Simulation Environment
and
MiFID II/MiFIR Conformance Testing

Guide for Third Party Trading Applications

MEFF

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Content

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 API elements 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 Commission Delegated Regulation 2017/584, (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 API 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 four 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, followed by organisational, functional and technical information.

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

The fourth chapter outlines the compulsory conformance testing for Binary API 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.

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.

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*
FIX Connection	7:00	16:35
Binary Connection	22:00 (D-1)	16:35
Trading	8:30	16:31

(*) 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	16:00
End of Continuous Trading on Index Futures	16:31

(*) 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
Micro IBEX-35 index	Futures	Cash	Yes	No	No
IBEX-35 Impacto Dividend	Futures	Cash	Yes	No	No
Bono 10	Futures	Physical	Yes	No	No
xRolling FX	Futures	Cash	No	No	No

Underlying	Product Type	Delivery	Timespreads	Strategies	Flexible
Fictitious Stocks *	xRolling Futures	Physical and Cash	No	No	No
Fictitious Stocks *	Futures	Physical and Cash	Yes	No	Yes
Fictitious Stocks *	Options	Physical and Cash	No	Yes	Yes

(*) The underlying stocks have the format FOR0X

2.4.3 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.

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.

2.4.4 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.

2.4.5 Queries during testing

Any query related to the simulation environment or a MEFF Trading interface should be addressed to the Technology Services Department.

2.4.6 Values and Prices

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

2.4.7 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 MEFF 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 of a FIX session

The logon message will have the fields, in the following tables

(as an example values for the user T123351 are shown):

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 simulation 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)	FIX Trading Port	FIX Market Data Port	Binary Trading Port
Financial Derivatives	*M3*	*8501*	*8301*	*8101*
Energy Derivatives	*M7*	*8571*	*8371*	*n/a*
xRolling FX	*MD*	*8555*	*8355*	*n/a*

Available servers:

For those members with MEFF infrastructure the relevant IP address will be communicated.

The IP addresses of the servers 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
Binary Trading Server	10.166.34.56	n/a

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. FIX API Applications 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: Communications	**Test Case:** ZCNX04	**Test Exit Criteria:** 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: Communications	**Test Case:** ZCNX05	**Test Exit Criteria:** 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: Communications	**Test Case:** ZCNX06	**Test Exit Criteria:** 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: Instrument Definition	**Test Case:** ZIDF01	**Test Exit Criteria:** 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: Instrument Definition	**Test Case:** ZIDF02	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZORD01	**Test Exit Criteria:** 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 • Usage of the tag 2667, AlgorithmicTradeIndicator, will be monitored as part of the test • Usage of the Retail Client Indicator tags 233 StypulationType and 234 , StipulationValue , 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: Order Management	**Test Case:** ZORD04	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZORD05	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZORD06	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZORD07	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZORD08	**Test Exit Criteria:** 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 or 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: Order Management	**Test Case:** ZORD10	**Test Exit Criteria:** Mandatory
Description: Identify trades 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 cancels trades executed in the market	
2		Confirmation of each trade cancelled Execution Report (Message Type "8") with tag 150=H 828=24

Test Class: Order Management	**Test Case:** ZORD11	**Test Exit Criteria:** Mandatory
Description: Identify trades modified 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 trades executed in the market	
2		Confirmation of each trade modified Execution Report (Message Type "8") with tag 150=F, 828= 24, 829=9000

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: Quote Management	**Test Case:** ZQTE01	**Test Exit Criteria:** 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 • 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 • Usage of the tag 2667, AlgorithmicTradeIndicator, will be monitored as part of the test • If the application implements delta protection it will be monitored as part of this test		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of quote parameters Registration (Message Type “o”) with tag 514 RegistTransType = 0 (New)	Acceptance of quote parameters Registration Instructions Response (Message Type “p”) with tag 506=A

Test Class: Quote Management	**Test Case:** ZQTE02	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZQTE03	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZQTE04	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZQTE05	**Test Exit Criteria:** 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: Order Management	**Test Case:** ZQTE06	**Test Exit Criteria:** 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

