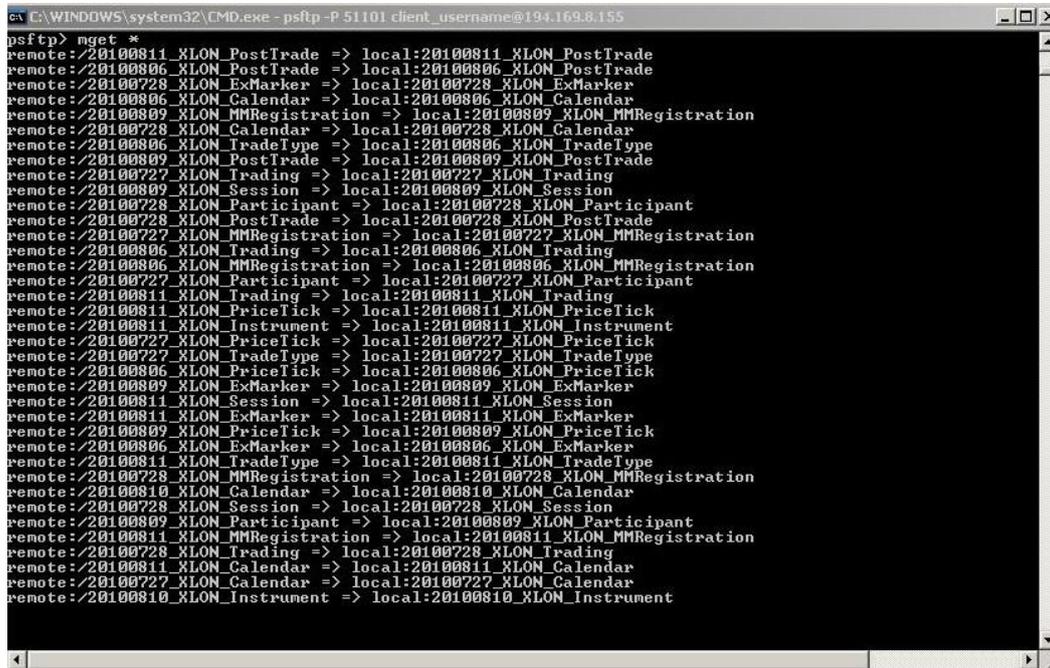
```

C:\WINDOWS\system32\cmd.exe - psftp -P 51101 client_username@194.169.8.155
psftp> get 20100806_XLON_ExMarker
remote :/20100806_XLON_ExMarker => local:20100806_XLON_ExMarker
psftp>

```

Step 5

Get * for all files for the current day.



```

C:\WINDOWS\system32\CMD.exe - psftp -P 51101 client_username@194.169.8.155
psftp> mget *
remote:/20100811_XLON_PostTrade => local:20100811_XLON_PostTrade
remote:/20100806_XLON_PostTrade => local:20100806_XLON_PostTrade
remote:/20100728_XLON_ExMarker => local:20100728_XLON_ExMarker
remote:/20100806_XLON_Calendar => local:20100806_XLON_Calendar
remote:/20100809_XLON_MMRRegistration => local:20100809_XLON_MMRRegistration
remote:/20100728_XLON_Calendar => local:20100728_XLON_Calendar
remote:/20100806_XLON_TradeType => local:20100806_XLON_TradeType
remote:/20100809_XLON_PostTrade => local:20100809_XLON_PostTrade
remote:/20100727_XLON_Trading => local:20100727_XLON_Trading
remote:/20100809_XLON_Session => local:20100809_XLON_Session
remote:/20100728_XLON_Participant => local:20100728_XLON_Participant
remote:/20100728_XLON_PostTrade => local:20100728_XLON_PostTrade
remote:/20100727_XLON_MMRRegistration => local:20100727_XLON_MMRRegistration
remote:/20100806_XLON_Trading => local:20100806_XLON_Trading
remote:/20100806_XLON_MMRRegistration => local:20100806_XLON_MMRRegistration
remote:/20100727_XLON_Participant => local:20100727_XLON_Participant
remote:/20100811_XLON_Trading => local:20100811_XLON_Trading
remote:/20100811_XLON_PriceTick => local:20100811_XLON_PriceTick
remote:/20100811_XLON_Instrument => local:20100811_XLON_Instrument
remote:/20100727_XLON_PriceTick => local:20100727_XLON_PriceTick
remote:/20100727_XLON_TradeType => local:20100727_XLON_TradeType
remote:/20100806_XLON_PriceTick => local:20100806_XLON_PriceTick
remote:/20100809_XLON_ExMarker => local:20100809_XLON_ExMarker
remote:/20100811_XLON_Session => local:20100811_XLON_Session
remote:/20100811_XLON_ExMarker => local:20100811_XLON_ExMarker
remote:/20100809_XLON_PriceTick => local:20100809_XLON_PriceTick
remote:/20100806_XLON_ExMarker => local:20100806_XLON_ExMarker
remote:/20100811_XLON_TradeType => local:20100811_XLON_TradeType
remote:/20100728_XLON_MMRRegistration => local:20100728_XLON_MMRRegistration
remote:/20100810_XLON_Calendar => local:20100810_XLON_Calendar
remote:/20100728_XLON_Session => local:20100728_XLON_Session
remote:/20100809_XLON_Participant => local:20100809_XLON_Participant
remote:/20100811_XLON_MMRRegistration => local:20100811_XLON_MMRRegistration
remote:/20100728_XLON_Trading => local:20100728_XLON_Trading
remote:/20100811_XLON_Calendar => local:20100811_XLON_Calendar
remote:/20100727_XLON_Calendar => local:20100727_XLON_Calendar
remote:/20100810_XLON_Instrument => local:20100810_XLON_Instrument
  
```

3.6 Automation

For automating authentication and reference data download from the CDS SFTP solution, the following can be used as an example for both UNIX and Windows.

Unix/Linux

Customers can use an 'expect' command within BASH – this can be found at the following link:

<http://www.manpagez.com/man/1/expect/>

Example script:

```

#!/usr/bin/expect -f

spawn sftp client_username@sFTP_server
match_max 100000 expect ".*?assword:.*"
send - "client_password\r" expect "*sftp*"
send - "get *XLON_Instrument.csv\r" expect eof
  
```

Expect can also be used directly in C or C++

Windows

Customers can use an SFTP client like Winscp.

Example command line:

`winscp.com/script=C:\connection_script.txt/log=C:\log.xml`

Connection_script.txt example:

```

# Automatically answer all prompts negatively not to stall the script on errors option batch on
# Disable overwrite confirmations that conflict with the previous option confirm off
# Connect using client_username@sFTP_server open client_username:client_password@sFTP_server # Force
binary mode transfer option transfer binary
# Download file to the local directory D:\ get *XLON_Instrument.csv D:\somefolder
# Disconnect close
# Exit WinSCP exit
  
```

Copyright © **May 2025** London Stock Exchange plc. Registered in England and Wales No. 2075721.

London Stock Exchange plc has used all reasonable efforts to ensure that the information contained in this publication is correct at the time of going to press, but shall not be liable for decisions made in reliance on it.

London Stock Exchange and the coat of arms device are registered trade marks of London Stock Exchange plc.

London Stock Exchange

10 Paternoster Square London EC4M 7LS
T: +44 (0)20 7797 1000
www.londonstockexchange.com



**LONDON
STOCK
EXCHANGE**