HF MEFFGate

Simulation Environment and MiFID II/MiFIR
Conformance Testing

Guide for Third Party Trading Applications

MEFF

Contents

1 Introduction

1.1 Scope of Manual

This document is intended for Members of the exchange and Independent Service Vendors, ISVs. It outlines the testing which must be performed to ensure that their applications function correctly with the trading HF MEFFGate element of the MEFF SMART that is MiFID II/MiFIR compliant.

This document outlines a series of tests that must be performed, depending on the use which the Member or ISV will make of the functionality offered by the system. Some tests have been marked as mandatory, as they are considered necessary to guarantee the correct performance of the system, in line with MiFID II/MiFIR, as outlined in Article 9 of Regulatory Technical Standards 7, (Article 48(6) of Directive 2014/65/EU).

Any application that has not successfully completed the conformance testing not be permitted to connect to the trading HF MEFFGate in production.

This document provides the technical details, as well as organisational and functional information on the simulation environment.

Information relating to simulation environment connectivity is introduced; detailed information may be obtained as described in the corresponding sections.

1.2 Structure of Manual

The manual has three chapters.

The first chapter is an introduction explaining the structure of the document.

The second chapter provides a general overview of the MEFF simulation environment and details of access through the FIX interface of the HF MEFFGate server, followed by organisational, functional and technical information.

The third chapter outlines the compulsory conformance testing for applications to be certified as MiFID II/MiFIR compliant.

2 Simulation Environment

2.1 General Overview

MEFF has made available, to those Members and ISVs who request access, a simulation environment that has an effective separation from the production environment, in order to facilitate development and testing of proprietary applications.

In accordance with the MiFID II/MiFIR requirement, the simulation environment-

- *is accessible on conditions equivalent to those applicable to the trading venue's other testing services*

- *provides a list of financial instruments which can be tested and which are representative of every class of instruments available in the production environment;*

- *is available during general market hours (as established in section 2.3.2 of this document)*

- *is supported by staff with sufficient knowledge.*

Members access the simulation environment through the secondary communications line.

Members that connect to MEFF using the colocation site, entities which are in the process of becoming members and ISVs access the simulation environment without the installation of additional hardware, using MEFF hosted MEFFGates and a VPN connection.
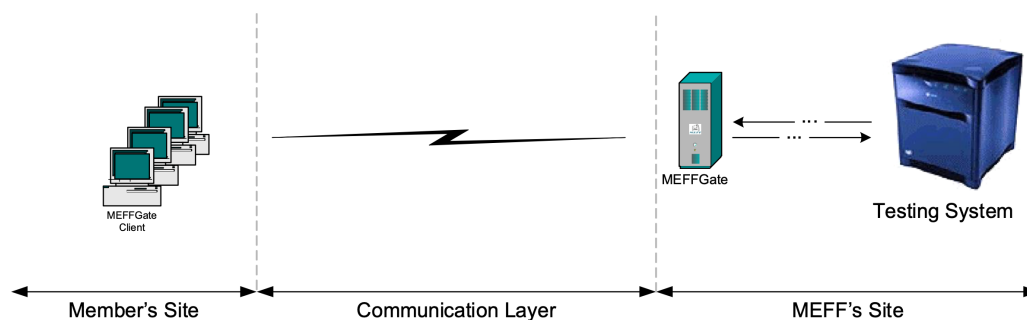
Access to the environment is through a HF MEFFGate in the installations of MEFF

The simulation environment will ordinarily be running the same version as that in the production environment.

In addition to the current production versions of the HF MEFFGate, the simulation environment may also make available those future versions that are in the pre-implementation phase.

2.2 Details to be Considered When Developing Applications That Connect to the HF MEFFGate

2.2.1 Heartbeats

The HF MEFFGate only sends heartbeats, message type "0", in response to a TestRequest, message type "1". In order for the client application to receive heartbeats it must send a Test Request, which will in turn receive an immediate response from HF MEFFGate. As outlined in the specifications, unless the HF MEFFGate receives a heartbeat at regular intervals the HF MEFFGate will disconnect the client application.

2.2.2 Losing Connection to Central Systems

When the HF MEFFGate detects disconnection from the MEFF Central System it will send "Network Counterparty System Status" messages to notify the client application.

In that scenario it is necessary to wait a reasonable period of time, approximately five seconds, to allow HF MEFFGate to establish its alternative connection. During this time the client application should not send any message to HF MEFFGate as any message whose destination is the central host will not be replied to, note however the TestRequest messages will be replied to.

Once this period has passed and the connection has not been re-established, the client application should attempt to establish connectivity with the alternative HF MEFFGate.

2.2.3 Losing Connection to HF MEFFGate

If for any reason the client application disconnects from the HF MEFFGate or no response is received to a TestRequest, it will be necessary to start a new session with the secondary HF MEFFGate. The client application should indicate from which message it wishes to receive information, using ApplID, tag 1180 and ApplSeqNum, tag 1181. Note that Execution Reports will only be resent from the point indicated using ApplID and ApplSeqNum.

