

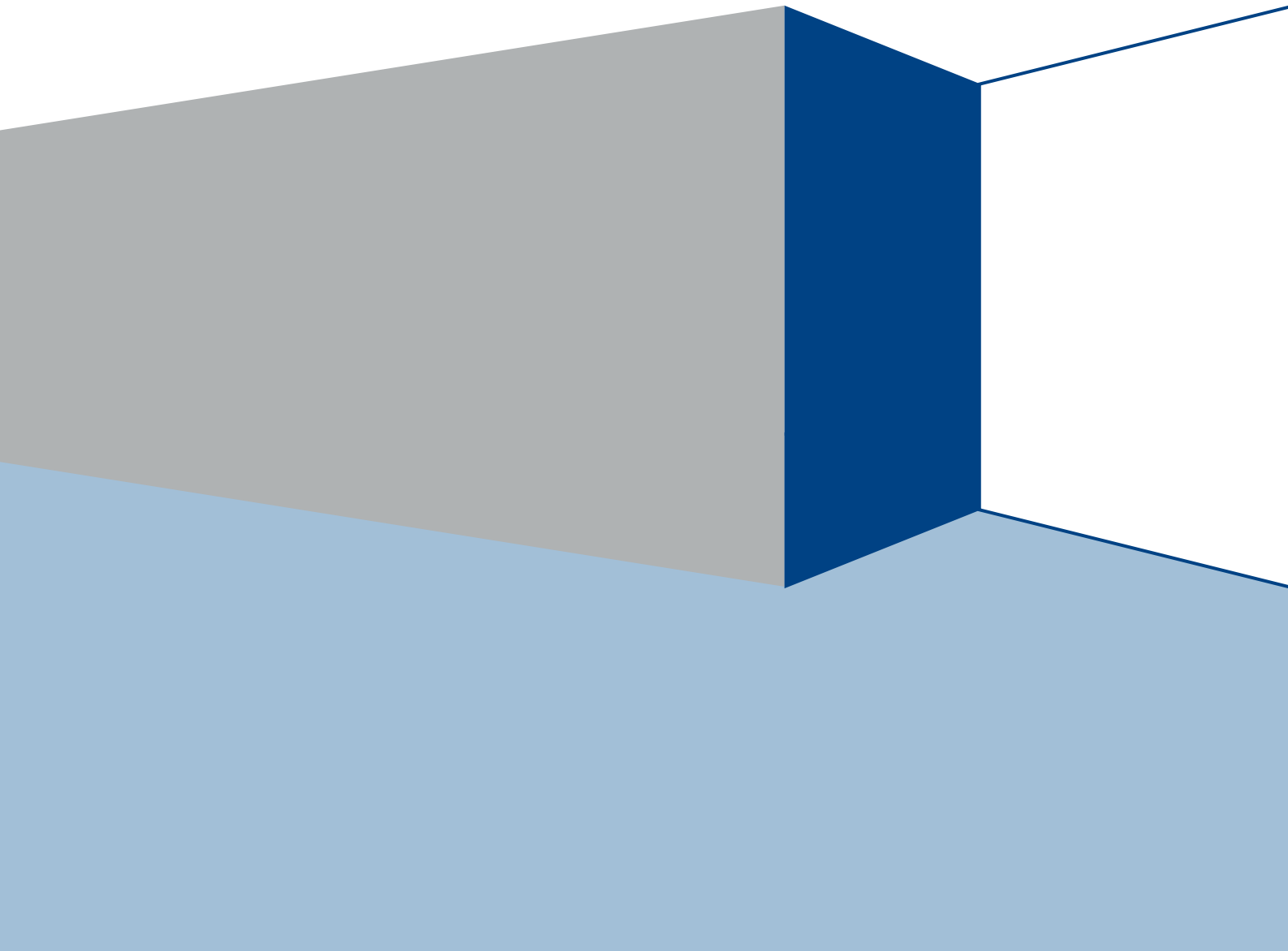


**London**  
Stock Exchange Group

MIT201 - EUROT LX - MILLENNIUM EXCHANGE

# Trading Service Manual (Guide to the new Trading System)

Issue 4.0 · June 2018



# Contents

Contents .....	2
1. Introduction.....	6
1.1. Purpose .....	6
1.2. Readership.....	6
1.3. Document series .....	7
1.4. Document history .....	8
1.5. Enquiries .....	9
2. Customer Interfaces.....	11
2.1. Overview .....	11
2.2. Message workflow .....	15
2.3. Time synchronisation .....	16
2.4. Reference Data Service .....	17
2.5. Technical details .....	17
3. User Configuration .....	19
3.1. Structure .....	19
3.2. Firm .....	20
3.3. Node .....	20
3.4. User.....	20
3.4.1. TraderGroups for FIX Connections.....	22
3.4.2. TraderGroups for Native connections.....	22
3.4.3. FIX Connection Users.....	23
3.4.4. Native connection Users.....	23
3.5. Connection security.....	23
3.6. Example configuration.....	24
3.7. Cancel on disconnect / logout .....	26
3.8. Message throttling .....	26
4. Market Structure .....	27
4.1. Market configuration .....	27
4.2. Business categorisation of securities.....	27
4.3. Technical operation parameters .....	28
4.4. Trading Sessions.....	29
4.4.1. Quoting Period .....	30
4.4.2. Continuous Trading .....	30
4.5. Symbology .....	31
5. Orders and Quotes .....	32
5.1. Order types .....	32
5.1.1. Order entry fields .....	32
5.1.2. Time in Force.....	36
5.1.3. Order Type / Time In Force combinations.....	37
5.1.4. Order Type - Time In Force / Trading Session combinations ..	37
5.1.5. Order Source .....	37
5.2. Quotes types.....	39
5.2.1. Quote entry fields.....	39

5.2.2.	Content of quotes.....	41
5.2.3.	Private Request for Quotes .....	42
5.2.3.1.	RFQ Submission .....	43
5.2.3.2.	Auto RFQ .....	43
5.2.3.3.	Response to the RFQ .....	44
5.2.3.4.	Accepting a Quote submitted by Market Maker – Manual RFQ 45	
5.2.3.5.	Automatic Execution – Auto RFQ.....	46
5.3.	Price Format Code (“tick size”) .....	46
5.4.	Order book priority .....	47
5.5.	Unique transaction identifier .....	47
6.	Order Behaviour .....	48
6.1.	Order management .....	48
6.1.1.	Order modification .....	48
6.1.2.	Exchange deletion of orders .....	48
6.1.3.	Trade Cancels .....	49
6.1.4.	Trade Amendments .....	49
7.	Order Book Execution .....	50
7.1.	Execution Priority .....	50
7.2.	Execution Criteria .....	50
7.3.	Trading price monitoring .....	50
7.3.1.	Price Bands .....	50
7.3.2.	Circuit Breakers .....	51
8.	Closing (Reference) price .....	53
9.	Additional Services .....	54
9.1.	Drop Copy.....	54
9.2.	Own Order / Trade Book Download .....	54
9.3.	RCG File .....	55
9.4.	Post Trade Filter .....	55
9.5.	Market Statistics.....	55
9.6.	Members File .....	56
10.	Recovery Model.....	57
10.1.	Connection .....	57
10.1.1.	FIX Recovery .....	57
10.1.2.	Native Recovery .....	58
10.2.	Disaster recovery site .....	58
10.3.	Exchange market intervention .....	59
10.3.1.	Urgent Notices Session .....	59
10.3.2.	Market situation options .....	60
11.	Service Interruptions Protocol.....	61
11.1.	Overarching Principles.....	61
11.2.	Different Types of Outage.....	61
11.3.	Assessment & Response.....	62
11.4.	Alternative Site Procedures .....	62
11.5.	Communication .....	62
12.	Appendix 1: Certification Programme .....	63
12.1.	Access to the Live Service .....	63

12.2.	Software Identification .....	63
12.3.	Certification Policy .....	63
12.4.	Test Scenario Exception Policy .....	64
12.5.	Non-Conformant Behaviour on the Live Service .....	64
12.6.	Certification contacts: .....	64

## Disclaimer

EuroTLX Company 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. EuroTLX Company 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 is therefore for guidance only.

Moreover, the information stated may refer to the Rules Book of EuroTLX Market.

# 1. Introduction

EuroTLX Market is hosted on the ultra-low latency platform of Millennium IT.

## 1.1. Purpose

The purpose of this document is to provide participants with:

- a high level technical overview of the following areas:
  - customer facing trading interfaces to the Millennium Exchange trading system (both FIX 5.0 and Native);
  - user and market configuration;
  - disaster recovery; and
- generic operation of the Trading Services provided by Millennium Exchange.

All the technical documents should be read in conjunction with the Rules and Guide to Parameters of EuroTLX Market.

### ***Rules of EuroTLX***

The Rules Book of EuroTLX Market is available at the following links:

Italian Version:

<http://www.eurotlx.com/documenti/regolamentazione/regolamento>

English Version

<http://www.eurotlx.com/en/documenti/regolamentazione/regolamento>

### ***Trading Services webpage***

More details of the Exchange's Trading Systems, including where this document and the *Millennium Exchange Business Parameters for BIT* document will be found following go-live can be seen at:

Italian Version:

<http://www.eurotlx.com/it/documentazionetecnica>

English Version:

<http://www.eurotlx.com/en/technicaldocumentation>

## 1.2. Readership

This document outlines the Trading Services available on Millennium Exchange.

When read in conjunction with the message specifications it is intended that these documents provide the information that participants require to develop to the new services.

This document is particularly relevant to trading, compliance and technical staff within EuroTLX's member firms and software providers.

### 1.3. Document series

The current series of documents are set out below:

- **Trading**
  - **MIT201 EuroTLX - Guide to New Trading System (this document)**
  - MIT202 EuroTLX – Trading Gateway (FIX 5.0) Specification
  - MIT203 EuroTLX – Native Trading Gateway Specification
  - MIT204 EuroTLX – Post Trade Gateway (FIX 5.0) Specification
  - MIT205 EuroTLX – Drop Copy Gateway (FIX 5.0) Specification
  
- **Market Data**
  - MIT301 EuroTLX – Guide to Market Data Services
  - MIT303 EuroTLX - MITCH Specification
  - MIT305 EuroTLX – Markets Reference Data
  - MIT306 EuroTLX – Instrument Currency
  - MIT308 EuroTLX - Trading Calendars
  - MIT309 EuroTLX - RFQ Market Maker Reference Data
  - EuroTLX – ANA File Service – Basic
  - EuroTLX – ANA File Service – Enriched
  
- **Report Reconciliation Service**
  - MIT601 EuroTLX – Report Reconciliation Service
  
- **Other**
  - MIT501 EuroTLX- Guide to Testing Services
  - MIT701 EuroTLX – Connectivity Specification
  - EuroTLX – Members File Service
  - EuroTLX – RCG File Service
  - EuroTLX – Market Statistics - TLX\_Listino.txt File Service

This series principally covers non-regulatory information and does not override or supersede the Rules of EuroTLX.

The latest version of this document series can be found at the following links:

<http://www.eurotlx.com/it/documentazionetecnica>

<http://www.eurotlx.com/en/technicaldocumentation>

## 1.4. Document history

This document has been through the follow iterations:

Issue	Date	Description
1.0	February 2014	First issue of this document published via the EuroTLX's website and distributed to customers
1.1	March 2014	Updated version published via EuroTLX's website and distributed to customers: <ul style="list-style-type: none"><li>- Updated section 7.3.1</li><li>- Added section 9.5 "Market Statistics" and references to file TLX_Listino.txt</li></ul>
1.2	April 2014	Updated version published via EuroTLX's website and distributed to customers: <ul style="list-style-type: none"><li>- Updated document Headline according to Rules</li><li>- Updated section 1.1, 1.4, 2.5, 4.2</li><li>- Added section 9.6</li><li>- Added Appendix 1</li></ul>
1.3	June 2014	Updated version published via EuroTLX's website and distributed to customers: <ul style="list-style-type: none"><li>- Updated section 5.2</li></ul>
1.4	July 2014	Updated version published via EuroTLX's website and distributed to customers: <ul style="list-style-type: none"><li>- Updated section 5.1 (Table 4)</li></ul>
1.5	October 2014	Updated version published via EuroTLX's website and distributed to customers: <ul style="list-style-type: none"><li>- Updated section 4.4.2 (Footnote 9)</li></ul>
1.6	November 2014	Updated version published via EuroTLX's website and distributed to customers: <ul style="list-style-type: none"><li>- Level 2-ITCH" renamed as "MITCH</li></ul>



1.7	October 2015	Updated version published via EuroTLX's website and distributed to customers:  - Updated section 1, 10.
1.8	June 2016	Updated version published via EuroTLX's website and distributed to customers:  Updated section 3.4, 4.2, 4.4.2, 7.3.1, 8
2.0	July 2016	Updated version published via EuroTLX's website and distributed to customers:  - Changed sections: 1.1, 1.3, 2.5, 3.4, 5.5, 10.2, 12.  - Added new section: 5.2.3, 5.2.3.1, 5.2.3.2, 5.2.3.3, 12.7.
2.1	July 2016	Updated version published via EuroTLX's website and distributed to customers:  Updated section: 12.4
3.0	June 2017	Updated version published via EuroTLX's website and distributed to customers:  2.1, 3,4, 4.4, 4.4.2, 5.1.1, 5.1.5, 5.2, 5.2.1, 5.2.2, 5.2.3.1, 5.2.3.2, 5.5, 6.1.3, 12
4.0	June 2018	Updated version published via EuroTLX's website and distributed to customers:  5.2.3, 5.2.3.1, 5.2.3.2, 5.2.3.4, 5.2.3.5, 6.1.4,

In subsequent issues, where amendments have been made to the previous version, these changes will be identified using a series of red side bars as illustrated opposite.

