

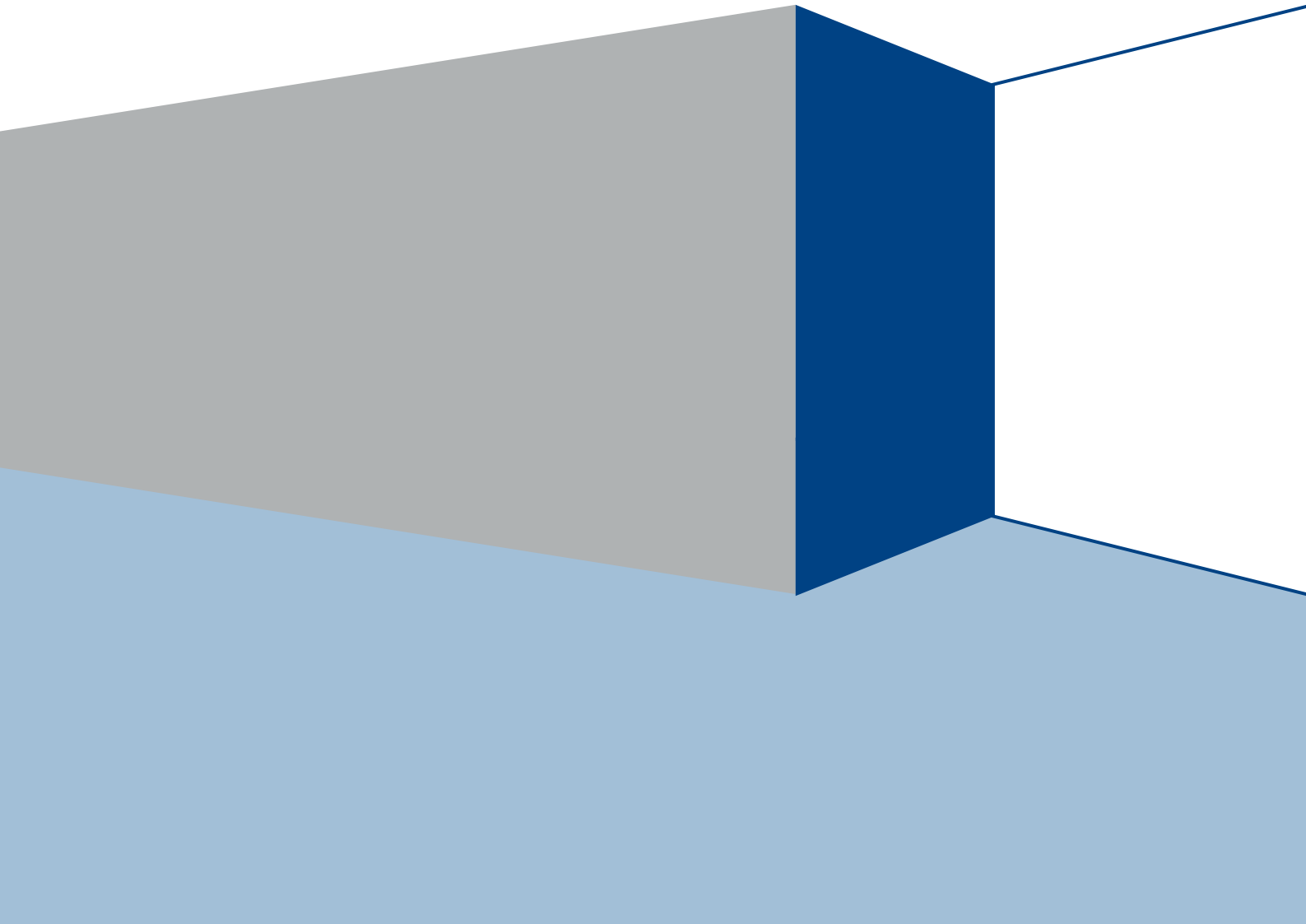


London
Stock Exchange

MIT102 · MIGRATION TO MILLENNIUM EXCHANGE

Guide to Production Migration

Issue 1.0 · 20 August 2010



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The Exchange may vary this document from time to time at its discretion and will provide notification of such variations via its Service Announcements.

1. Introduction

1.1. Purpose of this document

This document is part of a series of documents providing a detailed view and guidance of all trading and information services available from the Exchange, following the migration to the Millennium Exchange platform.

It is the second in the series and provides details of the migration approach to the new trading platform relating to the operation of the Exchange's UK cash markets. Where the full details are not currently available at the time of preparing this guide, clarification will be provided in future Service Announcements.