In the case of a voluntary disconnection from the HF MEFFGate, a FIX session can be started with the same HF MEFFGate.

2.2.4 Automatic Cancellation of Orders

When entering an order it is possible to select if the order will remain in the market in the case of disconnection, using the ExecInst, tag 18.

When the Central System detects the disconnection of the HF MEFFGate client and if the disconnection is deemed persistent, orders flagged for cancellation on disconnection are

cancelled. Note that pending quotes, message type "S", are automatically cancelled in the case of disconnection.

2.2.5 Subscriptions to FIX

Subscriptions are cancelled when a session is disconnected. If the client application reconnects, subscriptions must be resent.

2.2.6 Receiving of Activity from Market Supervision

The client applications that are connected to the HF MEFFGate FIX Server are associated with a Trader code. These client applications must be able to process messages that could be received as a consequence of the actions taken on behalf of the associated Trader by third parties. These actions could be performed by a Supervision Terminal of the Member or by the MEFF Market Services Department.

2.2.7 Maximum Number of Messages per Second

Each HF MEFFGate client is configured with a limit to the number of messages per second that can be sent to HF MEFFGate. This limit is informed in MaxMsgPerSecond, tag 21504 of the Logon, message type "A", sent by the HF MEFFGate.

Once the limit to maximum number of messages per second is reached, messages are stored in a buffer and once the buffer is full, messages are rejected. The buffer is 50% of the limit +1.

Messages that exceed this limit are rejected with a Reject, message type "3".

It is strongly recommended that an application should never send messages at a throughput rate higher than the configured limit.

2.3 Organizational Overview

2.3.1 Calendar

The calendar for the MEFF simulation test environment is ordinarily the same as that for the production environment; in the event that the calendar may differ to that in production, it will be communicated accordingly. A calendar is published, as a Technology Services Note, informing of the calendar and the development support available.

2.3.2   Operating Hours

There are two different timetables applicable to the test environment:

- **Connection timetable**. Determines the period during which a client application can establish a connection with the HF MEFFGate server and request static data.

- **Trading hours**. Establishes the limits of the period when orders are accepted in the test environment.

Note that after the trading session ends, no new session can be established however active session remain connected until disconnection by the application or communications are ended by the HF MEFFGate.

The table below indicates the start and end times in each case. These timetables are approximate and are subject to change.

TIMETABLE	START*	END*
Connection	7:00	22:00
Trading	8:30	17:30

(*) Times are CET, which is the local market time; equivalent to UTC +0100 in winter and UTC + 0200 in summer.

2.3.3   Scheduled Events in the Simulation Environment

The following table lists events that are scheduled in the equity derivatives simulation environment. These events are subject to change.

EVENT	TIME
Opening Auction for Bond Futures and Index Futures.	8:30
Opening Auction for Single Stock Products and Index Options.	8:33
End of Auction, Start of Continuous Trading on Bond Futures and Index Futures.	8:35
End of Auction, Start of Continuous Trading on Single Stock Products and Index Options.	8:45
End of Continuous Trading on Bond Futures, Single Stock Products and Index Options.	17:00
End of Continuous Trading on Index Futures.	17:31

(*) Times are CET, which is the local market time; equivalent to UTC +0100 in winter and UTC + 0200 in summer.

2.3.4 Queries and Notification of Incidents

Any query or incident related to the operation of the MEFF simulation environment should be made to the Technology Services Department of MEFF, by e-mail to techservices@grupobme.es.

2.4 Functional Overview

2.4.1 Markets Available

The HF MEFFGate FIX interface in the test environment allows access to the various MEFF markets. The market codes can be found in table 17 of the document "Codification Tables – Predefined Values"

2.4.2 Contracts

The simulation environment will ordinarily have the same profile of contracts as the MEFF production environment. Contract definitions and characteristics are outlined in the Exchange circular, "MEFF listed contracts. Codes and Technical Specifications". Contracts that are currently available in the equity derivatives simulation environment are summarized in the following table-

UNDERLYING	PRODUCT TYPE	DELIVERY	TIMESPREADS	STRATEGIES	FLEXIBLE
IBEX-35 constituent stocks	Futures	Physical and Cash	Yes	No	Yes
IBEX-35 constituent stocks	Options	Physical and Cash	No	Yes	Yes
IBEX-35 constituent stocks Dividends	Futures	Cash	No	No	No
IBEX-35 index	Futures	Cash	Yes	No	Yes
IBEX-35 sectorial indices	Futures	Cash	Yes	No	No
IBEX-35 index	Options	Cash	No	Yes	Yes
Mini IBEX-35 index	Futures	Cash	Yes	No	No
IBEX-35 Impacto Dividend	Futures	Cash	Yes	No	No
Bono 10	Futures	Physical	Yes	No	No

2.4.3 HF MEFFGate User Codes

A user code is required by Members and ISVs to connect to the simulation environment, this code is composed of member and operator codes.

