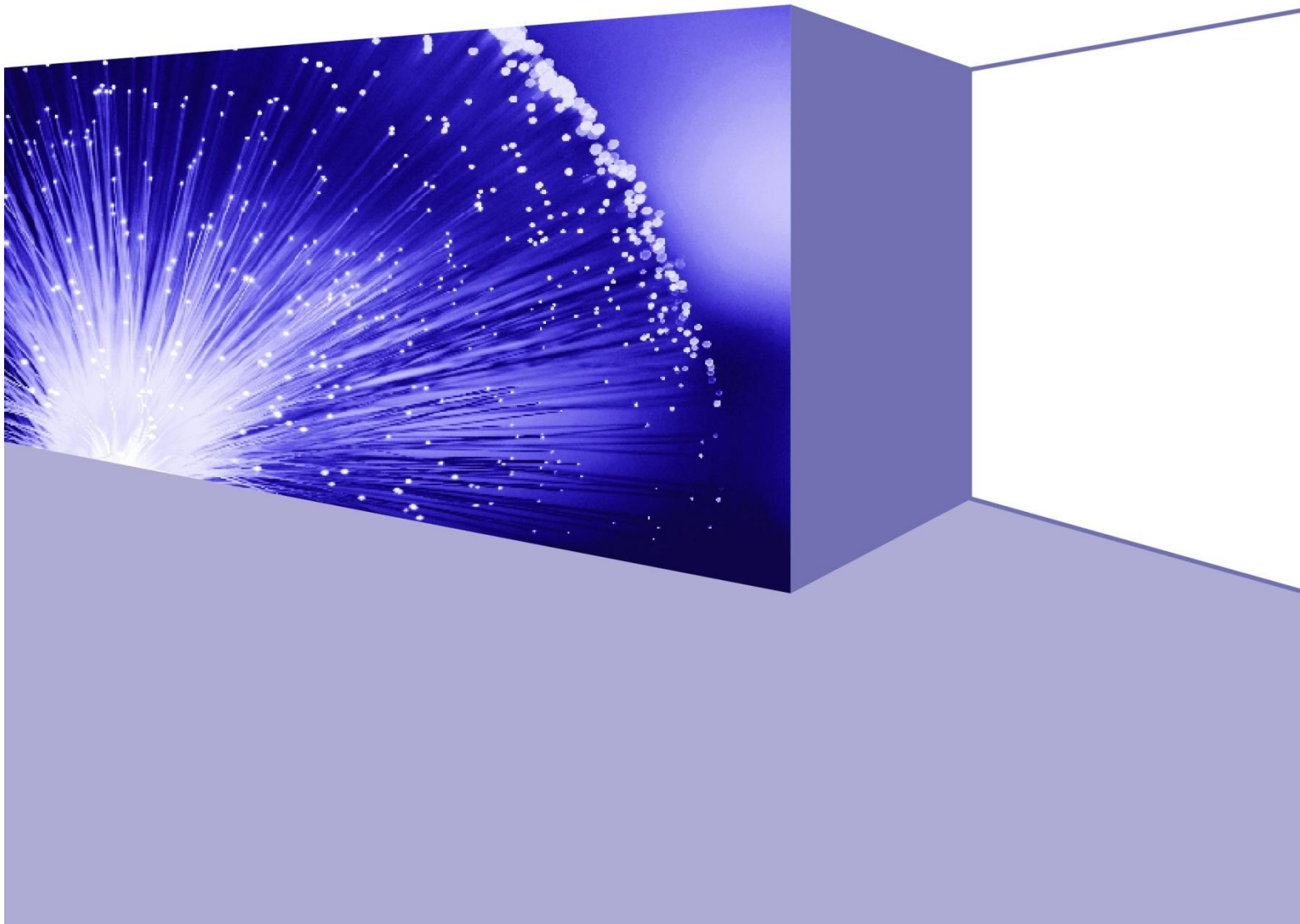




**London**  
Stock Exchange

FIX GATEWAY

# Non-Member OTC Trade Reporting Service & Technical Guide



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# 1. Service Description

## 1.1 Service Summary

The Exchange provides a pan-European OTC trade reporting service to allow firms to meet their post-trade transparency obligations, via a connection to the LSE FIX Gateway. The service supports publication for any unregulated trades in MiFID securities executed away from the Exchange's markets.

In addition to post-trade reporting on UK and international markets, MiFID requires all shares admitted to trading on an EU Regulated Market (EURM) to be reported in a similar manner.

