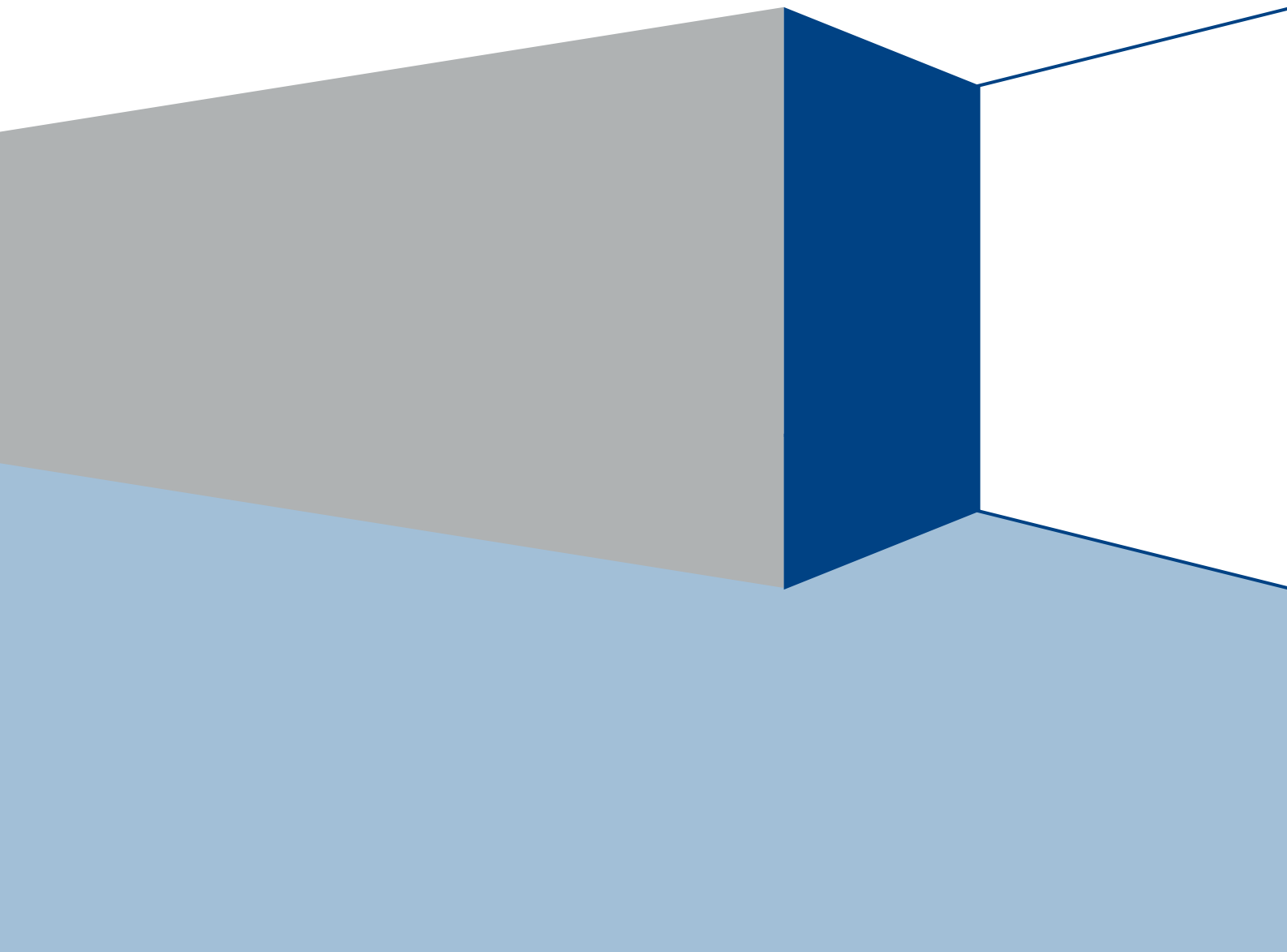


IDEM MIGRATION TO SOLA 5

# SAIL Certification Test Cases Guide

SOLA® Certification Specification



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# 1 Introduction

## 1.1 Purpose

The purpose of this publication is to provide customers with the test cases and details necessary for successfully completing certification for the SOLA trading system.

This SAL Certification Test Cases Guide provides test cases for participants and independent software vendors for the certification of their application in order to interface with SOLA using the native SOLA Access Information Language (SAIL) protocol.

## 1.2 Readership

The target audience for these publications is anyone working at either the business or Information Technology (IT) level of an organisation interested in certification for the SOLA 5 trading platform.

## 1.3 Enquiries

Please contact either Client Technology Services or your Technical Account Manager if you have any functional questions about the IDEM Sola Exchange services outlined in this document.

Client Technology Services (ITA) can be contacted at:

- Service Desk Free Toll Number: 008-00 26772-000
- Email: [service-desk@borsaitaliana.it](mailto:service-desk@borsaitaliana.it)  
[clients-services@borsaitaliana.it](mailto:clients-services@borsaitaliana.it)

## 2 Service Overview

### 2.1 Structure of the testing environment

The Exchange provides a single Customer Development Service (CDS) environment which is a simulation of the production service for both customer development and customer certification.