Members have a member code for the production environment composed of the letter "A" followed by three digits, e.g. "A123". In the simulation environment the "A" is changed to a "T", e.g. "T123". MEFF will assign a fictitious member code to entities which are in the process of becoming members and ISVs.

MEFF will assign two specific trader codes for accessing the simulation environment these codes are

351 and **352**, further codes can be requested.

Connections to the Market Data API are made available on request.

In the event of there being more than one simulation environment available, connection parameters will be communicated as necessary.

2.4.4 Privileged Trader (Superuser)

The SMART system allows for traders to be defined as privileged traders. Privileged Traders receive Execution Reports for the trades of each trader within the entity.

It is possible for the Market Services Department to prohibit this type of trader to send orders to the Exchange, this "superuser – non trader" FIX session can be used for trading API dropcopy applications.

Entities which wish to configure a trader (HF MEFFGate client) as a privileged trader should contact the Technology Services Department.

2.4.5 MEFFStation Terminals

Entities can request MEFFStation trading, clearing or supervisor terminals connected to the simulation environment.

The software, which runs in a Windows environment, is installed on the entities own hardware which connects to the MEFFAccess servers.

To request one of these terminals please contact the Technology Services Department.

2.4.6 Queries During Testing

Any query related to the simulation environment or the HF MEFFGate FIX interface should be addressed to the Technology Services Department.

2.4.7 Values and Prices

The initial data available in the simulation environment will ordinarily be similar to that in the MEFF production environment.

2.4.8 Planning of Special Procedures

Any action that it is felt necessary to perform should be requested by sending an email to the MEFF Technology Services department at techservices@grupobme.es.

2.5   Technical Overview

2.5.1   Connection System

Access to the HF MEFFGate simulation environment is via the secondary infrastructure for those members with MEFF infrastructure. For those entities that do not have MEFF infrastructure installed, connectivity is via a VPN (Virtual Private Network). The most relevant elements of each of these systems are described below.

2.5.2   Connection data

2.5.2.1 Identification

The logon message will have the fields:

TAG	NAME	DESCRIPTION	EXAMPLE
49	SenderCompID	Member code	T123
50	SenderSubID	Trader code	351
553	Username	Username (Member code + Trader Code)	T123351
554	Password*		test.meff

(*) Passwords can be changed via the interface

2.5.2.2 TCP/IP Configuration

To access the HF MEFFGate server using the FIX interface, which in turn permits access to the test environment, a TCP/IP connection should be established to the following services:

SIMULATION MARKET	MARKET CODE (TARGETCOMP ID)	TRADING PORT	MARKET DATA PORT
Financial Derivatives	M3	8501	8301
Energy Derivatives	M7	8571	8371
xRolling FX	MD	8555	8355

Available HF MEFFGate servers:

For those members with MEFF infrastructure the relevant IP address will be communicated. The IP addresses of the HF MEFFGates installed at the MEFF site are:

DEVICE	PRIVATE IP ADDRESS	PUBLIC IP ADDRESS
HF MEFFGate 1	10.166.34.85	193.110.154.217
HF MEFFGate 2	10.181.34.85	193.110.154.206

2.6   Contacts

All queries relating to the MEFF simulation environment should be addressed to the MEFF Technology Services Department at techservices@grupobme.es.

3   Conformance Testing

Pursuant to Article 9 of Regulatory Technical Standards 7, (Article 48(6) of Directive 2014/65/EU), here follows the testing necessary to comply with said regulations and to ensure that the basic functioning of the member's trading system, algorithm and strategy complies with MEFF's conditions.

Any application that does not successfully complete the testing will not be permitted to connect to the production trading system.

MEFF requires that members and ISVs undertake conformance testing prior to the deployment or a substantial update of-

- MEFF's Trading System (SMART)

- The member's trading system, trading algorithm or trading strategy.

3.1   Request for Conformance Testing

A request to submit an application for conformance testing must be made to the Technology Services Department at techservices@grupobme.es, at least 15 days prior to the intended commencement of the testing.

3.2   Communication of Completion of Conformance Testing

Once an application has successfully completed the conformance testing, a report will be sent to the member or ISV informing of the results of the testing and the functionalities that the application may use in production.

If the conformance testing is performed over various sessions, a preliminary report will be sent at the end of each session.

3.3   Trading Application Identification Code (TAIC)

All trading applications that have performed successfully the conformance testing will be assigned a unique Trading Application Identification Code (TAIC). The TAIC must be sent in tag 58 of the logon message, message type "A" for each new T5.x FIX session.