In subsequent issues, where amendments have been made to the version 4.0, these changes will be identified using a series of side bars as illustrated opposite.

## 1.5. Enquiries

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

- Telephone: +39 0272426409 – 348 – 606 – 647

- Service Desk Free Toll Number: 00800 26772000
- Email: [service-desk@borsaitaliana.it](mailto:service-desk@borsaitaliana.it); [clients-services@borsaitaliana.it](mailto:clients-services@borsaitaliana.it)

## 2. Customer Interfaces

In the interest of increased performance and flexibility a new approach to customer interfaces will be introduced which is described below.

### 2.1. Overview

The following interfaces and protocols will now be available to participants (illustrated in Figure 1)

- Trading Interface  
order / quote entry and immediate confirmation of automated trades
- Post Trade Interface  
'Enriched' trade confirmation of automated trades (including cancellations)<sup>1</sup>  
Own Trades Book Download (OTBD)
- Drop Copy Interface  
'Copy To' functionality  
Own Order Book Download (OOBD)
- Reference Data Service

With the introduction of Millennium Trading System, EuroTLX will standardise on FIX 5.0 SP2 for all of the above customer interfaces with the exception of Reference Data Service<sup>2</sup>. In addition a new fixed width Native interface will be introduced for the Trading Interface only. Participants will connect to each interface via a FIX or native Gateway, depending on the functionality they require.

- Native Trading Gateway
- FIX Trading Gateway
- FIX Drop Copy Gateway
- FIX Post Trade Gateway

---

<sup>1</sup> Including any Exchange initiated cancellations

<sup>2</sup> Will be supported via FTP and SFTP

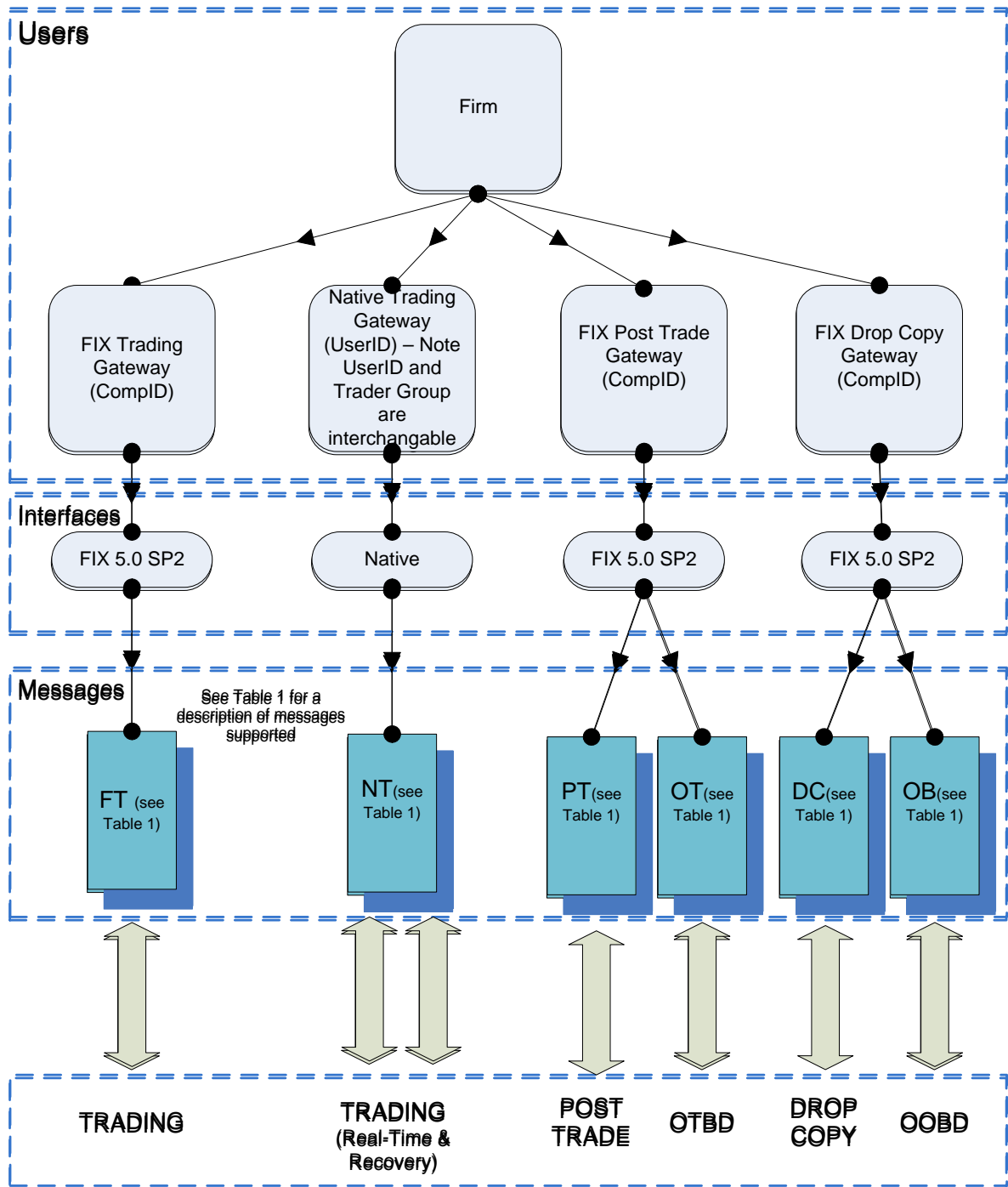


Figure 1 – Customer Interfaces

**Table 1 - Functional messages supported**

Interface	Message Group	Direction	Functional messages supported
FIX Trading	FT	Inbound (to Exchange)	D - New Order Single F - Order Cancel Request q - Order Mass Cancel Request G - Order Cancel/Replace Request S - Quote Z - Quote Cancel R - Quote Request AJ - Quote Response AG - Quote Request Reject
FIX Trading	FT	Outbound (from Exchange)	8 - Execution Report 9 - Order Cancel Reject r - Order Mass Cancel Report AI - Quote Status Report b - Mass Quote Acknowledgement j - Business Message Reject R - Quote Request AJ - Quote Response S - Quote CW - Quote ack
Native Trading <sup>3</sup>	NT	Inbound	D - New Order Single F - Order Cancel Request q - Order Mass Cancel Request G - Order Cancel/Replace Request S - Quote M - Missed Message Request a - Quote Request b - Quote Request Reject d - RFQ Quote f - Quote Response
Native Trading	NT	Outbound	8 - Execution Report 9 - Order Cancel Reject r - Order Mass Cancel Report N - Missed Message Request Acknowledgement P - Missed Message Report j - Business Reject a - Quote Request b - Quote Request Reject c - Quote Status Report d - RFQ Quote e - Quote Ack f - Quote Response g - RFQ Execution Report
Post Trade	PT	Inbound	AE - Trade Capture Report
Post Trade	PT	Outbound	AR - Trade Capture Report Acknowledgement
Post Trade	OT	Inbound	AD - Trade Capture Report Request BW - Application Message Request
Post Trade	OT	Outbound	AQ - Trade Capture Report Request Acknowledgement

<sup>3</sup> Note – for consistency FIX message identifiers are used on the Native Interface. However, format and content of the messages are different.

			AE - Trade Capture Report BX - Application Message Request Acknowledgement
Drop Copy	DC	Outbound	8 - Execution Report
Drop Copy	OB	Inbound	AF - Order Mass Status Request
Drop Copy	OB	Outbound	8 - Execution Report

## 2.2. Message workflow

Participants must use the Trading Interface (FIX or native) to send order and quote messages to Millennium Exchange via configured Users. In response, Millennium Exchange will send Execution Reports over the interface used giving the status of the order / executable quote.

Should a trade occur then the order / quote status will be immediately updated by an Execution Report<sup>4</sup> sent from the Trading Interface over the participant connection that sent in the order / quote. In addition to order status the Execution report will summarise the details of the trade and provide among the others the following information:

- Side
- Trade Quantity
- Trade Price
- Clearing House defined as Counterparty or Counterparty to the Trade
- Trade ID<sup>5</sup>
- Order ID
- Transaction Time

In addition, an 'enriched' Trade Capture Report will be sent via the Post Trade Interface. This will include the trade details specified in the Execution Report as well as the following information:

- ISIN
- Matching Type (Continuous Trading)
- Clearing Type (is the trade cleared or not)

This means that participants will receive two messages notifying them of the trade. They will be free to choose which message to act on before submitting the next message.

Participants will be able to link the Execution Report and Trade Capture Report using either the *ExecID* or *ClOrdID* tags<sup>6</sup>.

Participants will be able to link the Execution Report and RCG file record using *Trade ID* and *Unique Transaction Reference* (see section 5.1.1)

---

<sup>4</sup> Note – for Executable Quotes two Execution Reports will be sent – one for each side of the Quote

<sup>5</sup> Note – *TrdMatchID* for FIX, *TradeMatchID* for Native

<sup>6</sup> Note – respectively *Execution ID* and *Client Order Id* in case of Native protocol

Participants should note:

- In normal circumstances the Trade Capture Report will be delivered after the Execution Report.
- Execution Reports will be sent to the CompID that sent the order or quote.
- Customers have the option to cancel at firm level so a "master" CompID could cancel all orders entered for the firm by all other CompIDs.
- Orders / quotes sent via one CompID cannot be modified or cancelled using another CompID (with the exception of "master" CompID cancellations).
- A cancel on disconnect facility has been provided as a means of managing orders if a session is lost. See [Section 3.7 Cancel on disconnect / logout](#) for more details.
- A Post Trade / Drop Copy User can be configured to receive all Trade Capture Reports / Execution Reports for the Firm, or selected CompID / UserID.
- Customers are recommended to have a separate connection to the Post Trade Gateway for Real Time Trade Capture Reports and the OTBD service.
- Where a customer is using 'Copy To' functionality, a separate connection to the Drop Copy Gateway will be required over and above that used to support the OOB service.

## 2.3. Time synchronisation

As per the FIX standard, all times on FIX trading messages must be specified in UTC. Customers are recommended to use the Sending Time in the FIX logon message sent by Millennium Exchange to synchronise system clocks. Also all times on Native messages are in UTC.



## 2.4. Reference Data Service

Reference data will be managed by a new Reference Data Service structured as follows:

- 1) It will be provided to the Participants a set of 'flat files' that includes the instrument reference data. These files are available via FTP on a LSEG ftp server. Full details of the interface are specified in the documents "MIT305 – EuroTLX - Markets Reference Data" and "MIT306 EuroTLX - Instrument Currency".

In addition to the flat file a subset of reference data will be available via the Market Data feed each morning:

- Symbol (unique identifier)
  - Instrument status
  - ISIN
  - Segment
  - Tick
  - Price Bands Tolerances
  - Dynamic Circuit Breaker Tolerances
  - Static Circuit Breaker Tolerances
- 2) The ANA files, used also on the previous Trading System, will be available via FTP on a EuroTLX ftp server. It should be noted that some minor changes are introduced due to the migration on the MIT Trading System. Both "basic" and "enriched" versions of ANA files will be provided. Full details of the interfaces are specified in the documents "EuroTLX – ANA File Service – Base" and "EuroTLX – ANA File Service – Enriched".