Test Class: Quote Management	**Test Case:** ZQTE07	**Test Exit Criteria:** Not Mandatory
Description: Reactivation of Quote Parameters		
Comments: This test is considered mandatory if the application has implemented Delta Protection Market activity will be produced to activate Delta Protection The application will have to either update or cancel and resend the quote parameters the quote parameters		
Test Entry Criteria: Successfully completed test case **ZQTE01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of quote parameters Registration (Message Type "o") with tag 514 RegistTransType = 1 (Replace)	Acceptance of quote parameters Registration Instructions Response (Message Type "p") with tag 506=A
OR		
1	Entry of quote parameters Registration (Message Type "o") with tag 514 RegistTransType = 2 (Cancel)	Acceptance of quote parameters Registration Instructions Response (Message Type "p") with tag 506=A
2	Entry of quote parameters Registration (Message Type "o") with tag 514 RegistTransType = 0 (New)	Acceptance of quote parameters Registration Instructions Response (Message Type "p") with tag 506=A

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: Block Trade Management	**Test Case:** ZBLK01	**Test Exit Criteria:** 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 24 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 24 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 24 of the Codification Tables

Test Class: Block Trade Management	**Test Case:** ZBLK04	**Test Exit Criteria:** 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 24 of the Codification Tables

Test Class: Block Trade Management	**Test Case:** ZBLK05	**Test Exit Criteria:** Not Mandatory
Description: Block Trade on Flexible Contract and/or Strategy 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 24 of the Codification Tables

Test Class: Strategies	**Test Case:** ZBLK06	**Test Exit Criteria:** 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: Request for Quote	**Test Case:** ZRFQ01	**Test Exit Criteria:** 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: Request for Quote	**Test Case:** ZRFQ02	**Test Exit Criteria:** 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: Request for Quote	**Test Case:** ZRFQ03	**Test Exit Criteria:** 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: Request for Quote	**Test Case:** ZRFQ04	**Test Exit Criteria:** 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 Result & Messages Received**
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: Request for Quote	**Test Case:** ZRFQ05	**Test Exit Criteria:** 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: Market Protection and Filters	**Test Case:** ZMPF01	**Test Exit Criteria:** 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: Market Protection and Filters	**Test Case:** ZMPF02	**Test Exit Criteria:** 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: Market Protection and Filters	**Test Case:** ZMPF03	**Test Exit Criteria:** 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: Market Protection and Filters	**Test Case:** ZMPF04	**Test Exit Criteria:** 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: Market Protection and Filters	**Test Case:** ZMPF05	**Test Exit Criteria:** 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

Test Class: Market Protection and Filters	**Test Case:** ZMPF06	**Test Exit Criteria:** Not Mandatory
Description: Management of filters for xRolling Stocks		
Comments: This test should be considered together with the tests outlined in section 0 Notes on the test- • The LP must have permission to manage filters • The RP-LP relationship must have been created in the system • PartyRole = 35 (LP) is mandatory • PartyRole = 60 (RP) is mandatory • Tag 55 (contract) is mandatory • StipulationType = MAXPOSBUY is mandatory (values between 0 and 999.999.999.999.999) • StipulationType = MAXPOSSELL is mandatory (values between 0 and 999.999.999.999.999)		
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") with tag 514 = 0 (New), 1 (Replace) and 2 (Cancel)	Acceptance of paramaters 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: Strategies	**Test Case:** ZHST01	**Test Exit Criteria:** 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: Strategies	**Test Case:** ZHST02	**Test Exit Criteria:** 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: Strategies	**Test Case:** ZHST03	**Test Exit Criteria:** Not Mandatory
Description: Identify New Strategy		
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)

3.5.9 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 Result & Messages Received**
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)

3.5.10 ZG – xRolling Stocks

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: xRolling Stocks	**Test Case:** ZXRS01	**Test Exit Criteria:** Not Mandatory
Description: Send an xRolling RFQ by the RP to various LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Quote Request sent to the HF MEFFGate Quote Request for xRolling (Msg Type = R) with tag 537, QuoteType = 2	Acceptance of Quote Request Quote Response to notify status of xRolling RFQ (Msg Type = AJ) with tag 537 QuoteType = 2 and tag 574 MatchType = N

Test Class: xRolling Stocks	**Test Case:** ZXRS02	**Test Exit Criteria:** Not Mandatory
Description: Send an xRolling RFQ by the RP to one LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Quote Request sent to the HF MEFFGate Quote Request for xRolling (Msg Type = R) with tag 537, QuoteType = 4	Acceptance of Quote Request Quote Response to notify status of xRolling RFQ (Msg Type = AJ) with tag 537 QuoteType = 4 and tag 574 MatchType = N