3.4   Testing Blocks

The following are the different testing blocks. The member, or ISV, will decide which blocks to present for conformance testing in line with the functionalities which the client application will use.

ZC – Communications **Mandatory**	Connection and reconnection to a new FIX session. Reconnection from an intermediate point. Detection of disconnection of a network node. Detection of Change in session status.
ZI – Instrument Definition **Mandatory**	Identify contracts listed by the exchange. Identify changes in contract status.
Z1 – Privileged Trader	Monitor order status and executions within the entity.
Z2 – Orders "on behalf"	Monitor status of own orders sent from a supervisor or market supervision terminal.
ZO – Orders	Entry of limit orders. Modification of orders. Cancellation of single orders. Mass cancellation of orders. Order modification. Monitoring of order status.
ZQ – Quotes	Registering of quote parameters. Entry of quote. Entry of mass quote. Modification of quote. Cancellation of quote. Monitoring of quote status.
ZB – Block Trades	Notification of block trades. Acceptance of block trades. Identify flexible contracts.
ZR – Request for Quotes	Notification of Request for Quote. Communication of Request for Quote. Response to Request for Quote. Modification of Request for Quote.

ZF – Filters	Management of Filters
	  - Price
	
	  - Volume

ZP – Market Protection	Management of Market Protection
	  - Price
	
	  - Volume
	
	  - Delta Protection

ZS – Strategies	Creation of Strategies. Identify Strategies.
ZX – Indication of Interest	Indication of Interest sent to the market

3.5 Test Cases

3.5.1 ZC - Communications

All applications must perform at least those tests that are marked as "mandatory".

Test Class: Communications	Test Case: ZCNX01		Test Exit Criteria: Mandatory
Description: Connect to a new FIX Session.			
Comments:			
Test Entry Criteria:			
Steps	**Expected Action & Messages Sent**		**Expected Result & Messages Received**
1	Connect to a new FIX session. *Logon (Message Type "A").*		Logon accepted and FIX session established. *Logon (Message Type "A").*

Test Class: Communications	Test Case: ZCNX02		Test Exit Criteria: Mandatory
Description: End a FIX Session.			
Comments:			
Test Entry Criteria: Successfully completed test case ZCNX01.			
Steps	**Expected Action & Messages Sent**		**Expected Result & Messages Received**
1	End a FIX session. *Logout (Message Type "5").*		Logout accepted and FIX session ended *Logout (Message Type "5").*

Test Class: Communications	Test Case: ZCNX03		Test Exit Criteria: Not Mandatory
Description: Connect to a FIX Session receiving messages from an intermediary point.			
Comments:			
Test Entry Criteria: Successfully completed test case ZCNX01 and ZCNX02.			
Steps	**Expected Action & Messages Sent**		**Expected Result & Messages Received**
1	Connect to a new FIX session. *Logon (Message Type "A") using tags 1180 and 1181.*		Logon accepted and FIX session established. *Logon (Message Type "A") with tags 1180 and 1181 as per logon and all subsequent messages.*

Test Class:	Test Case:		Test Exit Criteria:
Communications	ZCNX04		Mandatory

Description: Detection of disconnection of a network node.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	MEFF simulates a network outage.	
2		Network outage informed. *Network Counterparty Status Response (Message Type "BD") with tag 928 =2.*
3	MEFF re-establishes network connectivity.	
4		End of network outage informed. *Network Counterparty Status Response (Message Type "BD") with tag 928 =1.*

Test Class:	Test Case:		Test Exit Criteria:
Communications	ZCNX05		Mandatory

Description: Change of connection to an alternative HF MEFFGate
(for those entities that have a second simulation HF MEFFGate accessible).

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01 and ZCNX02.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Connect to a new FIX session. *Logon (Message Type "A").*	Logon accepted and FIX session established. *Logon (Message Type "A").*
2	End a FIX session. *Logout (Message Type "5").*	Logout accepted and FIX session ended. *Logout (Message Type "5").*
3	Connect to a new FIX session at a different IP address. *Logon (Message Type "A").*	Logon accepted and FIX session established. *Logon (Message Type "A").*

Test Class:	Test Case:	Test Exit Criteria:
Communications	ZCNX06	Mandatory*

Description: Identify change in session status.

Comments: MEFF will simulate disorderly trading conditions.

Test Entry Criteria: Successfully completed test case ZCNX01
To receive the information relevant to this test via the trading API, implied subscriptions must be used in the logon message, as outlined in section 4.7 of the T5.x specifications.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	MEFF simulates change in session status.	
2		*Trading Session Status (Message Type "h") received with the Session Status informed in the combination of tags 340, TradSesStatus and 625, TradingSessionSubID.*

* Applications that do not receive this information via the HF MEFFGate Trading API must be able to identify the changes performed in this test using other sources

3.5.2 ZI - Instrument Definition

All applications must perform at least those tests that are marked as "mandatory".