This document also contains the key dates that certain changes to the terms and conditions take effect, as notified to members via a Service Announcement on 28 May 2010. A copy of can be found at:

<http://www.londonstockexchange.com/information-providers/technical-library/service-announcements/service-announcements.html>

This Guide to Production Migration provides a high level overview of the following key aspects of the migration:

- Customer Testing Services
- Production Enablement Approach
- Static Data Approach
- Early Access Service (EAS)
- Dress Rehearsals
- Production IP Addresses

Please see a list of the associated project documentation below for further guidance:

- MIT101 - Migration to Millennium Exchange
 - **MIT102 - Guide to Production Migration (this document)**
- MIT201 - Guide to New Trading System¹
 - MIT202 – Trading Gateway (FIX 5.0) Specification
 - MIT203 – Native Interface Message Specification
 - MIT204 – Post Trade Gateway (FIX 5.0) Specification
 - MIT205 – Drop Copy Gateway (FIX 5.0) Specification
- MIT301 - Guide to Market Data Services
 - MIT302 – FIX/FAST Message Specification
 - MIT303 – Level 2-ITCH Message Specification

¹ Forms part of the "Technical Specifications, and therefore part of your Agreement with the Exchange

- MIT304 - Regulatory News Service Specification
- MIT401 - Reference Data Service Specification
- MIT501 – Guide to the Customer Testing Services
 - MIT502 - Guide to Application Certification

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

There are also some changes to the technical channels of delivery, which will result in minor changes to your Configuration Details for the services. The Exchange reminds customers that it will provide customers with a completed Configuration Form that it believes best reflects the changes to individual customer configurations.

1.2. Document History

This document has been through the follow iterations:

Issue	Date	Description
1.0	20 August 2010	First issue of this document published via the Exchange's website and distributed to customers via Service Announcement [Live & CDS 001–200810]

1.3. Enquiries

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

- Telephone: +44 (0)20 7797 1500
- Email: support@londonstockexchange.com

2. Customer Testing Services

The Exchange has been supporting customers through the migration to Millennium Exchange with the provision of a new Customer Test Service environment. The new environment supports the following services:

- Customer Development Service (CDS)
- Application Certification Service (ACS)
- High Volume Service (HVS)

A summary of these services can be found in the following documents available on our website:

- MIT501 – Guide to the Customer Testing Services
- MIT502 – Guide to Application Certification

Customers wishing to self certify their software will need to contact the support desk and speak to a Service Desk Analyst (SDA) in order to perform a support function and/or run the end of test report. Customers can guarantee that a SDA will be available by booking a test in advance. To book a test, customers should call +44 (0)20 7797 1500.

Alternatively customers can take the test without pre booking. However, this may result in extended time taken to complete the test depending on SDA demand at the point where the customer requires SDA action and/or certification report confirmation.

It is anticipated that the service will be very busy so customers are strongly encouraged to book in advance.

3. Technical Data Migration

3.1. Overview of Technical Data Migration Arrangements

In order to make the migration from TradElect and Infolect as simple as possible for customers, the Exchange will be migrating data from the existing systems to Millennium Exchange. The Exchange will shortly be issuing a Customer Request Form (CRF) to customers that will need to be completed and returned to the Exchange. To assist customers, this form will be partially populated with the information the Exchange will be automatically migrating. Customers should validate the information and provide the additional information that is requested. Furthermore, some written guidance has been provided to customers and will accompany the form.

The final CRF should be returned to **enablement@londonstockexchange.com** by Friday 3 September 2010 to ensure that customers are enabled in time for the start of connectivity testing on the Early Access Service (see section 5.2) on Monday 20 September 2010. It is mandatory to complete connectivity testing before the first customer dress rehearsal on Saturday 9 October 2010.

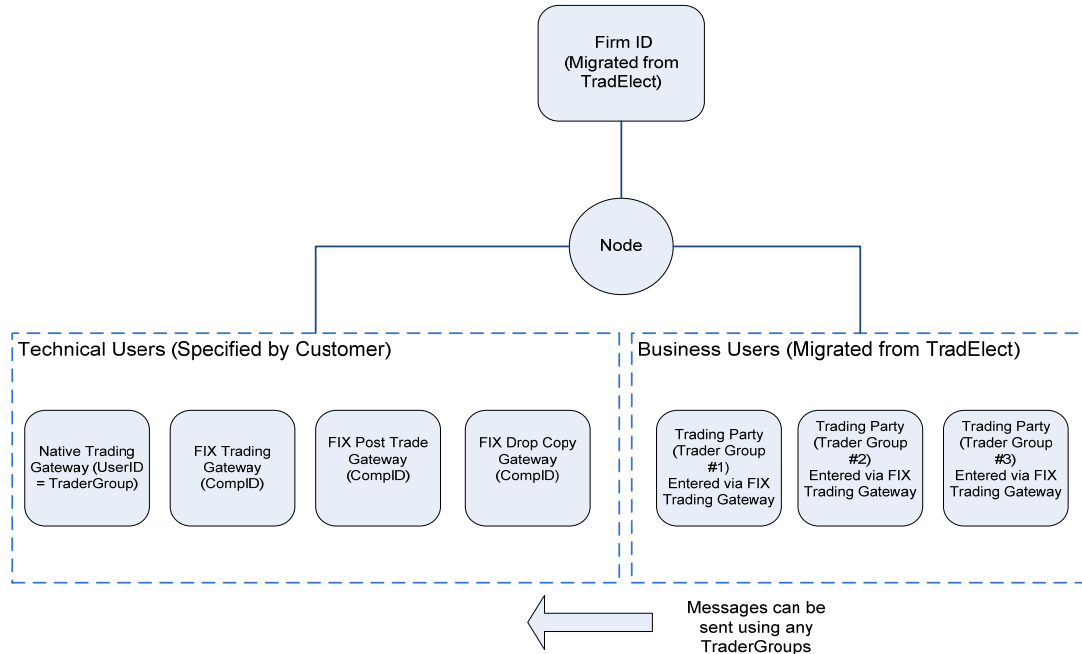
Vendor Access customers should also speak to their provider about their configuration.