### Key features:

- 'One stop shop' pan-European service available from 07:15 to 17:15 UK time / 08:15 to 18:15 CET. Reports received outside these hours will be stored and then forwarded for publication once the system opens
- Open on all EU business days for the European Markets. The LSE Markets (including the UK and International trading services) will be open on all UK business days
- Designed for customers to meet their requirement for immediate real-time trade reporting
- When requested, fully automated management of any publication delays applicable under MiFID
- Real-time price monitoring to uphold data integrity
- Venue ID displayed for each trade
- Publication to over 100,000 terminals, displayed in over 100 countries, and to over 150 vendors
- Delivered on the Exchange's Millennium trading technology offering the highest levels of availability
- Global publication via our website showing delayed data free of charge<sup>1</sup>

## 1.2 LSE FIX Gateway

The Gateway is a FIX 4.2 messaging network combining the benefits of a hub with the flexibility of a direct connection, allowing customers to agree to bilateral business relationships to exchange FIX 4.2 messages.

With the addition of FIX 4.4 messages the Gateway allows customers to connect to the London Stock Exchange's Millennium Technology (MIT) Trade Reporting Service.

Using the FIX Gateway in this manner allows firms to take advantage of standardised FIX connectivity to access the Exchange's OTC trade reporting service via the Trade Reporting Bridge and take advantage of the same technological and data integrity surveillance benefits as offered to any on-Exchange reports.

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<sup>1</sup> Data is delayed by 15 minutes and is non-chargeable

### 1.2.1 FIX Connectivity

Connectivity to the Exchange can be established either via a selection of networks or via partner hubs:

1. Direct connectivity to the FIX Gateway is currently available via Verizon Extranex, BT Radianz, TNS and Verizon VPN (Please see Appendix 3).

Extranex access to the FIX Gateway is via an address range allocated by Verizon as part of the enablement process. For BT Radianz and TNS users, this will also be allocated by the provider. Customers using Extranex can either use the native addressing scheme or use their devices to translate to and from the allocated addresses.

Further details on how the Extranex service is provided are available at the following address:

<http://www.londonstockexchange.com/products-and-services/connectivity/extranex/extranex.htm>

2. Customers can choose to connect via partner hubs that are already connected to the LSE FIX Gateway and can be the intermediary (virtual) participants between the end customer and the LSE Hub.

For further details regarding our partner hubs please contact us, at **+44 (0) 20 7797 4135** or at [lsefix@londonstockexchange.com](mailto:lsefix@londonstockexchange.com).

### 1.2.2 Service Enablement

To receive the service, new customers must complete the necessary documents and return them to the Exchange for the completion of the service enablement process.

The following table details the documentation that needs to be completed:

Form	Purpose
FIX Gateway Order Form and TCs	To order access to the FIX Gateway.
FIX Gateway OTC Trade Report Questionnaire	To register company contact details and the setup specifications of the connection.
Non Member OTC Trade Report Form	To order access to the Trade Reporting Service and register contact and invoicing details.

Existing FIX Gateway Customers that wish to get access to the OTC Trade Reporting Service will still need to complete the OTC Trade Report Form and the FIX Gateway OTC Trade Report Questionnaire.

### 1.2.3 Enablement Environments

The FIX Gateway consists of two separate environments both linked to the LSE Trade Reporting Service; the User Acceptance Testing (UAT) environment and the Production (LIVE) environment. The CompID of the customer and the connection between the customer and the Trade Reporting platform are first enabled in the UAT environment and then in Production. This allows the customers to identify and solve potential errors in the process before the connection is enabled in Production and live Trade Reporting activity starts.

The process for the enablement is the same for both the live and the UAT environments. The customer can request enablement by email once the relevant documentation has been completed and processed.

#### **1.2.4 Testing Requirements**

Upon completion of the service enablement, customers that connect directly to the Gateway will be required to demonstrate that their FIX Gateway applications can connect successfully to the Gateway by undertaking 2 basic connectivity tests: the **FIX Connectivity Test (FCT)** and the **FIX Live Connectivity Test (FCON)**. These tests are designed to give customers the opportunity to resolve any network or application level issues with direct Exchange and Third-Party Network support. No customers will be enabled for access to the Production FIX Gateway without passing a FIX Live Connectivity (FCON) test.

#### **Fix Connectivity Testing (FCT)**

Connectivity Testing is carried out using the FIX Gateway Test Service and is required before access to the UAT environment is granted. It is designed to give customers the opportunity to resolve any network or application level issues with direct Exchange and Third-Party Network support.

#### **FIX Live Connectivity Test (FCON)**

The FCON follows exactly the same format as the FCT and is designed to demonstrate that customers can connect to the Production FIX Gateway service without any issues that may impact the live service

#### **Test booking and support**

To book an FCT or FCON a customer needs to call the London Stock Exchange FIX Helpdesk and supply details of both the enablement they wish to test (e.g. INI00001 or ACC00001) as well as the contact who will be performing the test.