Applications that will present this block for testing should also consult test ZBLK06 in section 3.2.5 of this document.

Test Class:	Test Case:	Test Exit Criteria:
Instrument Definition	ZIDF01	Mandatory*

Description: Request and Process current instrument list.

Comments: *The client application may subscribe to the entire book.*

Test Entry Criteria:

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Request the definition and status of all contracts, with updates in the logon message.	Receive the definition and status of each contract per selection criteria. *Security List Request (Message Type "y"). Security Status (Message Type "f").*

Test Class:	Test Case:	Test Exit Criteria:
Instrument Definition	ZIDF02	Mandatory*

Description: Identify change in contract status.

Comments: MEFF will simulate disorderly trading conditions.

Test Entry Criteria: Successfully completed test case ZIDF01
To receive the information relevant to this test via the trading API, implied subscriptions must be used in the logon message, as outlined in section 4.7 of the T5.0 specifications.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	MEFF changes the status of a contract or a group of contracts.	
2		Change of contract status informed. *Security Status (Message Type "f") with updated value in tag 326 and including tag 327.*

* Applications that do not receive this information via the HF MEFFGate Trading API must be able to identify the changes performed in this test using other sources

3.5.3   ZO - Order Management

All applications that will send orders to the market must perform at least those tests that are marked as "mandatory".

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD01	Mandatory

Description: Entry of orders.

Comments:

- The client application may send various types of order as per the requirements of the client application.

- Usage of the Parties Block and tag 29, LastCapacity, will be monitored as part of the test to ensure that they are used correctly in accordance with the member profile and the Order Record Keeping Obligations as required by the regulations.

- Usage of tag 1724, OrderOrigination, will be monitored as part of the test to ensure that it is used correctly in accordance with the member profile.

- Usage of the Liquidity Provision Flag (OrderAttributeType, tag 2594=2 and OrderAttributeValue, tag 2595=Y) will be monitored as part of the test to ensure that it is used correctly in accordance with the member profile.

- Usage of the tag 2362, SelfMatchPreventionID, will be monitored as part of the test.

Test Entry Criteria: Successfully completed test case ZCNX01

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of orders with varying characteristics. *New Order – Single (Message Type "D").*	Confirmation of each new order included on the order book. *Execution Report (Message Type "8") with tag 150=0.*

Test Class: Order Management	**Test Case**: ZORD02	**Test Exit Criteria**: Mandatory

Description: Cancellation of orders.

Comments:

Test Entry Criteria: Successfully completed test case ZORD01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Cancellation of order. *Order Cancel Request (Message Type "F").*	Confirmation of order cancellation. *Execution Report (Message Type "8") with tag 150=4.*

Test Class: Order Management	**Test Case**: ZORD09	**Test Exit Criteria**: Mandatory

Description: Modification of orders.

Comments:

Test Entry Criteria: Successfully completed test case ZORD01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Modification. *Order Modification Request (Msg Type "G").*	Confirmation of order modification. *Execution Report (Message Type "8") with tag 150=5.*

Test Class: Order Management	**Test Case**: ZORD03	**Test Exit Criteria**: Not Mandatory

Description: Mass cancellation of orders.

Comments: The client application requests the cancellation of multiple orders as per the selection criteria used in the Order Mass Cancel Request Message.

Test Entry Criteria: Successfully completed test case ZORD01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Cancellation of various orders. *Order Mass Cancel Request (Message Type "q").*	Confirmation of mass order cancellation. *Order Mass Cancel Report (Message Type "r") with tag 531=7. Execution Report (Message Type "8") with tag 150=4 for each order which matched the selection criteria.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD04	Mandatory

Description: Identify trades.

Comments:

Test Entry Criteria: Successfully completed test case ZORD01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Orders previously entered are traded, fully and partially.	
2		Confirmation of each trade. *Execution Report (Message Type "8") with tag 150=F and pending volume in tag 151.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD05	Not Mandatory

Description: Identify status of orders before and after disconnection.

Comments:

Test Entry Criteria: Successfully completed test case ZORD01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	The client application enters various orders without cancellation on disconnection activated.	
2	The client application disconnects.	
3	Some of the orders are crossed or partially crossed in the market .	
4	The client application reconnects.	
5		Confirmation of each trade. *Execution Report (Message Type "8") with tag 150=F.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD06	Not Mandatory

Description: Identify orders entered by a superuser terminal or by Market Supervision.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	MEFF enters orders on behalf of the member.	
2		**Confirmation of each new order included on the order book.** Execution Report (Message Type "8") with tag 150=0.

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD07	Not Mandatory

Description: Identify orders modified or cancelled by a superuser terminal or by Market Supervision.

Comments: If the client application will support quotes, quotes will also be included in this test.