Once the CRF has been returned, the Exchange will issue a Configuration Form (CF) containing the following information:

- CompIDs
- UserIDs/Trader Groups
- Passwords
- Host IP addresses (should be provided by customers in the CRF, with up to 8 IP addresses allowed per CompID)
- Destination/Multicast IP addresses

3.2. Trading Enablement Structure

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



3.2.1. 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 MemberID. The Exchange will migrate TradElect MemberID(s) to the FirmID(s) in Millennium Exchange.

3.2.2. Node

A Node represents a logical grouping of technical connections (ComplDs) and users (UserIDs/Trader Groups). The node is represented by a NodeID which will have no business or technical meaning and will be allocated by the Exchange. Customers will be allocated one node per MemberID.

The NodeID will be formed of up to 30 characters. The first 6 characters will represent the market and the environment. Therefore, the format of the Exchange's production NodeID for this migration will be **LSEPRD**.

3.2.3. User

A User represents a Technical connection to a FIX interface (CompID) or a Trading User (known as a UserID/Trader Group). However, users are configured differently according to which interface the customer is using.

3.2.3.1. FIX Interface Users

Customers using the FIX trading interface will be provided with a combination of CompIDs and Trader Groups. The CompID will be used to establish a connection to the trading interface. The Trader Groups will have the trading roles assigned to them.

CompIDs will be formed as follows:

- Market - 1 char (L=LSE)
- Company - 3 chars (Company name)
- Software House - 3 chars (SW house name)
- Interface - 2 chars (FT - FIX/Trading, DC - Drop Copy, PT – Post Trade)
- Number- 2 digits

3.2.3.2. Native Interface Users

Customers using the Native Interface will be provided with UserIDs which can be used to establish a connection as well as have trading roles assigned to them.

3.2.3.3. Trader Groups

Customers' existing Trader Groups will be migrated from TradElect to Millennium Exchange. Customers will receive their CRF shortly and will contain details of their existing Trader Groups.

3.3. Market Data Enablements

All users that currently subscribe to the Exchange's market data services should note that the Exchange will map these services to the new market data channels available on both the Level 2-ITCH and FIX/FAST feeds. These will be available via new Multicast channels which will be configured at a Service Access Point (SAP) level. A list of the channels and the associated multicast addresses are available in Appendix A of this document. Customers will be able to confirm which market data services they require via the CRF that is issued to them.

In order that the Exchange can best support the subset of customers who are actively using RNS information, RNS will no longer be enabled as standard for non-active customers.

If customers plan to receive and process RNS via Millennium Exchange, they should indicate this on the CRF. The form will then be used to continue/discontinue RNS enablement for the remainder of the testing period and subsequent production enablement for Millennium Exchange.

By default a client will be given a CompID for each multicast channel enabled to connect to the Recovery and Replay services. The Exchange will provide these CompIDs as part of the enablement process.

In addition, customers that take a direct information feed from the Exchange are reminded of a separate variation letter in that regard. Customers that have not received this letter should contact the Support Desk or their Exchange representative.

3.3.1. FIX/FAST Users

Customers subscribing to the FIX/FAST service will be provided with CompIDs for connectivity to the FIX/FAST Recovery (Snapshot) and Replay Services.

FIX/FAST CompIDs will be formed as follows:

- Company - 3 chars
- Feed Count - up to 3 digits
- Interface - 3 char (FF - (FIX/FAST) S-Snapshot, R-Replay, I-Both)
- MD Count - up to 2 digits (1-17 each channel will be numbered)

3.3.2. Level 2-ITCH Users

Customers subscribing to the Level 2-ITCH service will be provided with CompIDs for connectivity to the Level 2 - ITCH Recovery (Snapshot) and Replay Services.

Level 2 - ITCH CompIDs will be formed as follows:

- Company - 3 chars
- Feed Count - 1 digit
- Interface - 1 char (S-Snapshot, R-Replay, I-Both)
- MD Count - 1 char (A-F)

3.4. IP Addresses

3.4.1. Host IP Addresses

The Exchange recommends that customers use any of the host IP addresses within the x.x.x.96-121 range of addresses for connectivity to the Millennium Exchange production environment.

However, customers are allowed to choose individual host IP addresses. In order to maintain a degree of separation of test and production services, customers will not be allowed to use the same IP address to connect to a test and a production service.

Customers should plan their use of these addresses carefully as should the need arise, the Exchange may need to block a specific IP address.

3.4.2. Exchange IP Addresses

A full list of Exchange IP addresses can be found in Appendix A.