The FIX Helpdesk number is **+44 (0) 20 7797 3100 (Option 3)**

Before FCT or FCON tests are carried out, the customer must ensure that all network and application configuration is complete. The test team allows one hour for the supported sessions and the session must be booked 72 hours in advance. Whilst this is more than adequate to complete an FCT or an FCON it does not allow additional time for customer side configuration. Please note that our Customer Test Analysts (CTAs) are available on Monday to Friday between 09:00 and 17:00.

### 1.2.5 Business Hours

Market Segment Rules determine the times during which trade reports may be entered on the trading system.

<b>Securities</b>	<b>Business Calendar</b>	<b>Time zone</b>
<b>UK Securities</b>	The market will be open each weekday with the exception of days that are public holidays within UK.	The market operates on London Time; 07:15 to 17:15
<b>European Securities (EQS/ITR)</b>	The market will be open each weekday with the exception of days that are public holidays within the entire EU.	The market operates on CET; 08:15 to 18:15

The FIX Gateway is available from Saturday 22:35 to Friday 22:30 excluding maintenance daily between 22:30 and 22:35 daily and between 22:30 pm on Friday to 22:35 on Saturday.

<b>Environment</b>	<b>Start-of-Week</b>	<b>End-of-Day</b>	<b>Start-of-Day</b>	<b>End-of-Week</b>
EMEA Production (Live)	Sat @ 22:35	22:30	22:35	Fri @ 22:30
APAC Production (Live)	Sat @ 15:05	15:00	15:05	Fri @ 15:00
Testing (UAT)	Sat @ 22:35	22:30	22:35	Fri @ 22:30

Every FIX Trade Reporting session will open by Start of Business. Any Trade Reporting Messages received outside of the Gateway's Business hours will be stored and forwarded at the Start of Business the next day. All times in the table above are in GMT/BST (London time).

## 1.3 Non-Member OTC Trade Reporting

### 1.3.1 Trade Types & Venue ID

Trade types are used to demonstrate that a trade has been executed OTC rather than On-Exchange. Customers will need to select the suitable trade type and report the transaction to the Exchange.

The table below shows the trade types that will be offered for reporting OTC trades and the Venue ID that will be set (by us) based on the selected trade type.

Non-members reporting inter-fund crosses will be able to use a specific trade type to notify the market.

Customers will automatically receive any applicable delay to their trade report.

Tag 828	Trade Type	Description	Venue ID
0	OT	OTC trade immediate publication	XOFF
1	TK	OTC delayed publication (upon request)	XOFF
42	IF	Inter fund cross publication	XOFF
1007	OC	OTC Late Correction	XOFF

Please note these trade types are only applicable to trade reports in European Regulated Market (EURM) securities.

### 1.3.2 Stock Coverage

The most important distinction is between those securities that are UK listed and the European securities that are not listed on a UK market.

The table sets out the segmentation of the stocks as set up in the Exchange's systems:

Stock Coverage		Timezone	OFF EXCHANGE OTC Trade Reporting (MiFID Securities only)
<b>UK</b>			
SETS	FTSE All Share & some Fledgling	London Time (GMT/BST)	✓
SETSqx	Remaining Fledgling & non-indexed equities on Main Market	London Time (GMT/BST)	✓
<b>European</b>			
EQS	EURM Liquid Equities (non-UK/Dutch)	CET	✓
ITR	Remaining EURM, non-Liquid equities	CET	✓

The trade time populated in a trade report must be specified in the applicable timezone:

#### UK securities:

- **Time Zone:** the market operates on GMT / BST - 07:15 to 17:15.
- **Business Calendar:** the market will be open each weekday with the exception of days that are public holidays within UK. The business calendar will be kept under review and is available at: [www.londonstockexchange.com/businessdays](http://www.londonstockexchange.com/businessdays)

#### European securities:

- **Time Zone:** the market operates on CET - 08:15 to 18:15.
- **Business Calendar:** the market will be open each weekday with the exception of days that are public holidays within the entire EU. The business calendar is available at: [www.londonstockexchange.com/businessdays](http://www.londonstockexchange.com/businessdays)

#### Other Features - All EURM securities:

- **Market Segments & Sector Structure:** the market segment structure is available in the document 'Millennium Exchange Business Parameters' which can be found at: <http://www.londonstockexchange.com/products-and-services/millennium-exchange/technicalinformation/technicalinformation.htm>
- **Currency:** the currency of trading for the respective securities will be determined on a security-by-security basis and will follow the Home Market. Due to the broad geographical spread of securities on the market, a wide range of international currencies will be represented. Trades executed in currencies that are not the Home Market currency will be converted by the reporting party into the Home Market currency for reporting purposes.
- **Stock Suspension in the Home Market:** where a stock is suspended on the Home Market for regulatory reasons, the FSA will ordinarily require all UK markets to also suspend trading, "unless this would damage the interest of investors or the orderly functioning of the financial markets" [Article 41(2) of MiFID]. Where trading is halted in the Home Market owing to technical reasons or pending news announcements, we will continue to operate our service unless instructed to do otherwise by the FSA.