Test Entry Criteria: Successfully completed test case ZORD01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of orders with varying characteristics. New Order – Single (Message Type "D").	Confirmation of each new order included on the order book. Execution Report (Message Type "8") with tag 150=0.
2	MEFF modifies or cancels orders on behalf of the member.	
3		Confirmation of each modification or cancellation of an order included on the order book. *Execution Report (Message Type "8") with tag 150=4 or 150=5, as appropriate.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD08	Not Mandatory

Description: Identify orders and executions from within the same entity (Privileged Trader).

Comments: *This test need only be performed by those entities that support Privileged Traders. If the client application will support quotes, quotes will also be included in this test.*

Test Entry Criteria: Successfully completed test case ZCNX01

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Other traders within the entity enter orders.	
2		Confirmation of each new order included on the order book. *Execution Report (Message Type "8") with tag 150=0, with the originating trader indentified in the Parties' Block.*
3	Some of the orders are crossed of partially crossed in the market.	
4		Confirmation of each trade. *Execution Report (Message Type "8") with tag 150=F, with the originating trader indentified in the Parties' Block.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZORD10	Not Mandatory

Description: Identify trades modified and cancelled by the Market Supervision.

Comments:

Test Entry Criteria: Successfully completed test case ZORD04.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	MEFF modifies and cancels trades executed in the markets.	
2		Confirmation of each trade modified. *Execution Report (Message Type "8") with tag 150=G.*

3.5.4 ZQ - Quote Management

All applications that will send quotes to the market must perform at least those tests that are marked as "mandatory".

Applications that will present this block for testing should also consult tests **ZORD07** and **ZORD10** in section 3.2.3 of this document.

Test Class:	Test Case:	Test Exit Criteria:
Quote Management	ZQTE01	Mandatory

Description: Entry of Quote Parameters.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.
Usage of the Parties Block and tag 29, LastCapacity, will be monitored as part of the test to ensure that they are used correctly in accordance with the member profile and the Order Record Keeping Obligations as required by the regulations.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of quote parameters. *Registration (Message Type "o").*	Acceptance of quote parameters. *Registration Instructions Response (Message Type "p") with tag 506=A.*

Test Class:	Test Case:	Test Exit Criteria:
Quote Management	ZQTE02	Mandatory

Description: Entry of quotes.

Comments:

Test Entry Criteria: Successfully completed test case ZQTE01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of quotes. *Quote (Message Type "S").*	Confirmation of each new quote included on the order book. *Quote Status Report (Message Type "AI") with tag 297=0.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZQTE03	Mandatory

Description: Modification of quotes.

Comments:

Test Entry Criteria: Successfully completed test case ZQTE02.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Enter quote on the order book.	
2	Modification of quote. *Quote (Message Type "S").*	Confirmation of quote modification. *Quote Status Report (Message Type "AI") with tag 297=0.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZQTE04	Mandatory

Description: Cancellation of individual quote.

Comments:

Test Entry Criteria: Successfully completed test case ZQTE02.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Enter quote on the order book.	
2	Modification of quote. *Quote (Message Type "S") with tags 132, 133, 134 & 135 =0.*	Confirmation of quote modification. *Quote Status Report (Message Type "AI") with tag 297=4.*

Test Class:	Test Case:	Test Exit Criteria:
Order Management	ZQTE05	Not mandatory

Description: Mass Cancellation of quotes.

Comments:

Test Entry Criteria: Successfully completed test case ZQTE02.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Cancellation of quote. *Quote Cancel (Message Type "Z").*	Confirmation of each quote cancellation. *Quote Status Report (Message Type "AI") with tag 39=4.*

Test Class:	Test Case:	Test Exit Criteria:	
Order Management	ZQTE06	Mandatory	

Description: Identify trades.

Comments:

Test Entry Criteria: Successfully completed test case ZQTE01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Quotes previously entered are traded, fully and partially.	
2		Confirmation of each trade. *Execution Report (Message Type "8") with tag 150=F and pending volume in tag 151.*

3.5.5   ZB - Block Trade Management

All applications that will send block trades to the market and accept block trades from the market must perform at least those tests that are marked as "mandatory".

The tests will be performed for standard listed contracts, flexible contracts and strategies.

Test Class:	Test Case:	Test Exit Criteria:	
Block Trade Management	ZBLK01	Mandatory	

Description: Notification of Block Trade pending acceptance.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Market Supervision enters a block trade in which the entity using the client application is a least one of the parties to the trade.	
2		Receive notification of Block Trade pending acceptance. *Trade Capture Report (Message type "AE") with tag 574 containing the appropriate value, as listed in table 27 of the Codification Tables.*

Test Class: Block Trade Management	Test Case: ZBLK02	Test Exit Criteria: Mandatory

Description: Acceptance or Rejection of Block Trade by counterparty.