Test Class: xRolling Stocks	**Test Case:** ZXRS03	**Test Exit Criteria:** Not Mandatory
Description: Cancellation of an xRolling RFQ by the RP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Quote Response sent to the HF MEFFGate Quote Response to cancel xRolling by initiator (Msg Type = AJ) with tag 694 QuoteRespType = 5	Confirmation of cancellation Quote Response to notify status of xRolling RFQ (Msg Type = AJ) with tag 574 MatchType = Q

Test Class: xRolling Stocks	**Test Case:** ZXRS04	**Test Exit Criteria:** Not Mandatory
Description: Acceptance of an xRolling RFQ by the LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Acceptance of an xRolling RFQ by the LP Quote Response about xRolling conversation sent by Liquidity Provider (Msg Type = AJ) with tag 694 QuoteRespType = 2	Acceptance of an xRolling RFQ by the PL Quote Response to notify status of xRolling RFQ (Msg Type = AJ) (Msg Type = AJ) with tag 574 MatchType = U (LP Selected) / T (pending selection of LP)

Test Class: xRolling Stocks	**Test Case:** ZXRS05	**Test Exit Criteria:** Not Mandatory
Description: Cancellation of an xRolling RFQ by the LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Cancellation of an xRolling RFQ by the LP Execution Report sent by the Liquidity Provider to notify order status in the Stock Exchange (Msg Type = 8) with tag 150 ExecType = 4, tag 39 OrdStatus = 4	Execution Ack for the Liquidity Provider (Msg Type = BN) with tag 1036 ExecAckStatus = 1

Test Class: xRolling Stocks	**Test Case:** ZXRS06	**Test Exit Criteria:** Not Mandatory
Description: Rejection of an xRolling RFQ by the LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Rejection of an xRolling RFQ by the LP Quote Response about xRolling conversation sent by Liquidity Provider (Msg Type = AJ) with tag 694 QuoteRespType = 6	Acceptance of the Rejection Quote Response to notify status of xRolling RFQ (Msg Type = AJ) with tag 574 MatchType = P

Test Class: xRolling Stocks	**Test Case:** ZXRS07	**Test Exit Criteria:** Not Mandatory
Description: Confirmation of the acceptance of an order in the stock exchange by the LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Execution Report to notify executions in the xRolling RFQ trading mode (Msg Type=8) with tag 150(ExecType) = A(pending new) and tag 39(OrdStatus) = A(pending new) or tag 150(ExecType) = 0(new) and tag 39(OrdStatus) = 0(new)	n/a

Test Class: xRolling Stocks	**Test Case:** ZXRS08	**Test Exit Criteria:** Not Mandatory
Description: Confirmation of the partial execution of an order in the stock exchange by the LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Execution Report to notify executions in the xRolling RFQ trading mode (Msg Type=8) with tag 150(ExecType) = F(trade) and tag 39(OrdStatus) = 1(partially filled)	n/a

Test Class: xRolling Stocks	**Test Case:** ZXRS09	**Test Exit Criteria:** Not Mandatory
Description: Confirmation of the total execution of an order in the stock exchange by the LP		
Comments:		
Test Entry Criteria: Successfully completed test case **ZCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Execution Report to notify executions in the xRolling RFQ trading mode (Msg Type=8) with tag 150(ExecType) = F(trade) and tag 39(OrdStatus) = 2(filled)	n/a

4. Binary API Trading Applications 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.

4.1 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.

4.2 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.

4.3 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 the field SoftwareName of the logon message, message type 0x41 for each new binary API trading session.

4.4 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.

BC – 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
BP – Parameters	Registering of parameters Activating Delta Protection Reactivating Delta Protection
BO- Order Management	Entry of orders Modification of orders Cancellation of single orders Mass cancellation of orders Order modification Monitoring of order status
BQ – Quote Management	Entry of quote Modification of quote Cancellation of quote Monitoring of quote status

4.5 Test Cases

4.5.1 BC - Communications

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

Test Class: Communications	**Test Case:** BCNX01	**Test Exit Criteria:** Mandatory
Description: Connect to a new Binary API Trading Session		
Comments: As part of this test the subscriptions made in the logon will be monitored		
Test Entry Criteria:		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Connect to a new Binary API Trading Session Logon (Message Type “0x41”)	Logon accepted and Binary API Trading Session started Logon Response (Message Type “0x08”)