## 2.5. Technical details

Technical details of all interfaces are provided in the following documents:

- MIT202 EuroTLX - Trading Gateway (FIX 5.0) Specification
- MIT203 EuroTLX - Native Trading Gateway Specification
- MIT204 EuroTLX - Post Trade Gateway (FIX 5.0) Specification
- MIT205 EuroTLX - Drop Copy Gateway (FIX 5.0) Specification
- MIT301 EuroTLX – Guide to Market Data Services
- MIT303 EuroTLX - MITCH Specification
- MIT305 EuroTLX – FTP Services Markets Reference Data
- MIT306 EuroTLX – FTP Services Instrument Currency
- MIT308 EuroTLX - Trading Calendars
- MIT309 EuroTLX - RFQ Market Maker Reference Data
- MIT601 EuroTLX – Report Reconciliation Service
- EuroTLX – ANA File Service - Basic

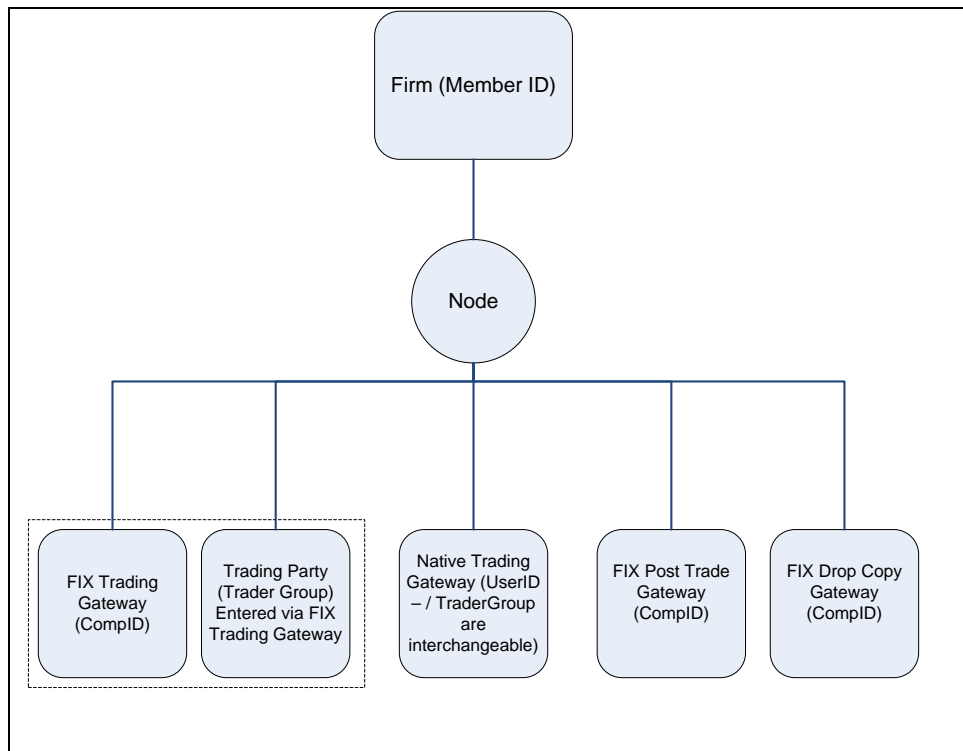
- EuroTLX – ANA File Service – Enriched
- EuroTLX – Members File Service
- EuroTLX – RCG File Service
- EuroTLX – Market Statistics - TLX\_Listino.txt File Service

# 3. User Configuration

A new, more flexible, approach will be taken to the configuration of participants on Millennium Exchange. EuroTLX will work closely with customers to agree a configuration that meets requirements but the following sections are provided for background.

## 3.1. Structure

Generically, a 3-tier hierarchy will be introduced consisting of Firm, Node and User. Each User will have an associated Role.



**Figure 2 – User hierarchy**

Each level in the hierarchy is described in the following sections.

## 3.2. Firm

A Firm represents the highest level when depicting a participant and is intended to represent the membership under which business is routed to the Exchange. The Firm is identified by a unique Member ID. No technical or business enablement will be held against a firm and there is a one to many relationship between Firm and Node.

## 3.3. Node

A Node represents a logical grouping of Users (see below), this is a new concept that forms part of the core Millennium Trading product.

A Node by itself has no technical meaning but allows customers a degree of further classification/segmentation within their business, for example a firm with different clearing arrangements can segment its business accordingly. Once a Node is created all Users falling under that Node inherit the same configuration.

## 3.4. User

A User represents a generic business or technical enablement, such as a trading desk or a FIX Gateway. The exact type of User is defined by the associated Role. The same User can only be configured under one node. The User can only have one of the Roles outlined below:

### Broker Role:

Users belonging to this Role could trade on the full list of instruments the Firm is configured to negotiate on; the list could be either the complete market or a specific part of it, depending on the Firm capability to operate with settlement services provided by CSD Monte Titoli (or other cross CDS in T2S) and/or Euroclear/Clearstream and/or with CCP clearing services. Users belonging to this Role could enter orders having Dealing Capacity set to Agency (A), Matched Principal (R) and/or Unmatched Principal (U)<sup>7</sup> for all segments except for FBP and FPR. Unmatched Principal has to be intended as the activity defined as Principal in the Rules, but which cannot be considered as MiFID II Matched Principal.

### Liquidity Provider Role:

Users belonging to this Role could trade only on a specific Segment except FBP and FPR (i.e. Users dedicated only to FGS, Users dedicated only to EEQ, etc.); each User can trade only those instruments, belonging to a specific Segment, the Firm has liquidity obligations on; Users belonging to this Role could enter only orders and quotes having Dealing Capacity set to Principal (P) or Proprietary (G).

---

<sup>7</sup> Please note that Dealing Capacity Values are:

- on the Native Protocol: 1= Matched Principal, 2= Principal, 3= Agency, 5= Proprietary, 6= Unmatched Principal
- on the FIX: R= Matched Principal, P= Principal, A= Agency, G= Proprietary, U= Unmatched Principal

### Operator Role:

Users belonging to this Role could trade on the full list of instruments of the segments FBP and FPR. Users belonging to this Role could enter:

- On the segment FBP: orders having Dealing Capacity set to Agency (A), Matched Principal (R), Unmatched Principal (U) or Principal (P).
- On the segments FBP and FPR: quotes having Dealing Capacity set to Principal (P) .

Member firms are advised that Comp ID must follow a specific structure:

- for Broker profile Users and Operator profile Users enabled only to enter orders and Request RFQ having Dealing Capacity A:  
"TX" + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) + "0"  
+ progressive code (2 digits);
- for Broker profile Users and Operator profile Users enabled only to enter orders and Request RFQ having Dealing Capacity U and/or R:  
"TX" + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) +  
"V" + progressive code (2 digits);
- for Broker profile Users enabled only to Request RFQ having Dealing Capacity A, U and/or R, and for Operator profile Users enabled to only Request and Respond RFQ having Dealing Capacity A, U and/or R:  
"TX" + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) +  
"R" + progressive code (2 digits);
- for Liquidity Provider profile Users enabled only to enter orders and quotes having Dealing Capacity P and/or G:  
Segment Code CompID (2 char) + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) + "S" + progressive code (2 digits);
- for Liquidity Provider profile Users and for Operator profile users enabled to only Request and Respond RFQ having Dealing Capacity P:  
Segment Code CompID (2 char) + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) + "R" + progressive code (2 digits);
- for Operator profile Users enabled to enter orders, quotes, Request and Respond RFQ having Dealing Capacity P:  
Segment Code CompID (2 char) + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) + "P" + progressive code (2 digits);
- In case of a User having both Liquidity Provider and Operator roles, a Comp ID dedicated to RFQ Request and Respond may be created with the following structure:  
"AL" (all segments) + CED Code (4 digits) + "FT" (for FIX users)/"NT" (for native users) + "R" + progressive code (2 digits)

Segment Name	Description	Segment Code ComplID
DGS	Domestic Settled GOVIES & Sovereign	DS
FGS	Foreign Settled GOVIES & Sovereign	FS
DCF	Domestic Settled Corporate, Financial, Supra, Emerging, Other Bonds	DF
FCF	Foreign Settled Corporate, Financial, Supra, Emerging, Other Bonds	FF
DBB	Domestic Settled BANKING BONDS	DB
FBB	Foreign Settled BANKING BONDS	FB
DCE	Domestic Settled CERTIFICATES	DE
FCE	Foreign Settled CERTIFICATES	FE
EEQ	ETLX EQUITIES	EQ
FBP	Foreign Settled Bond Professional	FP
FPR	Foreign Settled Professional Request	FR

EuroTLX could use a different value in the ninth char as describe in the above structure to identify other activity combination.

This structure ensures that Comp ID pass through trading and post trade validation.

It has to be noted that all the activity passing through ComplID market as “S” in the ninth char will be flagged as Liquidity Provision Activity according to Liquidity Provider definition provided in the Rules.

### 3.4.1. TraderGroups for FIX Connections

This Role enables the User as a ‘Trading User’ which represents an identifiable trading entity such as trading desks, automated trading applications or individuals.

Specific enablements such as the ability to enter orders or the ability to market make will be controlled by attributes of the Trader Role associated with the TraderGroup.

Participants can continue to identify orders using TraderID<sup>8</sup>, the TraderID will be returned in Execution Reports and Trade Capture Reports.

It should also be noted that orders on the book are effectively ‘owned’ by the ComplID identified by TraderGroup, that was used to submit the order (see sections 5.1.1 and 5.2.1).

### 3.4.2. TraderGroups for Native connections

Participants should note that Users on the native interface are connected and identified via UserIDs. Existing TraderGroups can be used interchangeably as UserIDs for all Native Trading connections.

<sup>8</sup> Specified in the FIX message using Tag 448 – PartyID with Tag452 – Party Role set to 12

Native UserIDs are used to denote a single connection to Millennium Trading Product and as such individual User/TraderGroups are not transferrable across multiple connections.

### **3.4.3. FIX Connection Users**

These Roles enable the user as a 'FIX User' which represents a discrete FIX connection to a specified Millennium Exchange FIX Gateway. Each of the FIX Gateways will have a Role associated with them to enable the following User Types to be defined:

- FIX Trading Gateway User
- FIX Post Trade Gateway User – Real Time Enriched Trade Reports
- FIX Post Trade Gateway User – Own Trade Book Download
- FIX Drop Copy User – Real Time Execution Reports
- FIX Drop Copy User – Own Order Book Download

Each FIX Users will be identified by a unique FIX CompID and can be only one of the above types.

For Own Trade Book and Own Order Book downloads the TraderGroups for which the requests are made must be permissioned for each FIX CompID making the request.

### **3.4.4. Native connection Users**

As set above Native connections are identified via the UserID. Only the Native Trading Gateway User will be supported.

TraderGroups will be used as the UserID for all Native Trading connections. To avoid clearing and settlement failures for cleared securities these need to be as per the clearing static data form. It should also be noted that orders on the book are effectively owned by the UserID that was used to submit the order.

## **3.5. Connection security**

Following the FIX standard, Message Authentication will not be supported on Millennium Exchange. However, each CompID will be assigned a password on creation that must be specified in the first logon message. Participants will be required to change the default password on first logon.

Following the first logon participants can manage passwords using the Logon message. Customers will now not be required to change passwords after a configurable number of days.

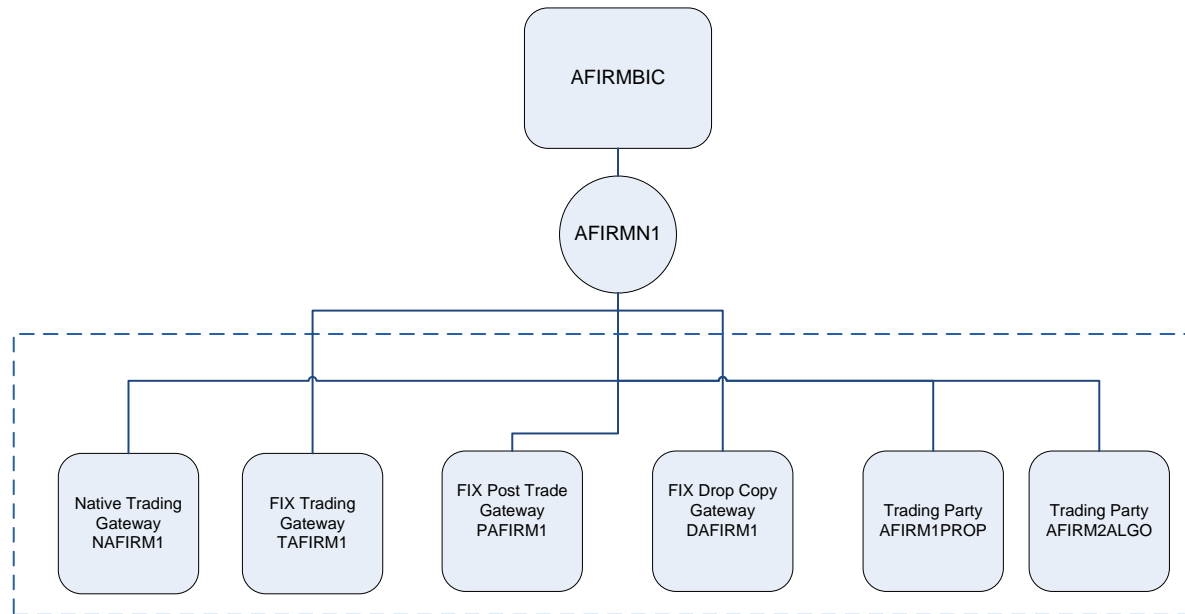
### **3.6. Example configuration**

Participants can have any number of trading nodes or trading groups on request. An example configuration for a typical trading participant for illustrative purposes is illustrated in Figure below.