Comments:

Test Entry Criteria: Successfully completed test case ZBLK01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1		Receive notification of Block Trade pending acceptance. *Trade Capture Report (Message type "AE") with tag 574 containing the appropriate value, as listed in table 27 of the Codification Tables.*
2	Acceptance or Rejection of the Block Trade. *Trade Capture Report (Message type "AE") with tag 856=2 or 3, as appropriate.*	Confirmation of Acceptance or Rejection of the Block Trade. *Trade Capture Report (Message type "AE") with tag 574 containing the appropriate value, as listed in table 27 of the Codification Tables.*

Test Class: Block Trade Management	Test Case: ZBLK03	Test Exit Criteria: Mandatory

Description: Acceptance and Registration or Rejection of Block Trade by Market Services.

Comments:

Test Entry Criteria: Successfully completed test case ZBLK02.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	*Block Trades pending Market Supervision are accepted or rejected by Market Supervision.*	
2		Confirmation of Acceptance and Registration or Rejection of the Block Trade. *Trade Capture Report (Message type "AE") with tag 574 containing the appropriate value, as listed in table 27 of the Codification Tables.*

Test Class:	Test Case:	Test Exit Criteria:
Block Trade Management	ZBLK04	Mandatory

Description: Block Trade informed to the market and its subsequent acceptance, rejection or registration.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Block Trade communicated to the market. *Trade Capture Report (Message type "AE") with tag 856=0.*	Notification of Block Trade communicated. *Trade Capture Report (Message type "AE") with tag 574 containing the appropriate value, as listed in table 27 of the Codification Tables.*

Test Class:	Test Case:	Test Exit Criteria:
Block Trade Management	ZBLK05	Not Mandatory

Description: Block Trade on Flexible Contract informed to the market and its subsequent acceptance, rejection or registration and its subsequent acceptance, rejection or registration.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Block Trade communicated to the market. *Trade Capture Report (Message type "AE") with tag 856=0.*	Notification of Block Trade communicated. *Trade Capture Report (Message type "AE") with tag 574 containing the appropriate value, as listed in table 27 of the Codification Tables.*

Test Class:	Test Case:	Test Exit Criteria:
Strategies	NBLK06	Not Mandatory

Description: Identify New Flexible Contract.

Comments:

Test Entry Criteria: Successfully completed test case ZIDF01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1		Receive an update to the Security List due to the creation of a new Strategy Contract. *Security List Update Report (Msg Type = BK).*

3.5.6 ZR - Request for Quotes

All applications that will send Requests for Quotes to the market and accept Requests for Quotes from the market must perform at least those tests that are marked as "mandatory".

The tests will be performed for standard listed contracts, flexible contracts and strategies.

Test Class:	Test Case:		Test Exit Criteria:
Request for Quote	ZRFQ01		Mandatory
Description: Notification of Request for Quote.			
Comments:			
Test Entry Criteria: Successfully completed test case ZCNX01.			
Steps	**Expected Action & Messages Sent**		**Expected Result & Messages Received**
1	Market Supervision enters a Request for Quote in which the entity using the client application is one of addressees.		
2			Receive notification of Request for Quote. *RFQ Status (Message type "AJ") with tag 574=M.*

Test Class:	Test Case:		Test Exit Criteria:
Request for Quote	ZRFQ02		Mandatory
Description: Cancellation of Request for Quote.			
Comments:			
Test Entry Criteria: Successfully completed test case ZRFQ01.			
Steps	**Expected Action & Messages Sent**		**Expected Result & Messages Received**
1	Market Supervision cancels a Request for Quote in which the entity using the client application is one of addressees.		
2			Receive notification of Request for Quote RFQ Status (Message type "AJ") with tag 574=Q.

Test Class:	Test Case:	Test Exit Criteria:
Request for Quote	ZRFQ03	Mandatory

Description: Response to Request for Quote.

Comments:

Test Entry Criteria: Successfully completed test case ZRFQ01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1		Receive notification of Request for Quote *RFQ Status (Message type "AJ") with tag 574=M.*
2	Respond to Request for Quote *RFQ Status (Message type "AJ")*	Confirmation of Response to Request for Quote *RFQ Status (Message type "AJ") with tag 574=5, 6, 7, 8, 9, A, B or C.*

Test Class:	Test Case:	Test Exit Criteria:
Request for Quote	ZRFQ04	Not Mandatory

Description: Request for Quote communicated to the market.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Received Result & Messages
1	Request for Quote communicated to the market *Quote Request (Message type "R").*	Receive notification of Request for Quote *RFQ Status (Message type "AJ") with tag 574=M.*

Test Class:	Test Case:	Test Exit Criteria:
Request for Quote	ZRFQ05	Not Mandatory

Description: Modification of Request for Quote communicated to the market.