### 1.3.3 Monitoring

OTC trade reports will be monitored in line with MiFID and the FSA's Trade Data Monitor guidelines. Monitoring will consist of at least the activities shown below.

- Real time price monitoring. Millennium exchange rejects any outlier trade reports to prevent 'fat finger' errors being published to the market.
- Published trades will be monitored by our surveillance system to ensure data integrity, with firms disseminating corrections as required.



### **1.3.4 Correction Process**

Where a correction to a trade report is to be submitted within three days of publication of the trade report or, where the trade report will not be published within three days of submission of the trade report, the correction shall be effected by:

- cancelling the trade report (which will prevent an incorrect trade report publishing if this is done before a delayed report's delay has expired); and
- if correcting an error in the trade report, submitting a new trade report.

### **1.3.5 Publication Delay**

When a trade type offering delayed publication is used the system will check whether there is any applicable delay and apply this.

The delay will follow the Business Calendar for the trading service on which the security is traded.

EURM securities whether traded on the Exchange's Regulated Markets or as an MTF will have the ADT set by the relevant competent authority (e.g. FSA). Non-EURM securities traded on our markets will have the ADT calculated and set by the Exchange. This information is available within the Millennium Exchange Business Parameters Document:

<http://www.londonstockexchange.com/products-and-services/trading-services/millennium-exchange-business-parameters.xls>

Publication thresholds will be translated into the trading currency of the relevant security. These will be reviewed on an at least an annual basis and will be rounded to provide a suitable number of shares.

### **1.3.6 Trade Reporting Responsibility**

Where the transaction is executed outside the rules of a regulated market or an MTF, one of the participating investment firms shall, by agreement between the parties, arrange to make the information public.

In the absence of an alternative agreement, the information shall be made public by the investment firm determined by proceeding sequentially from point (a) to point (d) until the first point that applies to the case in question.

- (a) the investment firm that sells the share concerned;
- (b) the investment firm that acts on behalf of or arranges the transaction for the seller;
- (c) the investment firm that acts on behalf of or arranges the transaction for the buyer;
- (d) the investment firm that buys the share concerned.

## 2. Technical FIX Process Overview

### 2.1 FIX 4.4 Capabilities

The Non – Member OTC Trade Reporting Service is based on the LSE FIX Gateway which utilises FIX 4.2 messages. To facilitate the Trade – Reporting Service the Gateway has been enhanced to support additional FIX 4.4. messages. The supported FIX 4.4 message types (Tag 35 values) are described in the following table:

Field	Field Name	Comments
AE	TradeCaptureReport	The Trade Capture Report message can be used to report trades between counterparties and to report trades to a trade matching system. It also can be sent unsolicited between counterparties, sent as a reply to a Trade Capture Report Request and can be used to report unmatched and matched trades.
AR	TradeCaptureReportAck	The Trade Capture Report Ack message can be used to acknowledge trade capture reports received from counterparty and to reject a trade capture report received from a counterparty.

## 2.2 Functions

The following section describes the basic functionality of the Trade Reporting Service and the messages required for a successful completion of the Trade Report in each instance.

Please note how the “incoming” and “outgoing” messages are defined:

- **Incoming** Message: From the Customer to the LSE FIX Gateway
- **Outgoing** Message: From the LSE FIX Gateway to the Customer

### 2.2.1 New Trade Report:

The following table provides the required tags and Field Names for an Incoming Trade Capture Report Message:

<b>Incoming Trade Capture Report Message</b>				
<b>Tags</b>	<b>Field Name</b>	<b>Required</b>	<b>Comments</b>	
828	TrdType	Yes	Potential Values: 0 = OTC immediate pub. 1 = OTC delayed pub. 42 = Inter-fund cross 1007 = OTC late correction	
571	TradeReportID	Yes	Along with CompID this field identifies the report	
150	ExecType	Yes	Potential Values: 0 = New 4 = Cancelled 5 = Replace .....	
48	SecurityID	Yes	ISIN of security	
22	SecurityIDSource	Yes	Values: 4 = ISIN	
336	TradingSessionID	No	Contains LSE Segment Code (if known)	
470	CountryOfIssue	No	ISO 3166 code of issuing country (if known)	
918	AgreementCurrency	Yes	ISO 4217 code	
64	SettlDate	Yes	Trade settlement date	
31	LastPx	Yes	Traded price	
32	LastQty	Yes	Traded Quantity	
60	TransactTime	Yes	Time of trade	