Participants can discuss individual Test and Live configurations with the EuroTLX Company.



**Figure 3 – Example configuration**



Assumes the participant has a single membership entity, and requires a connection to all interfaces

- All Trading Activity is done under the FirmID (AFIRMBIC)
- Native Trading Gateway NAFIRM1 can send messages only for NAFIRM1
- FIX Drop Copy Gateway DAFIRM1 can request orders for Trading Parties AFIRM1PROP and AFIRM2ALGO and Native CompID NAFIRM1
- FIX Trading Gateway TAFIRM1 can send messages on behalf of Trading Parties AFIRM1PROP and AFIRM1ALGO
- FIX Post Trade Gateway can send request Own Trade Book Downloads for AFIRM1PROP and AFIRM2ALGO and Native CompID NAFIRM1

### **3.7 Cancel on disconnect / logout**

A cancel on disconnect and cancel on logout facility will be provided. A disconnect is defined as a drop in the TCP session between the participant and Millennium Exchange, whether due to either party.

Cancel on disconnect / logout is configured for a CompID/UserID. Should the FIX / Native Trading Gateway associated with that CompID disconnect, then all orders / Executable Quotes entered under that CompID/UserID will automatically be deleted by Millennium Exchange. Participants can have a 'wait' period configured by which the system will wait a defined length of time before deleting orders / quotes.

Where a CompID/UserID has been opted in, if required, customers can elect to specifically exclude GTD orders from this automatic deletion process.

On reconnection, Millennium Exchange will send Execution Reports for the deleted orders and Quote Status messages for the deleted Executable Quotes.

### **3.8. Message throttling**

In order to safeguard the Exchange Trading System against 'abnormal' participant behaviour each User/CompID enabled for access to the Native and FIX Trading Gateways will not be allowed to exceed a specified message throughput determined by EuroTLX Company.

Every message sent by a participant that means that the maximum message rate of a User/CompID is exceeded (over a second period) will be rejected via a Business Message Reject for FIX and a Reject message for the Native Trading interface.

A User/CompID will be disconnected by the Trading Gateway if its message rate exceeds its maximum rate more than a configurable number of times in any 30 second duration. In such a case, the server will transmit a Logout message and immediately terminate the TCP/IP connection.

The maximum throughput of each participant's User/CompID will be defined by the Exchange considering the feedback provided by the Participants.

## 4. Market Structure

The same trading services will continue to be supported on Millennium Trading System following the transition, with identical market functionality.

### 4.1. Market configuration

Millennium Exchange will support the following Markets:

Trading Service	Description	Coverage
EuroTLX	“EuroTLX Market”	Market for the trading of shares, DR, convertible bonds, certificates, covered warrants, bonds

Table 2 – Trading Services

### 4.2. Business categorisation of securities

From a business perspective an individual instrument is assigned to a grouping to form a *trading segment*. A specific *Trading Service* is a number of trading segments that share the same market model.

The *Millennium Exchange Business Parameters for EuroTLX Document* maps these exact groupings and allows us to lay down criteria that operate at each specific grouping level.

The sector identifies a set of securities within a segment, characterised by common trading mechanisms.

For each market segment there is a specific sector (identified by the market “segment name” plus “O”) dedicated for the direct distribution of financial instruments in a session (primary market phase) segregated by the following trading phase (secondary market phase).

After the end of the distribution period each financial instrument involved will be moved to a different sector of the same market segment.

The technical definition of market, segment and sector may differ from the corresponding regulatory criterion.

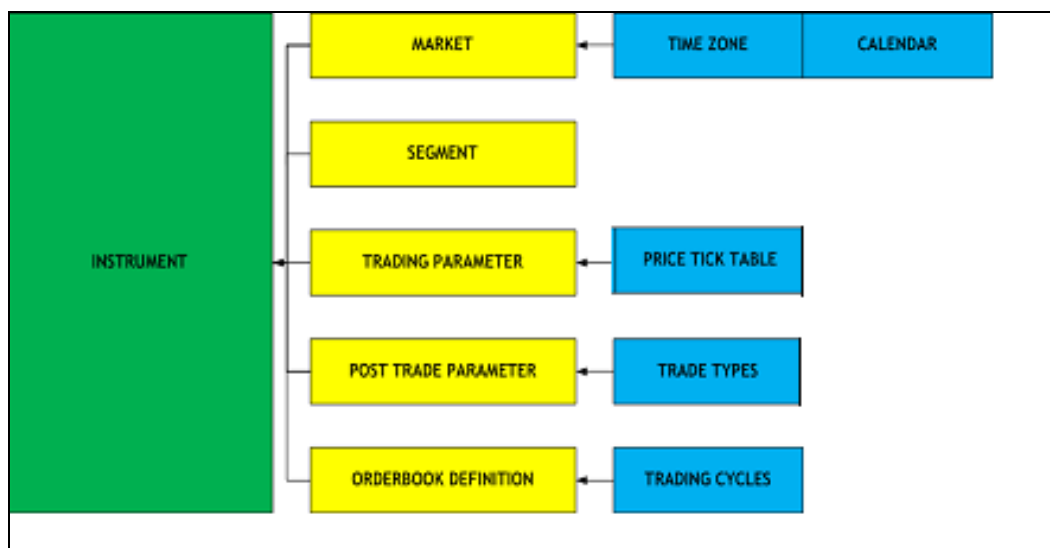
Please refer to: **MIT305 EuroTLX - FTP Services Reference Data Specification** for segment/sector mapping.

### 4.3. Technical operation parameters

The sectorisation documented above has been maintained to ease transition to Millennium Exchange and to maintain categorisations from an EuroTLX Rules and wider regulatory perspective that are not specifically relevant to the trading system. Trading segments and trading sectors are not key fields for Millennium Exchange trading message entry. They will however, continue to be defined and provided via the Reference Data Service.

In Millennium Exchange, instruments are technically structured as follows:

- Each instrument will be assigned to a Market and Segment
- Instruments are assigned to an Order Book with a pre-determined Trading Cycle
- Instruments will have specified instrument, Trading and Post Trade parameters assigned that dictate how the instrument is traded
- A Trading parameter consists of price tick table



**Figure 4 – Technical structure of an instrument on Millennium Exchange**

The following section describes the structure components and parameters. The parameters will be available via the Reference Data Service (see Section 2.4).

## 4.4. Trading Sessions

Although there will continue to be a concept of 'Period' (or 'Sessions' on Millennium Exchange) the general approach to trading sessions will be simplified. Each instrument will generally follow a simple trading day consisting of a quoting period and continuous trading. Timings and associated trading parameters will vary according to the market model and will be communicated in due course. In addition, and as today, market control actions invoked by EuroTLX will potentially override the normal schedule.

As an instrument moves from one trading session to another the new Millennium Exchange Information system will disseminate the new status of that instrument via the security status message. Please see MIT303 EuroTLX - MITCH Specification for further information. The following status will be sent:

- Pre Trading (Start of Trading)
- Quoting Period
- Continuous Trading
- Resume Order Deletion period
- Halt
- Trading Stop
- Market Closed
- Post Close
- End of Post Close
- No Active Session

#### 4.4.1. Quoting Period

During Quoting Period only Liquidity Providers are allowed to advertise their quotes before the start of continuous trading

This would be a method of preparing the order-book, populating the bid-ask of the instruments for the day, before the rest of the market starts entering their interest. Any quotes entered during this period should not execute, but they could execute afterwards during Continuous Trading.

Hence, quotes that can execute during Quoting Period would be expired as per the Self Execution Prevention Criteria CBO (Cancel Both Orders)<sup>9</sup>.

#### 4.4.2. Continuous Trading

During continuous trading session executions of quotes and orders are prevented if both sides of a trade would end up having Principal (P) dealing capacity<sup>10</sup>.

In case any potential executions as described above, the involved orders and quotes should be expired as per the Self Execution Prevention Criteria CIO<sup>11</sup> (Cancel Incoming Orders).

However, the owners of both sides of the trade also could have the option to opt out of the above default behaviour for a given instrument and to go ahead with the trade for that instrument. Opt Out option is available only for a subset of instruments defined by EuroTLX.

Liquidity providers in order to opt out of the above behaviour will use a new capacity Proprietary (G), meaning pure own account as previously specified for capacity Principal (P), for the purpose of sending opted-out orders and quotes. These orders and quotes will execute against each other (will not be executed if both are from the same firms) and against Agency (A), Matched Principal (R) and Unmatched Principal (U) capacities, but will not execute against an order/quote with a Principal (P) capacity.

---

<sup>9</sup> Expires both the resting quote and the aggressing quote

<sup>10</sup> Execution Prevention does not apply to some specific segment and sectors as highlighted in the file "Millennium Exchange Business Parameters" available on EuroTLX website.

<sup>11</sup> Leaves the resting order/quote while expiring the incoming quote/order. If it is a dual sided quote, both the sides of the quote should be expired.

		Incoming Order/Quote with Dealing Capacity				
Resting Order/quote with Dealing Capacity		Quote (P)	Quote (G)	Order (P)	Order (A), (U) or (R)	Order (G)
	Quote (P)	Execution Prevented	Execution Prevented	Execution Prevented	Trade	Execution Prevented
	Quote (G)	Execution Prevented	Trade if not from the same firm	Execution Prevented	Trade	Trade if not from the same firm
	Order (P)	Execution Prevented	Execution Prevented	Execution Prevented	Trade	Execution Prevented
	Order (A), (U) or (R)	Trade	Trade	Trade	Trade	Trade
	Order (G)	Execution Prevented	Trade if not from the same firm	Execution Prevented	Trade	Trade if not from the same firm

**Table 3 –Dealing capacity based SEP validations**

## 4.5. Symbology

A new approach will be taken to the identification of trading instruments, an instrument must now be identified on trading messages using a unique InstrumentID<sup>12</sup>. The InstrumentID will remain constant for the lifetime of the instrument, even if data pertaining to that instrument changes. However participants should note that in some cases (i.e.: corporate action).an instrument will continue to be deleted and re-added should the ISIN be changed.

EuroTLX will provide InstrumentIDs via the Reference Data Service and over the Market Data Feeds.

Full details are specified in the Technical Details documents.

<sup>12</sup> Specified in Tag 48 – SecurityID on FIX and Native messages

## 5. Orders and Quotes

The behaviour of an order or quote is defined by a combination of its Order Type and its time in force.

It should be noted that the Order Types are not *explicitly* stated on FIX and Native messages, but are defined via a combination of tags.

Please see the Technical Details documents for further information.

### 5.1. Order types

Table below summarises the Order Types supported on Millennium Exchange:

Order Type	Description
Limit Order	A limit order is an anonymous priced order that is fully displayed when persistent in an order book and may execute at prices equal to or better than its limit price.
Market Order	A market order is un-priced, and therefore not price forming, but has price priority over all priced orders. Market orders cannot persist on the order book during continuous trading.

**Table 4 – Order Types**

#### 5.1.1. Order entry fields

The following table shows which fields are mandatory and which are optional for a Millennium Exchange Order.