Comments:

Test Entry Criteria: Successfully completed test case ZRFQ04.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Modification of previous Request for Quote communicated to the market. *RFQ Status (Message type "AJ") with tag 694=2.*	Receive notification of modification of Request for Quote. *RFQ Status (Message type "AJ") with tag 574=M and tag 234=RECP.*

3.5.7 ZP & ZF - Market Protection and Filters

The tests listed in this section are marked as *not mandatory*. The individual tests should be performed by those applications that wish to use the functionality described. Note that when a new filter is defined by the client application it must be more restrictive than that set by the market supervisor.

Test Class:	Test Case:	Test Exit Criteria:
Market Protection and Filters	ZMPF01	Not Mandatory

Description: Delta Protection and account configuration for quotes.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of parameters. *Registration (Message Type "o") PartySubID [523] = DELTA.*	Acceptance of quote parameters. *Registration Instructions Response (Message Type "p") with tag 506=A.*

Test Class:	Test Case:	Test Exit Criteria:
Market Protection and Filters	ZMPF02	Not Mandatory

Description: Kill Button.

Comments:
In this test a GCM can *kill* an NCM or an individual trader or an NCM can *kill* an individual trader. Members that provide DEA must use this functionality, either via the FIX API or using the MEFFStation.

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of parameters. *Registration (Message Type "o") PartySubID [523] = KILL.*	Acceptance of kill button. *Registration Instructions Response (Message Type "p") with tag 506=A.*

Test Class:	Test Case:	Test Exit Criteria:
Market Protection and Filters	ZMPF03	Not Mandatory

Description: Management of Price Filters.

Comments:

In this test an NCM can define a maximum price filter, in an specific underlying and family of products, for each of its traders.

Members that provide DEA must use this functionality, either via the FIX API or using the MEFFStation.

Test Entry Criteria: Successfully completed test case ZCNX01

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of parameters. *Registration (Message Type "o") PartySubID [523] = PRICE.*	Acceptance of market protection filters. *Registration Instructions Response (Message Type "p") with tag 506=A.*

Test Class:	Test Case:	Test Exit Criteria:
Market Protection and Filters	ZMPF04	Not Mandatory

Description: Management of Volume Filters.

Comments:

In this test a GCM can define a maximum order size, in a family of products, for an NCM that it clears or an NCM define a maximum order size, in a family of products for an individual trader.

Members that provide DEA must use this functionality, either via the FIX API or using the MEFFStation.

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of parameters. *Registration (Message Type "o") PartySubID [523] = VOL.*	Acceptance of volume filters. *Registration Instructions Response (Message Type "p") with tag 506=A.*

Test Class:	Test Case:	Test Exit Criteria:
Market Protection and Filters	ZMPF05	Not Mandatory

Description: Management for HFT – IFTL

Comments: In this test a GCM can define the maximum intraday position limit in a family of future products for an individual account.

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Entry of parameters. *Registration (Message Type "o") PartySubID [523] = IFTL.*	Acceptance of market protection filters. *Registration Instructions Response (Message Type "p") with tag 506=A.*

3.5.8 ZS - Strategies

The tests listed in this section are marked as *not mandatory*. The individual tests should be performed by those applications that wish to use the functionality described.

Test Class:	Test Case:	Test Exit Criteria:
Strategies	ZHST01	Not Mandatory

Description: Creation of Strategy without coverage.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Creation of Strategy. *Security Definition Request (Msg Type = c).*	Acceptance of Strategy Request. *Security Definition (Msg Type = d) with tag 323=5.*

Test Class:	Test Case:	Test Exit Criteria:
Strategies	ZHST02	Not Mandatory

Description: Creation of Strategy with coverage.

Comments:

Test Entry Criteria: Successfully completed test case ZCNX01.

Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Creation of Strategy. *Security Definition Request (Msg Type = c).*	Acceptance of Strategy Request. *Security Definition (Msg Type = d) with tag 323=5.*

Test Class:	Test Case:	Test Exit Criteria:
Strategies	ZHST03	Not Mandatory

Description: Identify New Strategy.

Comments:

Test Entry Criteria: Successfully completed test case ZIDF01.

Steps	Expected Action &	Expected Result & Messages Received

	Messages Sent
1	Receive an update to the Security List due to the creation of a new Strategy Contract. *Security List Update Report (Msg Type = BK).*

3.5.9 ZX – Indication of Interest

The tests listed in this section are marked as *not mandatory*. The individual tests should be performed by those applications that wish to use the functionality described.

Test Class: Indication of Interest	**Test Case**: ZIOI01	**Test Exit Criteria**: Not Mandatory
Description: Send an Indication of Interest to the market.		
Comments: The test can be performed for options or strategies on options.		
Test Entry Criteria: Successfully completed test case ZCNX01.		
Steps	**Expected Action & Messages Sent**	**Expected Received Result & Messages**
1	Indication of Interest sent to the HF MEFFGate. Indication of Interest (Msg Type = 6).	Acceptance of Indication of Interest. *Indication of Interest (Msg Type = 6).*

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