### 2.2.2 New Trade Report Acknowledgement:

The Trade Capture Report ACK message is sent in response to a Trade Capture Report. The following table provides the required tags and Field Names for an outgoing FIX Message:

<b>Outgoing Trade Capture Report Ack</b>			
<b>Tags</b>	<b>Field Name</b>	<b>Required</b>	<b>Comments</b>
571	TradeReportID	Yes	Matches value in initial report.
939	TrdRptStatus	No	Valid values: 0 = Accepted 1 = Rejected
751	TradeReportRejectReason	No	See Error Mapping
58	Text	No	See Error Mapping
150	ExecType	Yes	Potential values 0 = New Trade 4 = Cancelled 5 = Replace
48	SecurityID	Yes	Retrieved from database
22	SecurityIDSource	Yes	Retrieved from database

### 2.2.3 Interim New Trade Report Acknowledgement:

The Trade Report that passes all validations is received outside business hours then an Interim Trade Report Acknowledgement will be sent to the customer. When the connection is re-established, the Trade Report will be routed to the Exchange.

The following table describes the tags and the field names included in the Incoming Interim Trade Capture Report Message:

<b>Outgoing Trade Capture Report Ack</b>			
<b>Tags</b>	<b>Field Name</b>	<b>Required</b>	<b>Comments</b>
571	TradeReportID	Yes	Value submitted with original request
939	TrdRptStatus	No	[No Value]
751	TradeReportRejectReason	No	[No Value]
58	Text	No	[No Value]
150	ExecType	Yes	Value H = Trade Cancel
48	SecurityID	Yes	Value submitted with original request
22	SecurityIDSource	Yes	Value submitted with original request

#### 2.2.4 Cancel Trade Report:

Cancellation of a previously sent Trade Report is done by sending another Trade Capture Report with a different 'ExecType'.

The following table describes the tags and the field names included in the incoming Cancel Trade Report Message:

<b>Incoming Trade Capture Report Message</b>			
<b>Tags</b>	<b>Field Name</b>	<b>Required</b>	<b>Comments</b>
571	TradeReportID	Yes	Required for look – up of Trade ID
150	ExecType	Yes	Valid value for cancel H = Trade Cancel

#### 2.2.5 Cancel Trade Report Acknowledgement:

Mapping is identical to that seen in section 2.2.2 New Trade Report Acknowledgement but with an [ExecType] of H for 'Trade Cancel'.

#### 2.2.6 Error Mapping:

Trade Report Rejections/Error Reports are sent back from the Trade Reporting Gateway with the following tags/fields/values:

<b>Outgoing Trade Report Reject</b>			
<b>Tags</b>	<b>Field Name</b>	<b>Required</b>	<b>Comments</b>
571	TradeReportID	Yes	Value submitted with original request
939	TrdRptStatus	Yes	1 = Rejected
751	TradeReportRejectReason	Yes	0 = Successful (Default) 1 = Invalid party information 2 = Unknown instrument 3 = Unauthorized to report trades 4 = Invalid trade type 99 = Other
58	Text	No	Reason for rejection
150	ExecType	Yes	Value H = Trade Cancel
48	SecurityID	Yes	Value submitted with original request
22	SecurityIDSource	Yes	Value submitted with original request

The Trade Report Reject message can originate from either the Trade Reporting Bridge (TRB) or the Millenium Platform (MIT), which the TRB will pass through unchanged. All TRB rejections will contain Tag 751 [TradeReportRejectReason] = 99 [Other], with Tag 58 [Text] containing the reason for rejection. MIT error codes can take other values, with the text field providing further information. A full list of error codes from the Trade Reporting Bridge are displayed in Appendix 1, and those from MIT in Appendix 2.

## 2.2.7 Sides and Parties:

MIT requires a fully populated set of sides and parties (two sides to the trade, one party on each side). Resolution of the field is dependent on the incoming FIX 4.2 message. There are three possible scenarios, as described below:

- Scenario 1: Zero sides are supplied
- Scenario 2: One side is supplied
- Scenario 3: Two sides are supplied

During the setup process a 'Non-Member ID' will be created and mapped to the CompID of the reporting firm for the purpose of populating

### Scenario 1: Zero sides are supplied:

When zero sides are supplied in the FIX Trade Report Message then the following actions will be taken from the Bridge:

- A lookup by CompID will be used to determine the LSE Non-Member ID from the reference data.
- The Member ID that is found there is used for the sender and forms the "Sell" side of the report; this follows the MiFID standard.
- The "buy" side of the report will be populated using "NONMEMBER01" for the LSE Member ID.

### Scenario 2: One side is supplied:

When a single side is supplied in the FIX Trade Report Message then the following actions will be taken from the Bridge:

- A lookup by CompID will be used to determine the LSE Member ID from the reference data.