Field	Required	Description	Possible Values
<b>Instrument</b>	Yes	The unique identifier of the security.	
<b>Side</b>	Yes	Whether the order is to buy or sell.	- Buy - Sell
<b>Order Type</b>	Yes	the type of the order	- Market - Limit



<b>Time in force</b>	No	The duration the order is valid for. If the time in force is not stated, the system assumes it to be a DAY order. Even if it's not a TIF parameter, in this section it's highlighted that on MIT Trading it's possible to set the parameter "Auto Cancel Orders on Disconnect" to specify if the order should be cancelled in case of disconnection	<ul style="list-style-type: none"> <li>- DAY</li> <li>- IOC</li> <li>- FOK</li> </ul>
<b>Order Quantity</b>	Yes	The quantity being bought or sold. This should be a whole number that is greater than zero.	
<b>Disclosed Quantity</b>	No	This will be the same as Order Quantity.	
<b>Price</b>	No	The maximum/minimum price a buy/sell order may be executed at. This value should be greater than zero and a multiple of the instrument's 'Tick'. This field is required if the order is a Limit Order.	
<b>Capacity</b>	Yes	Denotes if the order is entered as an 'Agency' (on behalf of a client), 'Principal' (own account), 'Proprietary' (own account), Unmatched Principal (own account) or Matched Principal. Referring to Settlement Data sent to XTRM, the following mapping is implemented: <ul style="list-style-type: none"> <li>- Agency (A) -&gt; Third Party Account</li> <li>- Principal (P), Proprietary (G), Unmatched Principal (U) and Matched Principal (R)-&gt; Own Account</li> </ul> Referring to RCG file, the following mapping is implemented: <ul style="list-style-type: none"> <li>- Agency (A) -&gt; T</li> <li>- Principal (P), Proprietary (G), Unmatched Principal (U) and Matched Principal (R)-&gt; P</li> </ul> Brokers could enter only Agency, Matched Principal and Unmatched Principal orders, Liquidity Provider could enter Principal and Proprietary Orders.	<ul style="list-style-type: none"> <li>- Any other trading capacity (AOTC) - Agency</li> <li>- Dealing on own account (DEAL) - Principal</li> <li>- Dealing on own account (DEAL) - Proprietary</li> <li>- Dealing on own account (DEAL) - Unmatched Principal</li> <li>- Matched Principal (MTCH)</li> </ul>
<b>Trading Party</b>	Yes	The trading party of the order is identified by this field. For Exchange users this will be the trader group	
<b>Client Identifier</b>	No	Identifies the client reference of the order. This field is referred as <i>Account</i> (tag 1) for FIX and <i>Account</i> for Native.	

<b>Unique Transaction Reference</b>	Yes	This will be the unique transaction reference of the order. ( <i>ClOrdID</i> for FIX, <i>Client Order Id</i> for Native). Please refer to par. 5.5 for additional details.	
<b>Clearing Account</b>	Yes	Identifies the clearing account for the order	- Client - House
<b>Order Source<sup>13</sup></b>	No	Defines the source of the incoming order	- 1 (Market participant that deals on own account) - 3 (Institutional client of the market participant) - 7 (Retail client that avails itself of an orders router different from the market participant) - 8 (Institutional client that avails itself of an orders router different from the market participant) - 9 (Retail client of the market participant)
<b>ExecInst</b>	No	Specifies if the order has to be cancelled upon a disconnection or a log out. The absence of this field is considered as that the member firm wants to go ahead with the user level configuration in the system for its orders. It should also be noted that a member firm can <u>only</u> override the user level configuration of cancel on disconnection/log out by indicating <u>not</u> to do so for some specific orders.	
<b>Client ID</b>	Yes	Identifier of the client of the member firm.	- None (when capacity is Dealing on own account (DEAL) or Matched Principal (MTCH)) - AGGR (in the case of aggregated orders) - PNAL (in the case of orders pending allocations) - Short Code <sup>14</sup>

<sup>13</sup> It should be noted that, the source of the incoming order can only be specified for orders. It is not applicable for quotes.

<sup>14</sup> Client ID, Investment Decision Maker and Executing Trader will be provided by the member firm as Short Codes:

- on the Native Protocol, the short code will be a 4 bytes field so a value between 4 and  $2^{32} - 1$ .
- on the FIX the short code will be a number between 4 and  $2^{32} - 1$

The association between the Short Code and the corresponding Long Code will have to be provided to the trading venue via the Member Portal.

<b>Investment Decision Maker ID</b>	Yes	Identifier of the person or the algorithm within the member firm who is responsible for the investment decision.	- None (when the investment decision in relation to the order was not made by a person or algorithm within the member firm) - Short Code <sup>15</sup>
<b>Executing Trader ID</b>	Yes	Identifier of the person or algorithm within the member firm who is responsible for the execution of the order.	- CLIENT (when the execution of the order was not done by a person or algorithm within the member firm) - Short Code <sup>16</sup>
<b>Qualifier</b>	Yes	Specifies: <ul style="list-style-type: none"> <li>• If the Client ID is: <ul style="list-style-type: none"> <li>- a LEI (Legal Entity Identifier) for Legal Entities</li> <li>- a National Client Identifier (e.g. Fiscal Code for Italy) for Natural Persons</li> </ul> </li> <li>• If the Investment Decision Maker ID is: <ul style="list-style-type: none"> <li>- a National Client Identifier for Natural Persons</li> <li>- an Algorithm</li> </ul> </li> <li>• If the Executing Trader ID is: <ul style="list-style-type: none"> <li>- a National Client Identifier for Natural Persons</li> <li>- an Algorithm</li> </ul> </li> </ul>	- Algorithm: applicable only for Investment Decision Maker ID and Executing Trader ID. - Legal Entity: applicable only for Client ID - Natural Person It will be required to specify the field Qualifier for a Short Code.
<b>Algorithm Flag</b>	No	Provides the ability to specify if the order was generated by an algorithm.	
<b>DEA Flag</b>	No	A flag to denote whether the order was submitted to the trading venue using Direct Electronic Access (DEA).	

**Table 5 – Order entry fields**

<sup>15</sup>Client ID, Investment Decision Maker and Executing Trader will be provided by the member firm as Short Codes:

- on the Native Protocol, the short code will be a 4 bytes field so a value between 4 and  $2^{32} - 1$ .
- on the FIX the short code will be a number between 4 and  $2^{32} - 1$

The association between the Short Code and the corresponding Long Code will have to be provided to the trading venue via the Member Portal..

<sup>16</sup> Client ID, Investment Decision Maker and Executing Trader will be provided by the member firm as Short Codes:

- on the Native Protocol, the short code will be a 4 bytes field so a value between 4 and  $2^{32} - 1$ .
- on the FIX the short code will be a number between 4 and  $2^{32} - 1$

The association between the Short Code and the corresponding Long Code will have to be provided to the trading venue via the Member Portal.

Following tables specify the FIX tags and Native fields that should be used to define each order type.

	FIX Tag		
Order Type	Order Type	Anonymity 17	Display Qty
Limit Order	2	Y	TotalQty
Market Order	1	Y	TotalQty

**Table 6 – FIX Tags**

	Native Field		
Order Type	Order Type	Anonymity	Display Qty
Limit Order	2	0	TotalQty
Market Order	1	0	TotalQty

**Table 7 – Native Fields**

Full details of FIX tags and Native fields are provided in MIT202 – Trading Gateway (FIX 5.0) Specification and MIT203 – Native Trading Gateway Specification.

### 5.1.2. Time in Force

The following table summaries all the Millennium Exchange Time In Forces.

Time in Force	Behaviour
<b>DAY</b>	Orders with the DAY time in force will be expired at the end of the trading on the day they are submitted.
<b>IOC<sup>18</sup></b>	Executed on entry and any remaining unexecuted volume deleted.
<b>FOK</b>	Executed in full on entry or immediately expired. An FOK order may not be partially filled.

<sup>17</sup> Absence of this field is interpreted as Anonymous

<sup>18</sup> Immediate or Cancel

**Table 8 – Millennium Exchange Time In Force**

**5.1.3. Order Type / Time In Force combinations**

Table below specifies which combinations of Order Type and Time In Force are valid on Millennium Exchange.

TIF		Limit	Market	Quote
		IOC	Y	Y
FOK		Y	Y	N
DAY		Y	Y*	Y

\* Market Day order is treated as an IOC order

**Table 9 – Order / Time In Force**

**5.1.4. Order Type - Time In Force / Trading Session combinations**

Table below specifies which combinations of Order Type, Time In Force and Trading Sessions are valid on Millennium Exchange.

Order Type		TIF	Start of Trading	Quoting Period	Continuous Trading	CPP	Halt	Post Close
		IOC	N	N	Y	N	N	N
FOK		N	N	Y	N	N	N	
DAY		N	Y	Y	N	N	N	
Market		N	N	Y	N	N	N	
Limit		N	N	Y	N	N	N	
Quote		N	Y	Y	N	N	N	

**Table 10 – Order - Time In Force / Trading Sessions**

**5.1.5. Order Source**

The market participant, when entering the order, may indicate in the apposite field an identification code that differs depending on the order source. The classification is based on the type of order source, in the interest of which the order is entered in the market and prescinds from the technological solutions adopted for the transmission

of the orders (therefore regardless of the utilization of on line trading systems, rather than manual entering of orders and of the utilization or not of computer-based systems for the automatic generation of orders).

The admitted codes are the following:

Code	Order source	Description
1	Market participant that deals on own account	The order source identifies all the orders entered in the market on own account.
3	Institutional client of the market participant	The order source identifies all the orders entered in the market on behalf of the institutional clients of the market participant
7	Retail client that avails itself of an orders router different from the market participant	The order source identifies all the orders entered in the market on behalf of the retail clients of the orders router who accesses to the market through the market participant
8	Institutional client that avails itself of an orders router different from the market participant	The order source identifies all the orders entered in the market on behalf of the institutional clients of the orders router who accesses to the market through the market participant
9	Retail client of the market participant	The order source identifies all the orders entered in the market on behalf of the retail clients of the market participant

It should be highlighted that:

- institutional clients mean: the subjects referred to in Annex II, Part 1 of Directive 2004/39/EC (MiFID)
- retail clients mean: the subjects who are not institutional clients
- orders routers: the subjects which are authorised for the reception and transmission of the orders (such definition includes also chains of intermediaries).

## 5.2. Quotes types

A quote is a pair of buy and sell interest submitted simultaneously, and managed as a single entity. Quotes are generally used by participants interested in continually maintaining two sided presence in the market. These participants, Liquidity Providers, will enter Anonymous Quotes.

Table below summarises the Quote Types supported on Millennium Exchange:

Quote Type	Description
Executable Quotes	The Anonymous Quote is fully visible, electronically executable, available only on certain trading services

**Table 11 – Quote Types**

A Trading Party can only maintain one quote for an instrument. Hence if a new quote is submitted, it will replace the current quote.

It will be available the Single Quote functionality, more in detail a specific participant (Liquidity Provider) could submit a Single Sided Quote (SSQ), Anonymous, with either offer or bid side. If the price and size values are specified as zeros for a side, then it will be considered that particular side being not submitted in the SSQ.

A SSQ could be amended by overwriting the same with another Single Sided Quote for the same side.

### 5.2.1. Quote entry fields

The following table shows which fields are mandatory and which are optional for a Millennium Exchange Quote.

Field	Required	Description	Possible Values
<b>Instrument</b>	Yes	The unique identifier of the security.	
<b>Bid Size</b>	Yes	Bid quantity. This should be a whole number that is greater than zero.	
<b>Bid Price</b>	Yes	Bid Price	
<b>Offer Size</b>	Yes	Offer quantity. This should be a whole number that is greater than zero.	
<b>Offer Price</b>	Yes	Offer Price	

<b>Capacity</b>	Yes	Denotes if the quote is entered as 'Principal' (own account) and 'Proprietary' (own account) Referring to Settlement Data sent to XTRM, the following mapping is implemented: - Principal (P), Proprietary (G)-> Own Account Referring to RCG file, the following mapping is implemented: - Principal (P), Proprietary (G)-> P <u>As a remark, the Agency, Matched and Unmatched Principal values are not allowed on EuroTLX Market for quotes.</u>	- Dealing on own account (DEAL) - Principal - Dealing on own account (DEAL) - Proprietary -
<b>Trading Party</b>	Yes	The trading party of the quote is identified by this field. For Exchange users this will be the trader group	
<b>Clearing Account</b>	Yes	Identifies the clearing account for the quote	- Client - House
<b>PreTrade Anonymity</b>	No	Identifies the Anonymity	- Anonymous
<b>Unique Transaction Reference</b>	Yes	This will be the unique transaction reference of the quote/order. ( <i>QuoteMsgID</i> for FIX, <i>Client Order Id</i> for Native). Please refer to par 5.5 for additional details.	
<b>ExecInst</b>	No	Specifies if the quote has to be cancelled upon a disconnection or a log out. It should be noted that the above indication should be done in each and every Quote Message for quotes if the member firm wants the existing quote <u>not</u> to be cancelled upon a disconnection/log out. If the indication it is not set in the last quote message sent, any previous indications will be overridden by that and if a disconnection/log out happens the quote will be cancelled provided the fact the user level configuration is set to do so	
<b>Client ID</b>	Yes	Identifier of the client of the member firm. This field should be always filled as "None" for Quotes.	- None (when capacity is Dealing on own account (DEAL) or Matched Principal (MTCH) - AGGR (in the case of aggregated orders) - PNAL (in the case of orders pending allocations) - Short Code <sup>19</sup>

<sup>19</sup> Client ID, Investment Decision Maker and Executing Trader will be provided by the member firm as Short Codes:

- on the Native Protocol, the short code will be a 4 bytes field so a value between 4 and  $2^{32} - 1$ .
- on the FIX the short code will be a number between 4 and  $2^{32} - 1$

The association between the Short Code and the corresponding Long Code will have to be provided to the trading venue via the Member Portal.