Customers accessing the FIX Trading gateways will be allocated a specific primary channel on a specified gateway. The backup channel will also be configured in case of failure of the primary channel. Customers' access to the Post Trade and Drop Gateways will also be configured in the same way.

Customers accessing the Native Trading gateways will be allocated a primary IP address and port for connectivity to realtime and recovery services. In the event of a trading gateway failure, customers will also be allocated a secondary IP address for connectivity to a backup gateway. Customers attempting to connect to the backup gateway for any other reason will be disconnected by the Exchange.

In terms of market data, customers should be aware that there is no recovery service for the FTSE Indices and RNS channels (replay channels are available).

4. Static Data Migration

4.1. Access to Trading Service

The Exchange will migrate participant static data on Friday 10 September, in preparation for the launch of the Early Access Service on Monday 20 September. This process will migrate all customers' production TradElect set-up and any static data additions or deletions submitted via the CRF. Any CRFs received after 3 September 2010 will be processed following the launch of EAS on 20 September.

From Monday 13 September, any changes requested for TradElect will be replicated in Millennium Exchange. As part of this exercise the Exchange will standardise the types of access provided to customers, but they will not be provided with access to segments when they are not authorised or permitted to do so.

Customers must return their final CRFs by Friday 24 September 2010 to ensure they are enabled for the first customer dress rehearsal on Saturday 9 October 2010.

4.2. Standing Settlement Account

The migration to Millennium Exchange will introduce a change to the configuration of Settlement Account at the point of order entry. In TradElect it is possible to specify 'House', 'Client', or 'Standing' when submitting orders to the system. The 'Standing' value corresponds to a statically defined default value of 'House' or 'Client' which is looked up and applied for post trade processing.

Millennium Exchange will accept only 'House' or 'Client' and requires members to explicitly determine the Settlement Account at the point of each order entry, without the use of pre-configured default values. Member firms should take all steps necessary to ensure that orders are submitted with the appropriate Settlement Account, if this is not the case, Millennium Exchange will reject the order. There will be no changes to the configuration of Dealing Capacity, with 'Principal', 'Riskless Principal' and 'Agency' retained in Millennium Exchange.

Member firms should speak to their General Clearing Member (GCM) in order to confirm the correct Settlement Account values.

4.3. Post Trade Static Data

Currently on TradElect, post-trade static data (i.e. clearing member and settlement participant) is defined at member level. In Millennium Exchange, post-trade static data is configured at User ID/Trader Group level, allowing greater static data flexibility than is available under the current Member ID level structure.

A migration of existing relationships from Member ID to User ID/Trader Group level will be performed by the Exchange on 10 September 2010, in preparation for the launch of the Early Access Service on Monday 20 September 2010; members are not required to take any action.

Any participant static data with an effective date of 13 September 2010 or beyond will be treated as a business as usual change and must be submitted on a new Static Data Form (to be made available on the LSE website at <http://www.londonstockexchange.com/formsagreements> from 27 August 2010).

Once the post-migration change freeze period of one week has elapsed (see next section), member firms will be able to configure static data at User ID/Trader Group level, removing the requirement to maintain multiple Member IDs to accommodate a firm's desired level of post trade flexibility.

4.4. Change Freeze

To ensure a smooth migration of all client information the Exchange is proposing to restrict all non-critical changes in a period of time up to and after the go-live of Millennium Exchange.

For a three week period (two weeks before go-live and one week after), between 18 October 2010 and 5 November 2010, the following activities will not be supported:

- Go-live of new member firms;
- Requests for customer access to new markets or segments;
- Trading code changes (Member ID or Member Mnemonic);
- Changes to dealing capacities;
- Ad hoc requests for EMS changes;
- New Trader Groups;
- New requests or changes to technical enablements;
- Changes to multicast groups.

However, the following changes may continue to be made during the reference data change freeze period:

- Settlement arrangement change;
- Transfers of business and resignations with legally agreed dates;
- Change of contact details - including controller, names and addresses; and
- Market Maker registrations will be dealt with on a case by case basis.

There will be no changes to the policy or timescales that support instrument (issuer) reference data changes during this period.

Customers will be able to request changes to their static data from 8 November 2010. However, the change freeze period will move to start on 1 November 2010 should the Exchange move to the contingency go-live date of 15 November 2010.

4.5. Go-live Weekend Cutover Activities

4.5.1. Friday evening

The Exchange will clear down all order books after 17:00, following the end of trading. Customers will receive unsolicited order deletion messages (on TradElect), which will require acknowledgement in the usual way. Unacknowledged messages will not be re-sent after Friday. To aid this process customers are requested to delete their orders at the end of the trading day on the Friday. The Exchange will not be able to provide customers any missed unacknowledged messages retrospectively.

Trades that have a delayed publication scheduled for up to 18:15 on the Friday will publish as normal and will not be migrated to Millennium Exchange. Trades with a scheduled publication time after 18:15 on the Friday will be migrated to Millennium Exchange and published at the appropriate time on the new system. When trades are published by Millennium Exchange their unique reference ("Trade Match ID") will be different to that allocated under TradElect ("Trade Code"). Therefore, customers can cancel or pre-release embargoed trades only upon request by contacting Market Supervision.