Test Class: Communications	**Test Case:** BCNX02	**Test Exit Criteria:** Mandatory
Description: End a Binary API Trading Session		
Comments:		
Test Entry Criteria: Successfully completed test case **BCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	End a Binary API Trading Session Logout (Message Type “0x35”)	Logout accepted and Binary API Trading Session ended Logout (Message Type “0x0B”)

Test Class: Communications	**Test Case:** BCNX03	**Test Exit Criteria:** Not Mandatory
Description: Connect to a API Trading Session receiving messages from an intermediary point		
Comments:		
Test Entry Criteria: Successfully completed test case BCNX01 and **BCNX02**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Connect to a new Binary API Trading Session Logon (Message Type “0x41”) specifying a message number in field "Sequence Number"	Logon accepted and Binary API Trading Session started Logon Response (Message Type “0x08”), messages sent from message number in field "Sequence Number"

Test Class: Communications	**Test Case:** BCNX04	**Test Exit Criteria:** Mandatory
Description: Detection of disconnection of a network node		
Comments:		
Test Entry Criteria: Successfully completed test case **BCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	MEFF simulates a network outage	
2		Network outage informed Network Status (Msg Type = 0x0A) with "NetworkStatusValue" =2
3	MEFF re-establishes network connectivity	
4		End of network outage informed Network Status (Msg Type = 0x0A) with "NetworkStatusValue" =1

Test Class: Communications	**Test Case:** BCNX05	**Test Exit Criteria:** Mandatory
Description: Change of connection to an alternative Binary Server		
Comments:		
Test Entry Criteria: Successfully completed test case **BCNX01** and **BCNX02**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Connect to a new Binary API Trading Session Logon (Message Type "0x41")	Logon accepted and Binary API Trading Session established Logon (Message Type "0x08")
2	End a Binary API Trading Session Logout (Message Type "0x35")	Logout accepted and Binary API Trading Session ended Logout (Message Type "0x0B")
3	Connect to a new Binary API Trading Session at a different IP address Logon (Message Type "0x41")	Logon accepted and Binary API Trading Session established Logon (Message Type "0x08")

Test Class: Communications	**Test Case:** BCNX06	**Test Exit Criteria:** Mandatory*
Description: Identify change in session status		
Comments: MEFF will simulate disorderly trading conditions		
Test Entry Criteria: Successfully completed test case **BCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	MEFF simulates change in session status	
2		Trading Session Status (Message Type "0x68") received with the Session Status informed in the combination fields TradingSessionSubID and TradSesStatus

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

4.5.2 BP – Parameters

Test Class: Parameters	**Test Case:** BPAR01	**Test Exit Criteria:** Not Mandatory
Description: Entry of Order and Quote Client Data Parameters		
Comments:		
Test Entry Criteria: Successfully completed test case **BCNX01** • Use of the MiFID 2 ORK fields will be monitored as part of the test • Usage of DEAflag field will be monitored as part of the test to ensure that it is used correctly in accordance with the member profile • Usage of the LiquidityProvisionActivity field will be monitored as part of the test to ensure that it is used correctly in accordance with the member profile • Usage of the SelfMatchPreventionID field will be monitored as part of the test • Usage of the AlgorithmicTradeIndicator field, will be monitored as part of the test		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of Order and Quote Client Data Parameters Registration (Message Type "0x6F")	Acceptance of parameters Order and Quote Client Data Parameters Ack/Nack (Message Type "0x87") with Status = 0x01

Test Class: Parameters	**Test Case:** BPAR02	**Test Exit Criteria:** Not Mandatory
Description: Delta Protection Parameters		
Comments:		
Test Entry Criteria: Successfully completed test case **BCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of parameters Delta Protection Parameters (Message Type = 0x86)	Acceptance of delta parameters Delta Protection Parameters Ack/Nack (Message Type = 0x88) with Status = 0x01

Test Class: Parameters	**Test Case:** BPAR03	**Test Exit Criteria:** Not Mandatory
Description: Reactivation Delta Protection Parameters		
Comments: • This test is considered mandatory if the application has implemented Delta Protection • Market activity will be produced to activate Delta Protection • The application will have to either update or cancel and resend the quote parameters the quote parameters		
Test Entry Criteria: Successfully completed test case **BPAR02**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of parameters Delta Protection Parameters (Message Type = 0x86)	Acceptance of delta parameters Delta Protection Parameters Ack/Nack (Message Type = 0x88) with Status = 0x01