<b>Investment Decision Maker ID</b>	Yes	Identifier of the person or the algorithm within the member firm who is responsible for the investment decision. It will be always required to submit a Short Code for Quotes.	- None (when the investment decision in relation to the order was not made by a person or algorithm within the member firm) - Short Code <sup>20</sup>
<b>Executing Trader ID</b>	Yes	Identifier of the person or algorithm within the member firm who is responsible for the execution of the order. It will be always required to submit a Short Code for Quotes.	- CLIENT (when the execution of the order was not done by a person or algorithm within the member firm) - Short Code <sup>21</sup>
<b>Qualifier</b>	Yes	Specifies: <ul style="list-style-type: none"> <li>If the Client ID is: <ul style="list-style-type: none"> <li>- a LEI (Legal Entity Identifier) for Legal Entities</li> <li>- a National Client Identifier (e.g. Fiscal Code for Italy) for Natural Persons</li> </ul> </li> <li>If the Investment Decision Maker ID is: <ul style="list-style-type: none"> <li>- a National Client Identifier for Natural Persons</li> <li>- an Algorithm</li> </ul> </li> <li>If the Executing Trader ID is: <ul style="list-style-type: none"> <li>- a National Client Identifier for Natural Persons</li> <li>- an Algorithm</li> </ul> </li> </ul>	- Algorithm: applicable only for Investment Decision Maker ID and Executing Trader ID. - Legal Entity: applicable only for Client ID - Natural Person It will be required to specify the field Qualifier for a Short Code.
<b>Algorithm Flag</b>	No	Provides the ability to specify if the quote was generated by an algorithm.	
<b>DEA Flag</b>	No	A flag to denote whether the quote was submitted to the trading venue using Direct Electronic Access (DEA).	

**Table 12 – Quote entry fields**

### 5.2.2. Content of quotes

<sup>20</sup>Client ID, Investment Decision Maker and Executing Trader will be provided by the member firm as Short Codes:

- on the Native Protocol, the short code will be a 4 bytes field so a value between 4 and  $2^{32} - 1$ .
- on the FIX the short code will be a number between 4 and  $2^{32} - 1$

The association between the Short Code and the corresponding Long Code will have to be provided to the trading venue via the Member Portal..

<sup>21</sup> Client ID, Investment Decision Maker and Executing Trader will be provided by the member firm as Short Codes:

- on the Native Protocol, the short code will be a 4 bytes field so a value between 4 and  $2^{32} - 1$ .
- on the FIX the short code will be a number between 4 and  $2^{32} - 1$

The association between the Short Code and the corresponding Long Code will have to be provided to the trading venue via the Member Portal.

### Quote size

The minimum value associated to bid and offered size on a quote is defined by a specific Admission Measure delivered by the EuroTLX Company which will not be delivered electronically. In case the quote size is less than that minimum value, the quote will be accepted by the Trading System but the Liquidity Provider shall be in breach of its quotation obligation.

### Maximum spread

The maximum spread between the bid and offer prices of a quote is defined by a specific communication delivered by the EuroTLX Company (the official type of communication is to be defined) which will not be delivered electronically. Executable Quotes having spread wider than the permitted maximum spread will be accepted by the Trading System but the Liquidity Provider shall be in breach of its quotation obligation.

### 5.2.3. Private Request for Quotes

RFQ is available as a functionality within EuroTLX market for DSG, FGS, DCF, FCF, DBB, FBB, FBP and FPR segments. A trader can request quotes by sending a Manual or Auto private Request for Quote to the intended market makers specifying the quantity he wishes to trade. Market makers who receive the notification can either accept, reject or ignore the notification. The market makers' acceptance is sent to the system in the form of a Quote. The quote should indicate the quantity and the price the market maker wishes to offer. Then for the Manual RFQ the requester can send instructions to the system to match with the best quote available at the point of matching and for Auto RFQ the execution will take place automatically when all conditions specified in the initial request or defined by the Exchange are met.

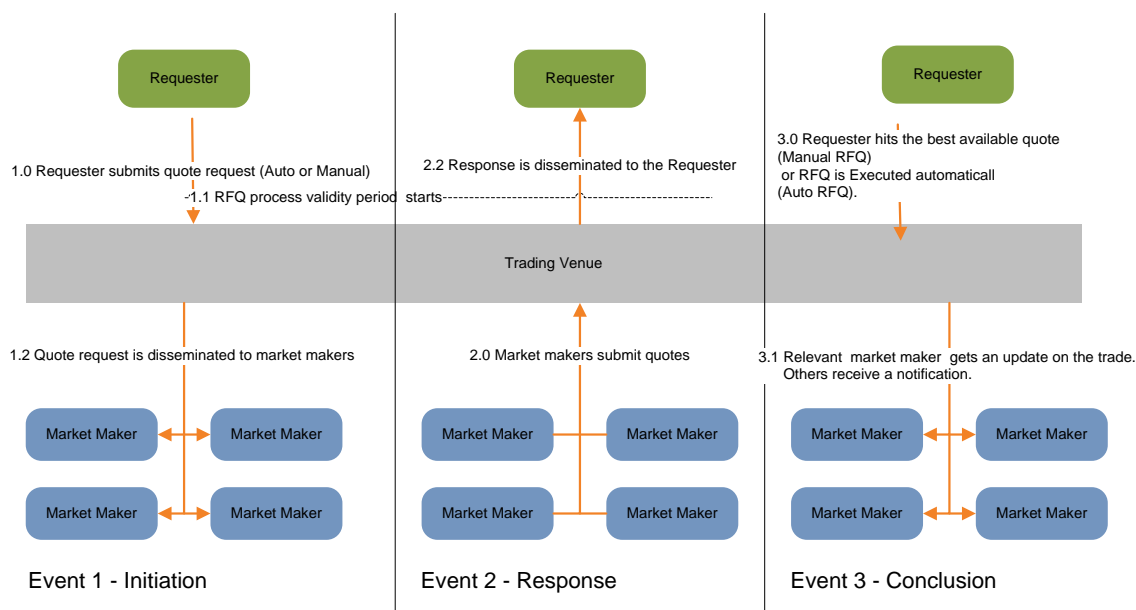


Figure 5 – General event flow for RFQ trade negotiation

### 5.2.3.1. RFQ Submission

The quote negotiation can be carried out named or anonymously based on allowed exchange configuration<sup>22</sup>. According to the named model, the identities of the two parties, requester and market makers, associated with the private RFQ are exposed to each other. Therefore, the requester may specify a list of registered market makers<sup>23</sup> (Firms) the request may be routed to (not exceeding the maximum allowed number<sup>24</sup>) and subsequently upon submission the request would only be routed to the specified market makers, which can identify the User profile of the requester through the Comp ID used (as defined in 3.4 User section). Contrary to the named model, the anonymous model does not expose the requester and associated market makers to each other and a RFQ should be routed to all eligible market makers. Since the RFQ is private request between the requester and the market maker in both models, named and anonymous, markets makers are not exposed to each other.

Moreover, once submitting an RFQ the requester can opt for a Manual or an Auto execution. In case of Auto RFQ the request can optionally specify the conditions to be met for the execution.

Similar to an order, the side of the RFQ (if specified) should refer to the side the requester is willing to take on a trade. I.e. if the requester wants to buy, the message should be populated with the fields relating to the “buy” side. However, side is an optional field for Manual RFQ hence when the requester doesn't specify this the market makers quotes won't be validated against the side (both sell and buy single-sided quotes and double quote will be accepted).

A Limit price can be optionally specified for both models by the requester to executes the RFQ with a quote priced within the limit price. The requester will be able to modify or remove the limit price specified in the initial RFQ.

RFQs submission should only be allowed when the Normal Order book is Regular Trading session. An RFQ already submitted should not be expired<sup>25</sup> upon Normal book transition to any other session. A RFQ can be valid until a time specified by the requester if does not exceed exchange allowed duration<sup>26</sup>. A quote request should have a quantity and value which is within the Exchange defined limits<sup>27</sup> (Minimum/maximum values and Maximum Quantities).

### 5.2.3.2. Auto RFQ

The requester will be able to send the following execution instructions when submitting the Auto RFQ:

- Disclose Side: whether to pass through the side<sup>28</sup> to market makers or not.
- Limit Price<sup>29</sup>: RFQ will only be executed with the best contra quote if the quote's price is better than or equal to the RFQ's limit price.

<sup>22</sup> As defined in “PvtRFQAnonymity” field in MIT305 - FTP Services Reference Data Specification.

<sup>23</sup> The list of instruments which are eligible to receive private RFQs and the firms of the eligible market makers is defined in MIT 309 - FTP Services RFQ Market Maker Reference Data Specification.

<sup>24</sup> As defined in “MaxNumMM” field in MIT305 - FTP Services Reference Data Specification

<sup>25</sup> The RFQ will be expired if it reaches end of the RFQ negotiation duration only.

<sup>26</sup> As defined in “PvtRFQDuration” field in MIT305 - FTP Services Reference Data Specification.

<sup>27</sup> As defined in “MinQtyRFQ” and “MaxQtyRFQ” field in MIT305 - FTP Services Reference Data Specification.

<sup>28</sup> Side is always mandatory for Auto RFQ.

- Execution Delay: defines the duration in seconds beyond which the RFQ will be executable from the time the RFQ was submitted.
- Min Number of quotes: defines the minimum number of live contra quotes to be considered to trigger the execution.

However if the requester does not specify a value for Execution Delay and Min Number of quotes then the values defined by the Exchange will be applied as defined below:

- Min Number of quotes= 2
- Execution Delay= 20 seconds

### 5.2.3.3. Response to the RFQ

If the market makers wish to response to the submitted RFQ, then a quote (single sided or double sided) may be submitted. Side specified on a single sided quote should be the opposite side of the quote request (i.e. if the requester was requesting for buy, the market maker should submit a sell quote). However, market makers can reply with a double sided quote for any quote request (although the no relevant side will never be executed). The quotes are continuously renewable; if a market maker submits another quote as a response to the same RFQ, the initially submitted quote by the same market maker should be replaced by the new quote. A double-sided quote cannot be replaced by a single-sided quote or vice-versa. The side of a single-sided quote cannot be amended. However a market maker can cancel the existing double/ single sided quote and submit a new quote to the same RFQ. Bid and offer quantities specified in the quote should be equal or greater than the initial RFQ quantity<sup>30</sup> and should have a quantity and value which is within the Exchange defined limit<sup>31</sup> (Maximum Values/Quantity). Price of the quotes submitted as a response to a private RFQ should be validated against the specific RFQ tick value that is always equal to 0.0001. Moreover the submitted quote cannot be carried out at a price which is drastically different from the Normal Order Book prices. This controlling is imposed by the Exchange defined price bands<sup>32</sup> (a percentage deviation from bid and ask prices of the Normal Order Book, LTP or previous close price of the Normal Order Book). The market maker should be able to cancel a live quote submitted by himself as a response to an RFQ and to reject the RFQ instead of responding with a quote. Market makers are not obliged to reply to RFQs by either accepting or rejecting and can choose to ignore the quote request.

A quote submitted as a response to a private RFQ will only be routed to the requester. All quotes submitted by the market makers in response to a private RFQ will be accepted by the system only when the Normal Order Book is in regular trading session. Submitted quotes will be expired if the session of Normal Order Book changes from regular trading to any other session.

Different levels of market data pre-trade transparencies (denoted below) for RFQs based on the instrument type and RFQ size are supported by the system.

<sup>29</sup> Limit Price is validated against the tick value as described in next paragraph for Market Makers' quotes.

<sup>30</sup> Please note that in any case only the quantity initially submitted by the requester will be traded.

<sup>31</sup> As defined in MIT305 - FTP Services Reference Data Specification

<sup>32</sup> As defined in MIT305 - FTP Services Reference Data Specification.

Pre-trade transparency model	Level of market data disseminated
Full pre-trade transparency model (FPT)	The “final” RFQ order book prior to the execution of the RFQ trade (ie. all live quotes available on the market when the requested decided to executed the RFQ) for the relevant RFQ session will be published. Terminating a RFQ session due to the execution of the RFQ trade, will result in the expiration of the quote responses. This event will be denoted by a series of delete orders being published through the market data gateway for the relevant RFQ session.
Partial pre-trade transparency model (PPT)	An Indicative Quote Information message will be published; this message contains the last indicative price prior to the execution of the RFQ trade.
No pre-trade transparency model (NPT)	None of the quotes submitted nor the bid/ask indicative price for an RFQ assigned with the NPT model will be disseminated.

**Table 13 – RFQ Transparency models**

The system will determine the applicable pre-trade transparency model based on RFQ value and the pre-trade transparency thresholds defined for each instrument.