Closing prices will be disseminated as normal on the Friday and will be migrated to Millennium Exchange as part of the migration process. Customers are advised to take a copy of Infolect closing prices for use on Monday.

4.5.2. Monday Morning

The new Trading system will start with empty order books. Customers will need to enter orders, quotes and submit trade reports as required.

5. Migration Approach

The migration process to Millennium Exchange will include the availability of an Early Access Service (EAS), weekend customer dress rehearsals and a Go Live weekend. Customers must prove connectivity by connecting to EAS with certified software prior to attending the first dress rehearsal, which is mandatory for all customers. Participation in the Go-live weekend is optional, but strongly recommended.

5.1. EAS/Dress Rehearsal/Go-live Weekend Schedule

The dress rehearsal/go-live weekend dates have been scheduled as follows:

Weekend Activity	Date
Early Access Service (Mandatory ²)	20 September 2010 to 22 October 2010
Customer Dress Rehearsal 1 (Mandatory)	09 October 2010
Customer Dress Rehearsal 2 (Optional ³)	23 October 2010
Go-live	01 November 2010
Contingency Go-live	15 November 2010

5.2. Early Access Service

The Early Access Service will be available for customers to prove their connectivity to the Millennium Exchange production environment ahead of the first dress rehearsal. EAS will be available from 20 September 2010 until 22 October 2010, (i.e. a three week period before the first dress rehearsal). Customers are reminded that CRFs must be returned by 3 September 2010 for access to be granted for the start of EAS.

Customers with in house applications will need to have completed application certification and only customers with finalised production enablements will be allowed to participate in EAS.

The Exchange requires all customers to prove connectivity of their production enablements against EAS; however, functional testing thereafter is optional. Customers will be able to perform functional activities as they would during a normal trading day such as logon, order entry, execution and other message interaction.

² Connectivity testing is mandatory for Early Access Service, however, functional testing is optional

³ Based on successful completion of dress rehearsal 1

The Exchange recommends that a customer proves connectivity by performing an application logon to each gateway for which the customer has been configured. However, a Telnet connectivity test to each gateway is sufficient. Once this has been completed, customers should email the support desk providing the relevant contact details, connectivity details and the time at which the test was performed. A SDA will then verify the success of the test and contact the customer. A template for the email and an email address will be provided to customers at a later date in advance of the launch of EAS.

EAS will operate with standard trading hours and the expected go-live configuration, both technically and functionally. However, this service should not be used for performance tuning of customer applications and/or entering high volumes of messages.

During the EAS period the Exchange will be maintaining the system in parallel with the TradElect production environment. However, customers should note that instrument reference data may not be updated in real time and may be several days behind.

5.2.1. EAS Post Trade Testing

For a period of two weeks, between 27 September and 8 October, the Exchange can arrange for customer EAS trading activity to be fed through to CCP test systems:

- to LCH.Clearnet for activity in the IOB market; and,
- to EUI and the customer's CCP (LCH.Clearnet or x-clear) for UK market activity

During this period, only trades executed before 2:30pm in a predefined list of instruments will be fed to the test systems of EUI, LCH and x-clear. This post trade testing service will not support high volume trading activity, so customers are requested to limit trading activity in the test enabled instruments. The list of enabled instruments will be published prior to EAS Post Trade Testing commencing.

The Exchange recommends that customers discuss testing requirements with their GCM (if applicable) and CCP prior to commencing testing.

To participate in post trade testing activity during EAS, customers must inform their Exchange Technical Account Manager and return a Participant Acceptance Testing form to EUI (available from the EUI On Demand Trialling Team – 08459 645648, option 5 or, uk-ondemand@euroclear.com) before 17 September 2010.

5.3. Dress Rehearsal Activity

The goal of the dress rehearsals is to ensure market readiness and to protect the integrity of the market after Go Live. Dress rehearsals are performed in the Exchange's live production environment. Customers will need to perform and pass any relevant mandatory testing prior to the dress rehearsals.

Customers are required to connect using their live enablements. Customers using a Vendor Access Provider (VAN) for connectivity to Millennium should discuss their dress rehearsal arrangements with their VAN provider.

During the dress rehearsals, customers will be required to perform pre-defined functional activities which will be communicated by the Exchange via a Dress Rehearsal guide no later than 2 weeks prior to the first dress rehearsal. The activities will be monitored by the Exchange for market readiness purposes and customer performance will be evaluated against the communicated criteria. The first dress rehearsal is mandatory for all customers.

Dress rehearsal 2 will be used to test the invocation of the Exchange's secondary site. This Alternative Site Recovery (ASR) test is optional for customers who passed the first rehearsal; however, the Exchange recommends that all customers participate. For customers that do not successfully pass the first dress rehearsal, the second dress rehearsal will be mandatory. Failure to meet the success criteria on the second rehearsal may delay the customer going live on the production system.

Customers should note that the reference data files as described in MIT401 - Reference Data Service Specification, will be available in advance of the dress rehearsal weekends.