If a single side is supplied that could happen for one of the following two reasons:

1) The submitter wants to submit a non-default value or AccountType and / or Order Capacity, or the submitter wishes to indicate that they were the buyer and not the seller:

- In this case the senders LSE Member ID matches the Party ID of the one provided Side. This case is also assumed if no PartyID is present in the FIX side. The side and party are directly mapped. The values for AccountType and OrderCapacity in the side are used, if one or both is present. If not present, the value(s) looked up by the CompID are used. The MemberID Buy / Sell should match the Side of the trade report.
- The other side of the report is populated using "NONMEMBER01".

2) The submitter wishes to report a trade with someone else:

- The sender's LSE Member ID does not match the Party ID of the provided Side.
- this MemberID is used in the appropriate side of the trade report, but the AccountType and OrderCapacity must be the default ones associated with the CompID, which will also provide the MemberID for the other side of the Trade Report.
- The received side and party are directly mapped.
- The other side of the report is populated using the senders LSE Member ID.

### **Scenario 3: Both sides are supplied:**

In this case a CompID is trying to report a trade with another entity and when sides are reviewed, one side will be for the MemberID associated with the CompID and one will be for another Member ID.

The two PartyIDs / MemberIDs from the sides should be used as appropriate in the trade report and the AccountType and OrderCapacity should be taken from the side where the MemberID matches the one associated with the CompID (if they are present and from default if they are not).

When two sides are supplied the direct mapping will take place unless on the following error conditions are met:

#### **1) Both sides hold the same Member ID**

- The correct approach is to report just 1 side, thus the "One Side" workflow will be used.

#### **2) *Neither of the MemberIDs matched the senders MemberID.***

- An error report will be returned, since valid (or even default) values for AccountType and OrderCapacity cannot be established.

### 3. Contact Details

The Exchange recognises the importance of supporting a customer throughout the implementation of the service detailed in this document. The current support mechanisms will continue to be available to provide assistance throughout your design, development through to live service.

Please find below the contact details of the teams who would interact with you during the course of an implementation:

- For ***general business*** enquiries relating to new connections, contracts, invoicing, product management, enhancements please contact:

***LSE FIX Management Team***

+44 (0) 207 797 4135

[lsefix@londonstockexchange.com](mailto:lsefix@londonstockexchange.com)

Available 08:00-17:00 UK Time

- For all ***technical & service*** issues including testing and connectivity and general technical support please contact:

***Fix Gateway Technical Helpdesk***

+44 (0) 207 797 3100

[lsefixsupport@londonstockexchange.com](mailto:lsefixsupport@londonstockexchange.com)

Telephone support available 24/7

Email support available 07:00-18:00

UK Time



## 4. Appendix

### Appendix 1 - TRB Reject Messages:

Message	Meaning	Action Required
Ambiguous security/currency combination	The FIX message supplied insufficient security details to match a single row of reference data and as a result the MIT Instrument Code could not be determined.  <b>OR</b>  The defaults in the reference data are incomplete.	The FIX customer should supply more portions of the 4-way key <b>OR</b> Reference Data Import defaulting should be investigated.
Buy and sell partyIds must be different	When the FIX message supplies BOTH Sides, the PartyId in each must be different.	FIX Customer must supply different PartyIds for each "side".
Cannot cancel rejected Trade Report	A Trade Report that was rejected by TradElect cannot be cancelled.	No action.
Cannot cancel unknown Trade Report	A FIX Cancel Trade Report was received with a TradeReportID that was not known.	No action.
Expected 0 or 1 'NoPartyIDs' but found <count>	The NoPartyIDs field within a "Side" block can only be value 0 or 1.	FIX message should be corrected.
Expected 0, 1 or 2 'Sides' but found <count>	The NoSides field within a Trade Report message can only be 0, 1 or 2	FIX message should be corrected.
Found more than one buy side	The "Sides" block contained more than one "Buy" side.	FIX message should be corrected.
Found more than one sell side	The "Sides" block contained more than one "Sell" side.	FIX message should be corrected.
Internal Error	An unexpected internal error occurred.	Call support.
Invalid value for LastPx (tag 31): '<value>'	The LastPx field is badly formatted. It must be an 18.8 decimal (i.e. no more than 18 digits with no more than 8 decimal places).	FIX message should be corrected.