#### 5.2.3.4. Accepting a Quote submitted by Market Maker – Manual RFQ

Requester should be able to instruct the system only to match the RFQ with the highest prioritized quote based on the price-time priority. It is not allowed to select a specific quote to match with since matching to the best available quote is the only option. If the requester is not interested in any quote, then he can ignore it. The quantity that the requester is willing to trade should be equal to the initial RFQ quantity. The requester can accept a quote only if the Normal Order book is in the regular trading session. Only in the named model, the requester can identify the User profile of the market maker through the Comp ID used (as defined in 3.4 User section). The trades cannot be carried out at a price which is drastically different from the Normal Order Book prices. This control is imposed by the Exchange defined price bands<sup>33</sup> (a percentage deviation from bid and ask prices of the Normal Order Book, LTP or previous close price of the Normal Order Book ). If the price at which an execution takes place falls outside the allowed range, the corresponding quote response sent by the requester should be rejected by the system.

Moreover the quote response is rejected by the system in case the best quote has a price worse than the limit price (for Buy RFQs, Offer Price > Limit Price and for Sell RFQs, Bid Price < Limit Price).

The requester can resubmit Quote Response messages to accept a quote until a match is found (respecting the price limits provided) or until the RFQ process is terminated whichever occurs first. Once the Quote Response is accepted by the

<sup>33</sup> As defined in “RFQPriceDevPerc” field in MIT305 - FTP Services Reference Data Specification.

system then an RFQ trade is executed between the requester and the market maker quote that was accepted. Market maker whose quote got accepted as well as the requester should be notified of the trade; all the market makers (except the one who got the execution) who received the initial quote request message and who have live quotes at the time of the execution would receive a message indicating the expiration of the quotes. At the end, all the market makers to whom the RFQ was initially forwarded but who do not have live quotes at the time of the execution will not receive any message indicating the completion of the RFQ.

All trades generated from the private negotiation process are communicated via market data.

Clearing and settlement of such trades follows the same logic as per the current Normal Order Book as defined for the relevant instrument.

#### **5.2.3.5. Automatic Execution – Auto RFQ**

The system will automatically match an Auto RFQ when all the following criteria are met:

- Duration specified under the Execution Delay is reached.
- Number of contra quotes are greater than or equal to the Min Number of Quotes.
- The best contra quote's price is better than or equal to the Limit Price

When the above three conditions are met, the RFQ is executed with the best quote prioritized using price/ time priority.

To avoid market makers knowing the exact time of matching a configured random period precedes the final match.

When at least one condition is not met the RFQ will not be executed and all the quotes submitted in response to the RFQ will remain open unless cancelled by the market makers.

Even if the RFQ is not executable at the initial trigger time, the RFQ could be executable after a Limit price amendment or after new quotes are submitted or the existing quotes are amended.

When the RFQ expiration time is reached, the RFQ and all the open quotes of the RFQ will be expired.

### **5.3. Price Format Code (“tick size”)**

The Price Format or tick size is the minimum valid increment in which order and quote prices can be entered and displayed. Each tick size is a numeric amount, representing a multiple of the unit of currency in which the instrument is quoted, and is identified by a single letter price format code.

If the price of an order/quote is not a multiple of the tick size on entry it will be rejected.

Tick sizes may either be ‘static’ or ‘dynamic’:

- a static tick size is a single, fixed value applied to all orders / quotes in a specific security until amended by EuroTLX;
- where a dynamic tick schedule is in place the tick size in operation is determined with reference to the intended price of the incoming order / quote.

## 5.4. Order book priority

Millennium operates on a price-time priority basis. As per price-time priority, the buy order or the bid of a quote having the highest price will have the highest priority in the order book; as per price-time priority, the sell order or the offer of a quote having the lowest price will have the highest priority in the order book.

## 5.5. Unique transaction identifier

Participants have to ensure that each transaction sent to the platform contains an identifier that is unique for a trading day for each User (i.e. CompID for FIX).

For FIX interface, the unique identifier will be carried within the following fields:

- *ClOrdId* (tag 11) for *New Order Single*, *Order Cancel Request*, *Order Mass Cancel Request* and *Order Cancel/Replace Request* transactions;
- *QuoteMsgId* (tag 1166) for *Quote* and *Quote Cancel* transactions.

For Native interface, the unique identifier will be carried within the field *Client Order Id* for the following transactions: *New Order*, *Order Cancel Request*, *Order Mass Cancel Request*, *Order Modification Request*, *New Quote*, *Quote Cancel*.

For performance reasons MIT Exchange will not carry out any real-time duplicate detection based on *ClOrdID* / *QuoteMsgId* / *Client Order Id*. Should a participant send a transaction with the same *ClOrdID* / *QuoteMsgId* / *Client Order Id* that has previously been used it will be processed.

Duplicate detection on *ClOrdID* / *QuoteMsgId* / *Client Order Id* values will be performed by EuroTLX at T+1 during fee calculation.

In the event that a duplicate is detected:

- all trades for each order will be charged to the participant, without taking into account any Cap of maximum trades charged in case of multiple executions for the same order/quote, eventually included within fee calculation algorithm in force.

## 6. Order Behaviour

### 6.1. Order management

#### 6.1.1. Order modification

The following aspects of orders present in Millennium Exchange may be updated by participants:

- order quantity
- order price (where applicable)
- unique transaction identifier

Modifications of an order may result in a change in its price and/or time priority and public order code as set out in the table below.

Modified field	Modification	Impact on priority
Order Quantity	Increase	Loses time priority
	Decrease	No impact
Order price	Improve	Gains price priority Loses time priority
	Worsen	Loses price priority Loses time priority
Unique transaction identifier	Any change	No impact

**Table 14 – Impact of order modification on order priority**

#### 6.1.2. Exchange deletion of orders

Under certain circumstances orders will be deleted on Millennium Exchange without a corresponding confirmation being sent to participants by EuroTLX. These are described below.

1. On the last day of trading in an instrument if any orders reside on the book



2. Outside regular trading hours due to a reference data change<sup>34</sup>
3. Following loss of the Primary Site
4. Partial loss of a Matching Engine requiring EuroTLX to re-start processing from a previous known point.

In all cases participants should request an Own Order Book Download to confirm the current state of the order book.

### **6.1.3. Trade Cancels**

Market Supervision may cancel a trade until the day before the settlement date. For trades cancelled after the execution date the server will transmit only the Trade Capture Reports via Post Trade Gateway to the relevant clients to notify them of a trade cancellation.

### **6.1.4. Trade Amendments**

Market Supervision may amend a trade until the day before the settlement date. For trades amended after the execution date the server will transmit only the Trade Capture Reports via Post Trade Gateway to the relevant clients to notify them of a trade amendment.

---

<sup>34</sup> This will be under particular circumstances

# 7. Order Book Execution

## 7.1. Execution Priority

The trade execution will always happen as per the price-time priority which is explained below:

- The quantities of all orders will be executed based on their time priority within the price point

## 7.2. Execution Criteria

When an incoming order executes against a passive order the trade price will be the price of the passive order.

If, after executing against all appropriately priced orders in the order book, there is a remainder, the incoming order will either be added to the order book, or will be expired based on the order type or the time in force.

## 7.3. Trading price monitoring

Order books can be subject to rapid price movements. Millennium Exchange operates price monitoring functionality that tracks the prices at which automatic executions are due to occur and will halt continuous trading execution if certain price movement tolerances would be breached.

The presence of price monitoring functionality in Millennium Exchange does not remove the requirement for participants' systems to have adequate safeguards in place to avoid erroneous order inputs.

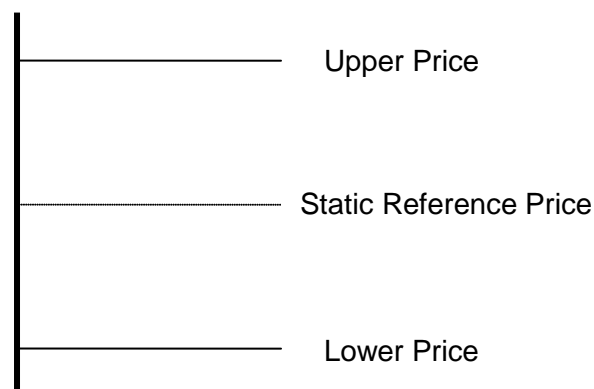
### 7.3.1. Price Bands

At the start of Pre-Trading session Static Reference Price is defined equal to the Closing Price of the previous trading day if present, or First Quotation Price at first day of quotation.

For DGS, FGS, DCF, FCF, FBP, FPR and EEQ segments the Static Reference Price is updated using the first automatic trade during Continuous Trading Session.

For DBB, FBB, DCE and FCE segments any trades within the day does not affect the Static Reference Price.

Price bands are defined based on an upper and lower demarcation based on the Static Reference Price and if it does not exist the price bands will not be computed.



Against the Static Reference Price, the offset will be defined as a percentage.

Price bands validation is applied, during all the trading sessions, at the below scenarios:

- Entry of a new order/quote
- Amendment to an existing order/quote

Price bands do not apply to Market orders. They are only applied to Limit orders as well as to Quotes.

Limit orders and quotes will be rejected due to the following conditions:

- Buy order or an amendment to a buy order whose prices are greater than the Upper Price Band or less than the Lower Price Band.
- Sell order or an amendment to a sell order whose prices are greater than the Upper Price Band or less than the Lower Price Band.
- Quotes which have either a bid or offer price that violates the Upper or Lower Price Bands.

Limit orders and Quotes with limit prices equal to the price band price are permitted.

Price bands will be set up at the individual instrument level. Market supervision can switch off price bands validation if required intra-day and can change the price bands intra-day as well.

### **7.3.2. Circuit Breakers**

Dynamic Reference Price is defined equal to the Last Trade Price if present, or Closing Price of the previous trading day if present, or First Quotation Price at first day of quotation.

Circuit breakers will be evaluated against both static and dynamic reference prices, and they will be triggered if incoming order/quote is attempting to execute a trade at a price outside the tolerance bands.

If a circuit breaker is triggered, instrument will move to a Halt session (where trader groups of member firms can only cancel orders/quotes and they cannot enter or amend orders/quotes); after the defined time duration, the instrument will be moved back to Continuous Trading session.

Incoming order/quote that triggers circuit breaker tolerance breach will be automatically expired.

FOK orders that would breach a circuit breaker tolerance limits will be expired upon entry and circuit breaker will not be triggered.

## 8. Closing (Reference) price

MIT Trading System can calculate the closing price (also known as Reference Price) according to a configured set of rules as described below:

### DGS/FGS/DCF/FCF/DBB/FBB/FBP/FPR segments

1. The weighted average price of the trades executed in the last 'n' ('n' configurable) minutes of the Continuous Trading session
2. If no trades were executed during the interval of Continuous Trading referred to above, the average of a configurable number (e.g. 10) of best bids and offers displayed on the order book during the Continuous Trading session
3. If no bids and offers have been displayed during the Continuous Trading session, the reference price is the average of a configurable number (e.g. 10) of best bids
4. If no bids have been displayed during the Continuous Trading session, the previous trading day's closing price

### DCE/FCE/EEQ segments

1. Average of a configurable number (e.g.10) of best bids and offers displayed on the order book during the Continuous Trading session
2. If no bids and offers have been displayed during the Continuous Trading session, the closing price is the average of a configurable number (e.g. 10) of best bids
3. If no bids have been displayed during the Continuous Trading session, the closing price is the previous trading day's closing price

## 9. Additional Services

The following additional services, not core to any specific trading functionality, will be supported.

### 9.1. Drop Copy

Millennium Exchange will provide the 'Copy To' functionality by which a copy of Execution Reports generated by one trading user can be sent to a separate drop copy user. However, since only Execution Reports will be sent by Drop Copy, it should be noted that quotes are given back in case of execution only.

This functionality may be used by trading parties within a firm for supervisory purposes and a trading party may request a copy of all the order related execution report messages generated by the trading system for another trading user (parties) of the same firm.

Full details of the Drop Copy Interface are given in MIT205 – EuroTLX - Drop Copy Gateway Specification.

### 9.2. Own Order / Trade Book Download

Millennium Exchange will continue to support both the Own Trade Book Download and Own Order Book Download services.

The Own Trade Book Download will be supported via the Post Trade Gateway. In response to a request (sent via a Trade Capture Report Request message) sent by a participant the gateway will return a Trade Capture Report for each trade<sup>35</sup> that has occurred that day for the Firm. It is possible to configure so that download is restricted to pre-assigned specific FIX ComplIDs.

Own Trade Book Download will only include those trades that have occurred, have been published or are pending publication on the day of the request.

Participants can use criteria, such as Instrument ID, Trade Status, etc., to perform the trade download. Full details of the Own Trade Book Download service is given in MIT204 – EuroTLX - Post Trade Gateway Specification.