In order to assist customer testing of their production configurations, TradElect will also be available during the dress rehearsals. Customers will be able to perform functional activities as they would during a normal trading day, to facilitate testing of the Order Book for Retail Bonds which will remain on TradElect post go-live. **Customers are advised that all other instruments on TradElect will be in a suspended state.**

Prior to each dress rehearsal, customers are recommended to take a backup of data. This will ensure that on completion of the dress rehearsal activities they are able to roll back to the known position in readiness for TradElect production service the following Monday morning.

5.4. Go-live Connectivity Weekend

The purpose of the Go-live weekend is to allow customers to test connectivity for their production applications on the Saturday prior to Day One of the new Trading system the following Monday. Customers will only be able to test connectivity, no trading activity will be allowed.

TradElect will also be available during the go-live weekend but as with Millennium Exchange, customers will only be able to test connectivity.

Further details for Go-live weekend including how we will communicate will be made available at a later date, but the cutover and contingency dates are show below:

- 30 October 2010 – Cutover weekend
- 13 November 2010 – Contingency cutover weekend

6. Migration Milestone Summary

There are a number of key milestones described in this document. A summary can be found below:

Activity	Date
New Static Data Form available	27 August 2010
Customer Request Forms to be returned in time for the start of EAS	3 September 2010
Customer Static Data Migration	10 September 2010
Return Participant Acceptance Testing form to EUI	17 September 2010
EAS (Mandatory)	20 September 2010 - 22 October 2010
Return EAS downstream testing form	22 September 2010
Customer Request Forms to be returned in time for Customer Dress Rehearsal 1	24 September 2010
EAS EUI/CCP Testing	27 September 2010 - 08 October 2010
Customer Dress Rehearsal 1 (Mandatory)	09 October 2010
Customer Static Data Change Freeze	18 October 2010 – 5 November 2010
Customer Dress Rehearsal 2 (Optional)	23 October 2010
Go-live	01 November 2010
Contingency Go-live	15 November 2010

7. Appendix A – Production IP Addresses

7.1. Exchange Gateway (Trading) Services

Service	Exchange IP Address	TCP Port
Fix Trading GW 01 - Channel 1 Primary	194.169.8.1	58201
Fix Trading GW 01 - Channel 1 Backup	194.169.8.2	58201
Fix Trading GW 01 - Channel 2 Primary	194.169.8.1	58202
Fix Trading GW 01 - Channel 2 Backup	194.169.8.2	58202
Fix Trading GW 02 - Channel 1 Primary	194.169.8.3	58221
Fix Trading GW 02 - Channel 1 Backup	194.169.8.4	58221
Fix Trading GW 02 - Channel 2 Primary	194.169.8.3	58222
Fix Trading GW 02 - Channel 2 Backup	194.169.8.4	58222
Fix Trading GW 03 - Channel 1 Primary	194.169.8.5	58241
Fix Trading GW 03 - Channel 1 Backup	194.169.8.6	58241
Fix Trading GW 03 - Channel 2 Primary	194.169.8.5	58242
Fix Trading GW 03 - Channel 2 Backup	194.169.8.6	58242
Native Trading 01 Realtime Channel	194.169.8.48	58601
Native Trading 01 Recovery Channel	194.169.8.48	58801
Native Trading 02 Realtime Channel	194.169.8.49	58602
Native Trading 02 Recovery Channel	194.169.8.49	58802
Native Trading 03 Realtime Channel	194.169.8.50	58603
Native Trading 03 Recovery Channel	194.169.8.50	58803
Native Trading 04 Realtime Channel	194.169.8.51	58604
Native Trading 04 Recovery Channel	194.169.8.51	58804
Native Trading 05 Realtime Channel	194.169.8.52	58605
Native Trading 05 Recovery Channel	194.169.8.52	58805
Native Trading 06 Realtime Channel	194.169.8.53	58606
Native Trading 06 Recovery Channel	194.169.8.53	58806
Native Trading 07 Realtime Channel	194.169.8.54	58607
Native Trading 07 Recovery Channel	194.169.8.54	58807
Native Trading 08 Realtime Channel	194.169.8.55	58608
Native Trading 08 Recovery Channel	194.169.8.55	58808
Native Trading 09 Realtime Channel	194.169.8.56	58609
Native Trading 09 Recovery Channel	194.169.8.56	58809
Post Trade GW 01 - Channel 1 Primary	194.169.8.24	58401
Post Trade GW 01 - Channel 1 Backup	194.169.8.25	58401
Post Trade GW 01 - Channel 2 Primary	194.169.8.24	58402
Post Trade GW 01 - Channel 2 Backup	194.169.8.25	58402
Post Trade GW 02 - Channel 1 Primary	194.169.8.26	58421
Post Trade GW 02 - Channel 1 Backup	194.169.8.27	58421
Post Trade GW 02 - Channel 2 Primary	194.169.8.26	58422
Post Trade GW 02 - Channel 2 Backup	194.169.8.27	58422
Drop Copy GW 01 - Channel 1 Primary	194.169.8.32	58501
Drop Copy GW 01 - Channel 1 Backup	194.169.8.33	58501
Drop Copy GW 01 - Channel 2 Primary	194.169.8.32	58502
Drop Copy GW 01 - Channel 2 Backup	194.169.8.33	58502
Drop Copy GW 02 - Channel 1 Primary	194.169.8.34	58521
Drop Copy GW 02 - Channel 1 Backup	194.169.8.35	58521
Drop Copy GW 02 - Channel 2 Primary	194.169.8.34	58522
Drop Copy GW 02 - Channel 2 Backup	194.169.8.35	58522