Message	Meaning	Action Required								
Invalid value for LastShares (tag 32): '<value>'	The LastShares field is badly formatted. It must be an 13.0 decimal (i.e. no more than 13 digits with no non-zero decimal places).	FIX message should be corrected.								
LastPx value will be out-of-range after currency conversion	The LastPx value in GBP would be out-of-range after conversion to GBX (GB pence).	FIX message should be corrected.								
Mandatory field is missing: <field name> (tag <tag>)	The mandatory FIX field named with the tag reported is missing.	FIX message should be corrected.								
Overlength <field> <tag> value: '<value>' (max is <max>)	The length of a field exceeds the maximum allowable value.	FIX message should be corrected.								
Reporting company must be either buy or sell party	If "Sides" are specified, one side and only one side must be the "reporting" company (i.e. the company sending the Trade Report).	FIX message should be corrected.								
Trade Report already exists. You must assign a unique TradeReportID	A Trade Capture Report has already been received from the Comp ID with the given Trade Report ID.	FIX message should be corrected.								
Unexpected 'ExecType' value: '<value>'	Invalid FIX 'ExecType' (tag 150) has been received.	FIX message should be corrected. <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>New</td> </tr> <tr> <td>H</td> <td>Cancel</td> </tr> </tbody> </table>	Value	Meaning	0	New	H	Cancel		
Value	Meaning									
0	New									
H	Cancel									
Unexpected 'AccountType' value: '<value>'	Invalid FIX 'AccountType' (tag 581) has been received.	FIX message should be corrected. <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Client</td> </tr> <tr> <td>3</td> <td>House</td> </tr> </tbody> </table>	Value	Meaning	1	Client	3	House		
Value	Meaning									
1	Client									
3	House									
Unexpected 'OrderCapacity' value: '<value>'	Invalid FIX 'OrderCapacity' (tag 528) has been received.	FIX message should be corrected. <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Agency</td> </tr> <tr> <td>P</td> <td>Principal</td> </tr> <tr> <td>R</td> <td>Riskless Principal</td> </tr> </tbody> </table>	Value	Meaning	A	Agency	P	Principal	R	Riskless Principal
Value	Meaning									
A	Agency									
P	Principal									
R	Riskless Principal									
Unexpected 'PartyIDSource' value: '<value>'	Invalid FIX 'PartyIDSource' (tag 447) has been received.	FIX message should be corrected. The only valid value is 'C'								
Unexpected 'PartyRole' value: '<value>'	Invalid FIX 'PartyRole' (tag 452) has been received.	FIX message should be corrected. The only valid value is '27'								

Message	Meaning	Action Required										
Unexpected 'SecurityIDSource' value: '<value>'	Invalid FIX 'SecurityIDSource' (tag 22) has been received.	FIX message should be corrected. The only valid value is '4'										
Unexpected 'Side' value: '<value>'	Invalid FIX 'Side' (tag 54) has been received.	FIX message should be corrected. <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Buy</td> </tr> <tr> <td>2</td> <td>Sell</td> </tr> </tbody> </table>	Value	Meaning	1	Buy	2	Sell				
Value	Meaning											
1	Buy											
2	Sell											
Unexpected 'TrdType' value: '<value>'	Invalid FIX 'TrdType' (tag 828) has been received.	FIX message should be corrected. <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Regular Trade</td> </tr> <tr> <td>1</td> <td>Block Trade</td> </tr> <tr> <td>42</td> <td>Portfolio Transfer</td> </tr> <tr> <td>54</td> <td>Off-Book Trade</td> </tr> </tbody> </table>	Value	Meaning	0	Regular Trade	1	Block Trade	42	Portfolio Transfer	54	Off-Book Trade
Value	Meaning											
0	Regular Trade											
1	Block Trade											
42	Portfolio Transfer											
54	Off-Book Trade											
Unknown security/currency combination	The FIX Trade Report contained an unknown (according to reference data) combination of <ul style="list-style-type: none"> <li>☐ SecurityID (tag 48)</li> <li>☐ Currency (tag 918)</li> <li>☐ TradingSessionID (tag 336, if present)</li> <li>☐ CountryOfIssue (tag 470, if present).</li> </ul>	FIX message should be corrected.										
Unmappable FIX CompID	The t_TradeReportCompRefData table does not contain an entry for the FIX CompID	The t_TradeReportCompRefData table should be updated.										