The Own Order Book Download will be supported via the Drop Copy Gateway. Although such a request may be made at any time, the primary purpose of this functionality is to provide trading parties with details of their open orders to assist them during a system recovery. A user parameter will determine the maximum

---

<sup>35</sup>Participants can request automatic, off-book, cancelled or all trades

number of own order book download requests a drop copy user trading party can use within a trading day; any request exceeding this amount will be rejected.

In response to a request (sent via a Mass Order Status Request message) sent by a participant the gateway will return an Execution Report for each active order. Also, client may select to download the current status of each active order for a specified user, for a specified segment, for a specific instrument.

Full details of the Own Order Book Download service are given in MIT205 – EuroTLX - Drop Copy Gateway Specification.

### **9.3. RCG File**

Flat file known as RCG containing the full list of all valid trades concluded in the previous trading day will be maintained on a EuroTLX ftp server, with some minor changes due to MIT implementation. RCG file will be available early morning before market opening.

Technical details of RCG record map are provided in the following document:

- EuroTLX – RCG File Service

### **9.4. Post Trade Filter**

Post Trade Filter functionality allows to avoid sending to settlement cross trades occurred within the same Participant, if required by the Participant itself.

More detailed, trades matched on the Trading System having the same Participant on both legs, could not be sent to settlement if some conditions are satisfied. Those conditions are related to various Capacity and Settlement Venue combinations of values.

### **9.5. Market Statistics**

Flat file known as TLX\_Listino.txt, containing end-of-day information on prices, quantities, countervalues and trades for each instrument, will be maintained on a EuroTLX ftp server, with some minor changes due to MIT implementation. TLX\_Listino.txt file will be available early morning before market opening.

Technical details of TLX\_Listino.txt record map are provided in the following document:

- EuroTLX – Market Statistics - TLX\_Listino.txt File Service

## **9.6. Members File**

A file named Members.txt is made available by EuroTLX on the public FTP server at 07:30am of every trading day. The file contains a list of all participants authorized to participate to the trading activities as Broker and/or Liquidity Provider on EuroTLX market.



# 10. Recovery Model

Millennium Exchange introduces a recovery model in case of serious incident, which is described below.

## 10.1. Connection

Each participant connection (identified by CompID) will be enabled for access to the trading system via a Primary and Secondary Gateway for each interface:

- FIX Trading
- FIX Post Trade (2 connections , one for Post Trade, one for OTBD)
- FIX Drop Copy (2 connections , one for Drop Copy, one for OOB)
- Native Trading (2 connection, one for real time messages, and one for recovery)

### 10.1.1. FIX Recovery

One of the pair of Gateways will be designated the Primary, and the other Secondary. In the event of failure of the Primary Gateway participants should connect / logon via the Secondary gateway. Any attempt to logon to the Secondary gateway outside of any failure event will be refused.

In case of unexpected disconnection from the Primary Gateway participants should attempt to re-connect to the Primary Gateway a total of three times, with 3 seconds between each attempt before attempting to connect the Secondary Gateway.

Likewise, if there are further issues in connecting to the Secondary Gateway a total of three connections, with 3 seconds between them, should be attempted.

After six failed connection attempts (three on each Gateway) this may indicate a serious issue and EuroTLX should be contacted for guidance.

Both Primary and Secondary Gateways are duplicated at the Disaster Recovery Site.

### **10.1.2. Native Recovery**

Customers will be allocated two Gateways, one designated as the Primary and one as the Secondary. Although connections to the Secondary will be permitted customers should avoid unnecessary connections to the Secondary Gateway to guarantee the maximum performance.

In case of unexpected disconnection from the Primary Gateway then participants should connect to the Secondary Gateway.

Both Primary and Secondary Gateways are duplicated at the Disaster Recovery Site.

## **10.2. Disaster recovery site**

Millennium Exchange can operate in “active-active” mode. In the event of total loss of the Primary Site EuroTLX will activate the Disaster Recovery Site<sup>36</sup>. This procedure is expected to take in the order of indicatively 1 hour.

In the event of disaster then only those trades that have been sent to participants via a Trade Capture Report from the Post Trade Gateway can be guaranteed to have been sent to settlement and clearing. Participants should disregard any trades for which only an Execution Report has been sent and not received on the settlement and clearing systems.

Once the Disaster Recovery Site is invoked then the active orders and quotes entered on the Primary Site will be injected on the book and the trading system re-started. The very latest orders and quotes entered on the Primary Site can be not available on the Disaster Recovery Site. Participants should note that no updated Execution Reports will be sent identifying those orders that have not been uploaded onto the Disaster Recovery Site.

Following this, participants will be asked to connect to the Disaster Recovery Gateways.

As per the current procedure, order book securities will be reinstated in a halt session.

Following recovery to the Disaster Recovery Site it is recommended that all participants should:

- Carry out an Own Trade Download to confirm which trades have been sent to clearing and settlement
- Carry out an Own Order Book Download to confirm that no orders are currently active.

---

<sup>36</sup> The detailed I Disaster Recovery Procedure will be provided in the future with a specific notice

## **10.3. Exchange market intervention**

When a system issue impacting a wide sector of the market is identified, EuroTLX will undertake an initial assessment of its severity and impact on its Trading Services. EuroTLX has a number of actions it can take that will be enforced at instrument, trading segment, trading cycle, matching engine partition or if necessary whole market level.

### **10.3.1. Urgent Notices Session**

The current system status of EuroTLX's services are displayed on its News Section at [www.eurotlx.com](http://www.eurotlx.com). This is the mechanism for EuroTLX communicating any market intervention actions it takes as result of a service interruption.

### 10.3.2. Market situation options

Title	Overview	Impact
<b>Halt</b>	Interruption of continuous trading and no further order entry which can be imposed at Instrument / Segment / Trading Cycle / market level	No order / quote entry Deletion allowed No automatic execution No indicative uncrossing prices No impact on closing prices
<b>Market / Partition Suspension</b>	Market or Partition wide suspension of automatic trading and quote dissemination	Total lockout - messages rejected at Trading Gateway(s) No order or trade report entry or deletion No execution No indicative uncrossing prices No impact on closing prices
<b>Halt &amp; Close</b>	Continuous trading disabled and closing prices issued. Very unlikely that there will be further automated trading that day. Can be imposed at Instrument / Segment / Trading Cycle / market level	No order / quote entry Deletion allowed No indicative uncrossing prices Closing prices frozen and disseminated

**Table 15** – Overview of different intervention options Exchange may take

# 11. Service Interruptions Protocol

The term “outage” is used in this section to describe a significant, unforeseen interruption to EuroTLX’s customer facing critical IT systems – usually the trading or market data systems. Outages may result from either technological failure or from a physical security/safety issue and will vary in length and severity of impact on the market and its participants.

When an issue is sufficiently serious to constitute an outage, EuroTLX will endeavour to follow this outage protocol in its handling of the situation. This protocol should be read in conjunction with the Recovery Model section of this document. For market data information please see MIT303 EuroTLX - MITCH Specification.

## 11.1. Overarching Principles

In managing outages EuroTLX will seek to act in the interests of all market participants and of the wider market. EuroTLX will generally seek to keep its markets open even if it has serious system issues. However, if EuroTLX considers the orderliness or fairness of our markets and/or the wider market to be impaired by the incident then EuroTLX will intervene to pause, halt or suspend the affected market(s).

EuroTLX always welcomes feedback from market participants that have been affected by outages – this will be used to improve the handling of any subsequent incidents and to amend this protocol as necessary.

## 11.2. Different Types of Outage

Since outages can be caused by a variety of different situations it is difficult to be specific or prescriptive about how any particular situation will be managed. Some examples of the causes of outages are:

- Failure/malfunction of significant components of the trading system.
- Sustained or repeated loss of connectivity between customers’ systems and EuroTLX’s systems.
- Major delays or gaps in the dissemination or receipt of market data.

EuroTLX will use its judgement to decide how best to manage any particular outage and is mindful of the fact that many but not all market participants are now able to trade securities on other trading venues.

### **11.3. Assessment & Response**

EuroTLX has a comprehensive internal escalation process to identify and manage its system issues. Most of these system issues are very minor and are entirely invisible to market participants. However, in the unfortunate event that we experience a major service interruption (an outage) we will invoke our incident management procedures and form an incident management team, which is responsible for deciding on the appropriate response to the outage.

In the event of an incident, the EuroTLX's News Section at [www.eurotlx.com](http://www.eurotlx.com) will commence operation. Participants may also continue to use their existing technical account manager contacts at EuroTLX or Borsa Italiana CTS during such outages.

### **11.4. Alternative Site Procedures**

If the outage relates to a hardware failure or environmental incident in the EuroTLX Primary Data Centre, the incident management team may decide to invoke the secondary site in order to utilise the EuroTLX's backup hardware at the Secondary Data Centre.

The likely effort between the invocation of the secondary site and restoration of trading is difficult to forecast exactly but is likely to take in the region of 1 hour. Once trading resumes at the Secondary Data Centre, participants are encouraged to perform an own order book download in order to prepare themselves for the resumption of trading. Importantly, if there has been a significant interruption of service (defined by whether the incident team has been deployed) the EuroTLX will always restore trading using a period where at least some minutes notice of order management can be given to the Participants.

EuroTLX undertakes regular tests of its procedures in order to check the technical performance of the system, the readiness of EuroTLX personnel and to ensure that participants are familiar with the operation of the procedures.

### **11.5. Communication**

EuroTLX is committed to communicating with customers frequently during an outage and will provide as much information as possible in the circumstances. Given the unpredictable real-time nature of outages it is not possible for EuroTLX to guarantee how often communications will be issued but during an outage updates will normally be provided every time the situation changes.

EuroTLX has a dedicated News Section at [www.eurotlx.com](http://www.eurotlx.com), that represents the primary means of communicating with market participants and other relevant parties during an outage.

# 12. Appendix 1: Certification Programme

The Certification Programme is based on regulatory compliance supporting interoperability against the three eligible London Stock Exchange Group (LSEG) venues.

The following Certification Programme applies to anyone connecting a software application to an LSEG Live Service. A Live service is any production Trading or Information Services environment across LSEG.

Under EU and national regulatory requirements (including the ESMA Guidelines on Systems and Controls in a Highly Automated Trading Environment and MiFID II Regulatory Technical Standards) the eligible LSEG venues are required to have procedures and arrangements to ensure fair and orderly trading. This includes requirements for physical and electronic security to protect systems from misuse or unauthorised access and to ensure the integrity of the data that is part of or passes through the systems. The eligible venues are required to undertake standardised certification testing to ensure that members and participants systems used to access the venues have a minimum level of functionality that is compatible with fair and orderly trading on those venues.

Customer non-compliance with this certification programme may constitute a breach of the eligible venue terms and conditions or rules.

## 12.1. Access to the Live Service

Access to the LSEG Live Services is permitted only when a customer's software application has been certified as being fit for purpose.

## 12.2. Software Identification

All customer software must be identifiable by a software name and version number. Software applications that do not have both a name and version number will not be certified. Certification is limited to a single version of the named software.

## 12.3. Certification Policy

Customers are required to certify or re-certify their applications under the following conditions:

- Prior to use the application in the live environment (for new applications)
- The customer modifies the software in any way that directly impacts LSEG interfaces. This includes but is not limited to updates to Gateways, Order Management, Execution Management and Quote Management Software
- The Exchange upgrades its production environment to a later version of software
- The customer is requested to re-certify their application by the relevant venue

If no certifications have been performed during a solar year (because any of the previous conditions occurred), the customer will be asked to self-certify (by sending an email to the relevant Trading Venue team that look after certifications) that no changes have been applied to the application since the last certification.

#### **12.4. Test Scenario Exception Policy**

Customers need to complete all the test cases referred as “mandatory” and only need to complete the test cases relating to the functionality that they will use on the Live Services of the test cases referred as “optional”. If a customer’s application does not support the functionality described in a particular test scenario and they do not intend to complete the scenario during the test, this must be agreed before the start of the certification test.

#### **12.5. Non-Conformant Behaviour on the Live Service**

Any non-conformant behaviour by a customer’s software application on the Live Services may lead to the software application being disconnected and not re-connected until it has been re-certified and the non-conformant behaviour corrected

Full details about the Certification test are available on EuroTLX web site.

#### **12.6. Certification contacts:**

Please contact Market access Italy team if you any question questions about certification programme:

- Mail to [market-access@borsaitaliana.it](mailto:market-access@borsaitaliana.it)
- Telephone: +39 0272426 668





**London**  
Stock Exchange

Copyright © June 2018 London Stock Exchange Group plc.  
Registered in England and Wales No. 2075721.

London Stock Exchange Group 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 Group plc.

London Stock Exchange  
10 Paternoster Square  
London EC4M 7LS  
Telephone: +44 (0)20 7797 1000

[www.londonstockexchange.com](http://www.londonstockexchange.com)