7.2. Market Information Services

7.2.1. Primary Feed

ID (AltID)	Channel name	Config type	Multicast Feed A			Replay Service (Active)		Recovery Service (Active)	
			Multicast address (Active)	Multicast Source IP Address	Service Port (UDP)	LSEG VIP IP	TCP Port	LSEG VIP IP	TCP Port
XL	Off-book channel	FIX/FAST	224.4.2.1	194.169.8.66	60000	194.169.8.85	63001	194.169.8.85	64001
UKAL1	UK Level 1 - A	FIX/FAST	224.4.2.2				63002		64002
UKBL1	UK Level 1 - B	FIX/FAST	224.4.2.3				63003		64003
UKSL1	UK Level 1 Structured Products	FIX/FAST	224.4.2.4				63004		64004
EUL1	European Level 1	FIX/FAST	224.4.2.5				63005		64005
ITL1	International Level 1	FIX/FAST	224.4.2.6				63006		64006
UKA2P	UK Level 2 Snapshot (price) - A	FIX/FAST	224.4.2.7				63007		64007
UKB2P	UK Level 2 Snapshot (price) - B	FIX/FAST	224.4.2.8				63008		64008
UKS2P	UK Level 2 Snapshot Structured Products (price)	FIX/FAST	224.4.2.9				63009		64009
IT2P	International Level 2 Snapshot (price)	FIX/FAST	224.4.2.10				63010		64010
UKA2O	UK Level 2 Snapshot (order) - A	FIX/FAST	224.4.2.11				63011		64011
UKB2O	UK Level 2 Snapshot (order) - B	FIX/FAST	224.4.2.12				63012		64012
UKS2O	UK Level 2 Snapshot Structured Products (order)	FIX/FAST	224.4.2.13				63013		64013
EU2O	European Level 2 Snapshot (order)	FIX/FAST	224.4.2.14				63014		64014
IT2O	International Level 2 Snapshot (order)	FIX/FAST	224.4.2.15				63015		64015
IND	FTSE Indices - UK and International	FIX/FAST	224.4.2.16				63016	N/A	N/A
RNS	Regulatory News Service	FIX/FAST	224.4.2.17				63017	N/A	N/A
A	FTSE 100 full depth - A	ITCH	224.4.2.32				63032	194.169.8.85	64032
B	FTSE 100 full depth - B	ITCH	224.4.2.33				63033		64033
C	FTSE 250 full depth	ITCH	224.4.2.34				63034		64034
D	Structured Products full depth	ITCH	224.4.2.35				63035		64035
E	Miscellaneous full depth	ITCH	224.4.2.36				63036		64036
F	European full depth	ITCH	224.4.2.37				63037		64037
G	International full depth	ITCH	224.4.2.38				63038		64038