4.5.3 BO - Order Management

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

Test Class: Order Management	**Test Case:** BORD01	**Test Exit Criteria:** Mandatory
Description: Entry of orders		
Comments: The client application may send various types of order as per the requirements of the client application If test **BORD11** has not been performed, the usage of the relevant fields will be monitored as part of the test		
Test Entry Criteria: Successfully completed test case **BCNX01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of orders with varying characteristics Simple new order (Message Type =”0x44”) OR Simple new order with Client Data (Message Type “0x45”)	Confirmation of each new order included on the order book Simple Order Status (Message Type = “0x02”) with OrdStatus = 0

Test Class:	**Test Case:**	**Test Exit Criteria:**
Order Management	BORD02	Mandatory
Description: Cancellation of orders		
Comments:		
Test Entry Criteria: Successfully completed test case **BORD01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Cancellation of order Order cancellation request (Message Type = “0x46”)	Confirmation of order cancellation Simple Order Status (Message Type = “0x02”) with OrdStatus = 4

Test Class:	**Test Case:**	**Test Exit Criteria:**
Order Management	BORD09	Mandatory
Description: Modification of orders		
Comments:		
Test Entry Criteria: Successfully completed test case **BORD01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Modification Simple order modification (Message Type = “0x47”)	Confirmation of order modification Simple Order Status (Message Type = “0x02”) with ExecType = M

Test Class:	**Test Case:**	**Test Exit Criteria:**
Order Management	BORD03	Mandatory
Description: Mass cancellation of orders or quotes		
Comments: The client application requests the cancellation of multiple orders or quotes 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 Mass order/quote cancellation (Message Type = "0x71")	Confirmation of mass order cancellation Order Mass Cancel Report (Message Type = "0x72") with field MassCancelResponse = 7 or 8

Test Class:	**Test Case:**	**Test Exit Criteria:**
Order Management	BORD04	Mandatory
Description: Identify trades		
Comments:		
Test Entry Criteria: Successfully completed test case **BORD01** or **BQTE02**		
Steps	Expected Action & Messages Sent	Expected Result & Messages Received
1	Orders or quotes previously entered are traded, fully and partially	
2		Confirmation of each trade Execution Private Information (Message Type = 0x12, 0x13, 0x14, 0x15 or 0x17) with field OrdStatus = 1 or 2

Test Class:	**Test Case:**	**Test Exit Criteria:**
Order Management	BORD05	Mandatory
Description: Identify status of orders before and after disconnection		
Comments:		
Test Entry Criteria: Successfully completed test case **BORD01**		
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 Private Information (Message Type = 0x12, 0x13, 0x14, 0x15 or 0x17) with field OrdStatus = 1 or 2

Test Class: Order Management	**Test Case:** BORD07	**Test Exit Criteria:** 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 **BORD01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of orders with varying characteristics Simple new order (Message Type =”0x44”) OR Simple new order with Client Data (Message Type “0x45”)	Confirmation of each new order included on the order book Simple Order Status (Message Type = “0x02”) with OrdStatus = 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 Simple Order Status (Message Type = “0x02”) with ExecType = M

4.5.4 BQ – Quote Management

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

Please refer to tests **BORD03 (Mass Cancelation)** and **BORD04 (Trade Identification)** in this document, which will also be considered in the testing of quote management.

Test Class: Quote Management	**Test Case:** BQTE02	**Test Exit Criteria:** Mandatory
Description: Entry of quotes		
Comments:		
Test Entry Criteria: Successfully completed test case **BPAR01**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Entry of quotes New Quote (Message Type = 0x53)	Confirmation of each new quote included on the order book Quote Status (Message Type = 0x06) with Field OrdStatus=0

Test Class: Quote Management	**Test Case:** BQTE03	**Test Exit Criteria:** Mandatory
Description: Modification of quotes		
Comments:		
Test Entry Criteria: Successfully completed test case **BQTE02**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Enter quote on the order book	
2	Modification of quote Quote modification request (Message Type = 0x61)	Confirmation of quote modification Quote Status (Message Type = 0x06) with field ExecType=M

Test Class: Quote Management	**Test Case:** BQTE04	**Test Exit Criteria:** Mandatory
Description: Cancellation of individual quote		
Comments:		
Test Entry Criteria: Successfully completed test case **BQTE02**		
Steps	**Expected Action & Messages Sent**	**Expected Result & Messages Received**
1	Enter quote on the order book	
2	Modification of quote Quote cancellation request (Message Type = 0x5A)	Confirmation of quote modification Quote Status (Message Type = 0x06) with Field OrdStatus=4 or P