## Appendix 2 - MIT Error codes:

Reject Code	Length	Description
1	22	Unknown executing firm
1	19	Unknown contra firm
1	33	Unknown executing user (Owner ID)
1	34	Unknown executing user (Trader ID)
3	58	User not registered to submit trade reports for instrument
3	55	User not registered to submit third party trade reports
99	60	User not eligible for specified Capacity/TT/Instrument Group
99	18	Invalid price band
99	52	Invalid Instrument with no closing price maintained.
99	23	Invalid settlement date
99	40	Invalid instrument without a delay model
99	43	Invalid Instrument with invalid delay model
99	25	Trade Reporting time over
99	45	Invalid TrdSubType(829) for zero priced trade
99	28	Invalid trade price ( $\leq$ zero)
99	27	Invalid trade size ( $\leq$ zero)
99	18	Invalid trade time
99	18	Invalid trade type
99	16	Unknown Trade ID
99	30	Unknown contra user (Owner ID)
99	34	Unknown contra user (Default User)
99	53	Executing firm not registered to submit trade reports
99	50	Contra firm not registered to submit trade reports
99	57	Not registered to submit trade reports for executing firm
99	54	Not registered to submit trade reports for contra firm
99	40	User not authorised to pre-release trade
99	35	User not authorised to cancel trade
99	23	Trade already cancelled
99	23	Trade already published
99	29	Invalid trade reporting model
99	37	Unknown executing user (Default User)
99	29	Trade exempt from publication
99	49	Executing user (Owner ID) not from executing firm
99	43	Contra user (Owner ID) not from contra firm
99	57	Executing firm and contra firm included for a single side
99	39	Trade reporting disabled for instrument
99	55	Trade reporting disabled for instrument (no order book)
99	39	Instrument halted (session not started)

99	17	Instrument halted
99	42	Cancel request for trade already submitted
99	42	Invalid instrument set up (no delay table)
99	51	Invalid instrument set up (no trade sub type table)
99	43	Invalid system set up (no trade type table)
99	50	Invalid instrument set up (empty trade type table)
99	55	Invalid instrument set up (unsupported reporting model)

### Appendix 3 - Network access

Access to the FIX Gateway Production environment is provided through Verizon Extranet, Verizon VPN, BT Radianz and TNS. For the UAT environment, only, access can also be accommodated via the Internet.

IP Addresses for Exchange and customer hosts are provided as part of the enablement process. Extranet customer host addresses will be in the range 10.x.x.x. For access to the Internet Test service participants will need to provide an IP address as part of the enablement process.

The destination addresses for all the FIX Gateway services are presented in the following table:

<b>Environment</b>	<b>Access</b>	<b>IP Address</b>	<b>Port</b>
EMEA Production (Live)	Extranet	10.1.11.170	2001
APAC Production (Live)	Extranet	10.1.11.190	2001
Testing (UAT)	Extranet	10.1.9.170	2001
Testing (UAT)	Internet	194.169.1.66	2001
EMEA Production (Live)	1Gb Optical SAP	194.169.14.193	2001
APAC Production (Live)	1Gb Optical SAP	194.169.14.194	2001
Testing (UAT)	1Gb Optical SAP	194.169.14.225	2001

For internet a registered IP address or range will need to be provided by the customer. Access via third party network providers will be co-ordinated by the Exchange. Access addresses will be provided by the network provider and translated into an Exchange network address at the point of entry of the network provider on to the Exchange network. This will be transparent to the participant who will usually be allocated addresses to connect to and from their existing range.

## Appendix 4 – Message Examples

- New 'Trade Capture Report' Message:

8=FIX.4.2|9=179|35=AE|56=LSEHub|49=BROKERX|128=LSETR|34=2175|52=20120126-15:15:54|918=GBP|31=89.0000000|64=20120126|828=1|60=20120126-13:32:49|32=6|22=4|571=124|43=N|570=N|150=0|48=GB0007188757|10=017|

- New 'Trade Capture Report' Acknowledgement:

8=FIX.4.2|9=113|35=AR|49=LSEHub|56=BROKERX|115=LSETR|34=2006|52=20120126-15:15:54|370=20120126-15:15:54.822|571=124|150=0|939=0|10=126|

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- New 'Cancel Trade Report' Message:

8=FIX.4.2|9=127|35=AE|49=LSEHub|56=LSETR|115=BROKERX|34=2287|43=N|52=20120330-12:14:09|370=20120330-12:14:09.816|571=00008661533TRLO1-1-1-0|150=H|10=113|

- New 'Cancel Trade Report' Acknowledgement

8=FIX.4.2|9=106|35=AR|34=2486|49=LSETR|52=20120330-12:14:10.379|56=LSEHub|128=BROKERX|150=H|571=00008661533TRLO1-1-1-0|939=0|10=103|

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- Trade Report 'Late Correction' Message

8=FIX.4.2|9=175|35=AE|49=BROKERX|56=LSEHub|34=17|52=20120202-16:04:44|128=LSETR|918=EUR|31=89.0000000|64=20120202|828=1007|60=20120202-16:04:44|32=6|22=4|571=1698|570=N|150=0|48=AT0000785555|10=087|

- Trade Report 'Late Correction' Acknowledgement

8=FIX.4.2|9=111|35=AR|49=LSEHub|56=BROKERX|115=LSETR|34=16|52=20120202-16:04:44|370=20120202-16:04:45.257|571=1698|150=0|939=0|10=026|



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