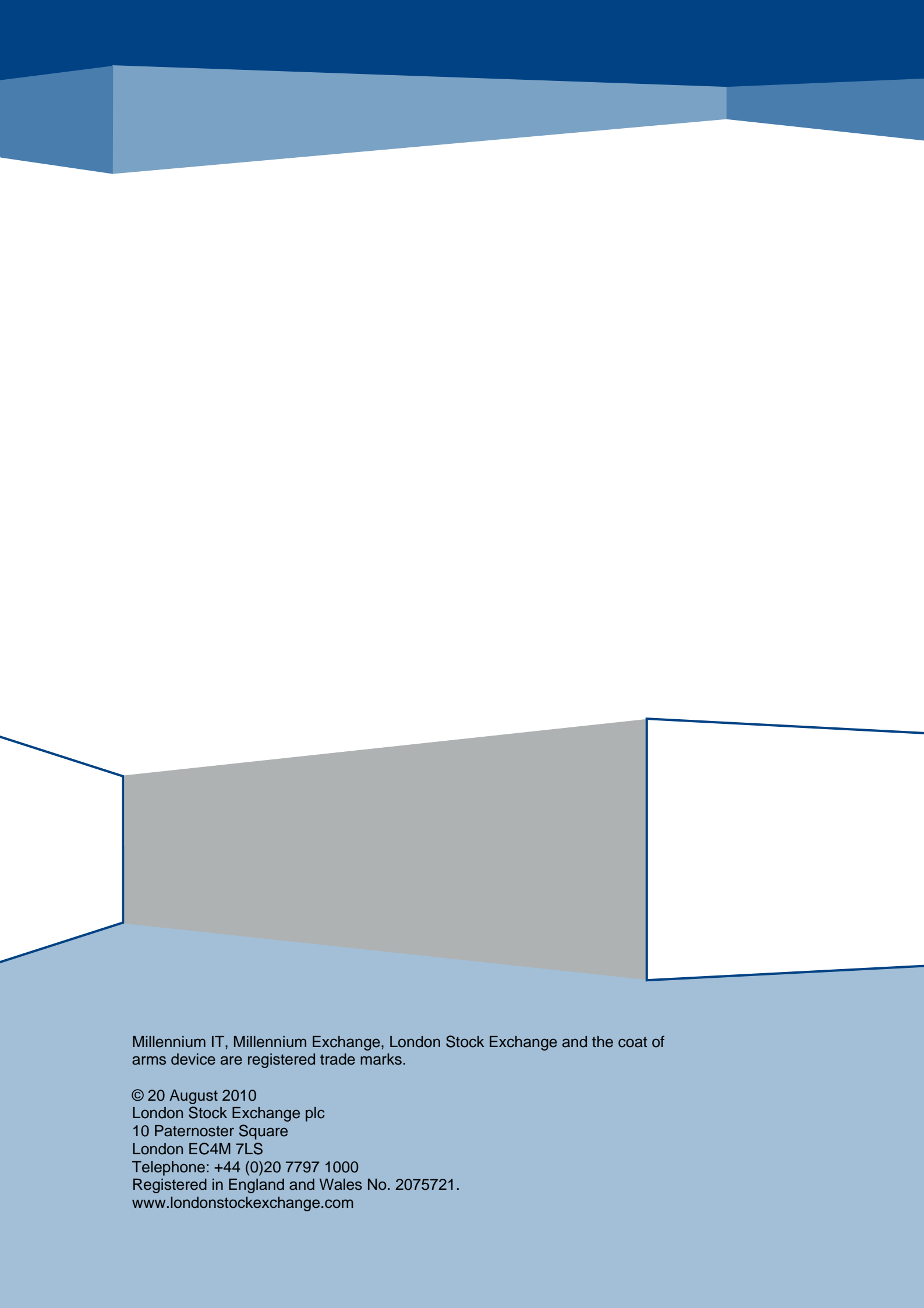
7.2.2. Secondary Feed

			Feed B						
			Multicast Feed B (Active)			Replay Service (Passive)		Recovery Service (Passive)	
ID (AltID)	Channel name	Config type	Multicast address (Active)	Multicast Source IP Address	Service Port (UDP)	LSEG VIP IP	TCP Port	LSEG VIP IP	TCP Port
XL	Off-book channel	FIX/FAST	224.4.3.1	194.169.8.98	60000	194.169.8.115	63001	194.169.8.115	64001
UKAL1	UK Level 1 - A	FIX/FAST	224.4.3.2				63002		64002
UKBL1	UK Level 1 - B	FIX/FAST	224.4.3.3				63003		64003
UKSL1	UK Level 1 Structured Products	FIX/FAST	224.4.3.4				63004		64004
EUL1	European Level 1	FIX/FAST	224.4.3.5				63005		64005
ITL1	International Level 1	FIX/FAST	224.4.3.6				63006		64006
UKA2P	UK Level 2 Snapshot (price) - A	FIX/FAST	224.4.3.7				63007		64007
UKB2P	UK Level 2 Snapshot (price) - B	FIX/FAST	224.4.3.8				63008		64008
UKS2P	UK Level 2 Snapshot Structured Products (price)	FIX/FAST	224.4.3.9				63009		64009
IT2P	International Level 2 Snapshot (price)	FIX/FAST	224.4.3.10				63010		64010
UKA2O	UK Level 2 Snapshot (order) - A	FIX/FAST	224.4.3.11				63011		64011
UKB2O	UK Level 2 Snapshot (order) - B	FIX/FAST	224.4.3.12				63012		64012
UKS2O	UK Level 2 Snapshot Structured Products (order)	FIX/FAST	224.4.3.13				63013		64013
EU2O	European Level 2 Snapshot (order)	FIX/FAST	224.4.3.14				63014	64014	
IT2O	International Level 2 Snapshot (order)	FIX/FAST	224.4.3.15				63015	64015	
IND	FTSE Indices - UK and International	FIX/FAST	224.4.3.16				63016	N/A	N/A
RNS	Regulatory News Service	FIX/FAST	224.4.3.17				63017	N/A	N/A
A	FTSE 100 full depth - A	ITCH	224.4.3.32				63032	194.169.8.115	64032
B	FTSE 100 full depth - B	ITCH	224.4.3.33				63033		64033
C	FTSE 250 full depth	ITCH	224.4.3.34				63034		64034
D	Structured Products full depth	ITCH	224.4.3.35	63035	64035				
E	Miscellaneous full depth	ITCH	224.4.3.36	63036	64036				
F	European full depth	ITCH	224.4.3.37	63037	64037				
G	International full depth	ITCH	224.4.3.38	63038	64038				

7.2.3. Production SFTP Address

Customers should target the following IP address for access to the SFTP files associated with the Millennium Exchange production environment:

- 194.169.8.40 (TCP Port: 58101)



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