Customers will perform their development activities on this environment and when their applications are in a “ready state” customers can look to certify.

The Exchange provides Service Desk Analysts (SDA's) who will be able to assist customers in parts of their certification testing and provide a report at the end of each test.

Customers will be able to do the majority of their testing independently and only contact the SDA when they are satisfied with their test run and require SDA involvement to support co-ordinated test cases.

### 2.2 Conformance test execution

A new Certification service has been designed to allow customers to “Self” certify their applications. Customers are able to do their development and certify their software on the same environment, using a single set of enablement details.

The Live Simulation Service will continue to mirror the Production service for both Trading Interfaces and Information feeds.

Customers will now be required to 'self certify' core functionality before completing the remaining mandatory test cycles with SDA.

A Certification report will be run after the customer has confirmed a successful run of their application on the CDS.

The report will extract all the relevant functions performed by the application and presented them in a format to be reviewed by a SDA to confirm a pass or fail.

Prior to the report being run the customer will be required to confirm the gateway interfaces they are certifying and the userIDs they are using for each gateway. This will be detailed in the supporting certification report (detailed below) submitted by the customer. The reporting tool will use this information to extract all behaviour for a given time period.

Considerations for the report are listed below.

- The report will be run against any of the interfaces at once or against each separate interface individually depending on the customer application.
- The report will be run specifying a time range limited to a single day.
- The report will extract all message interface behaviour and represent this in a readable format in order to identify a successful set of functional testing.
- The report will identify if the session was maintained for the entire period or if it dropped.
- The report will check for any and all errors produced over the time period.
- The report will be sent to the customer to sign off the application as fit for purpose and ready for production access.

## 2.3 Submitting execution testing scenario

The Certification Report outlines what functions (scenarios) are supported by the customer application and therefore details what actions must be performed by the application in order to pass Self Certification and Certification.

On the Self Certification Session of the Conformance Test customer must identify the execution test cases they intend to perform, mark them and once finished specify the execution time and the test results. In the column Test Case Result customer must specify if the test has been passed and where necessary also information related to the orders/quotes entered during the test.

The Certification Report can be found on the dedicated section on Borsa Italiana's website and should be completed and submitted by the customer to [service-desk@borsaitaliana.it](mailto:service-desk@borsaitaliana.it).

## 2.4 Booking Self Certification or Certification test

Service Desk Analysts after have received the Certification Report that identify the execution testing scenario will execute the following actions:

- Check of the submitted Certification Report testing scenario
- Request to the customer a document review if necessary
- Confirm or rescheduling of the Execution Date & Time Window provided on the basis of the Customers submitted requests
- Booking and reply to the customer in order to confirm the Execution Date & Time Window

## 2.5 Submitting execution report and notifying result

The Customer has to run the Self Certification tests (not co-ordinated), the Certification Report tests (co-ordinated) in coordination with the SDA and mark the result of test cases on Certification Report.

At the end of the Self Certification and Certification Session the Customer should consolidate the Certification Report and sent a copy of it to the SDA via mail [service-desk@borsaitaliana.it](mailto:service-desk@borsaitaliana.it).

Service Desk Analysts after receiving the Certification Report will run a test validation session.

The time policy that is applied to validate Certification Report is defined below:

- Self Certification Validation time:  
from 1 to 3 working days depending on pending customer validation requests
- Certification Validation time:  
from 1 to 3 working days depending on pending customer validation requests

At end of Validation the SDA will sent back to the customer the result of Validation (PASS or FAIL) and the Certification Report integrated with test cases SDA outcome.

## 2.6 Certification Instruments

Instruments involved in the various certification test cases are identified as INST1 to INST22. These symbols may refer to any instrument available in the IDEM test environment. According to the client requirements, the list of instruments to be used may either be formally defined prior to the certification or “on the fly” as the certification goes.

Symbols GRP1 and GRP2 may refer to any instrument group available in the IDEM test environment. Symbol GRP1 may refer to any strategy instrument group. As for instruments, the list of groups to be used may either be formally defined prior to the certification or “on the fly” as the certification goes, in accordance with the client’s requirements. The price and quantity specified in the test case description are indicative.

Customer must follow the prices and quantities accepted for the instrument on which it operates

Terminology:

Term	Definition
Client	Refers to a computer system able to interact with the LSE electronic trading platform and to support the specific range of functionalities required by the firm’s trading activities.
Instrument	A specific tradable option or future or strategy. For options, there are two instruments for each underlying, expiry month and strike price combination: one put and one call.
Instrument group	Refers to all instruments with the same underlying.

## 3 SDA Support

Service Desk Analysts will be available to assist customers in completing part of their certification test by performing both mandatory and optional functions as detailed below.

The following email account should be used for customers to book SDA actions and confirm details for the certification report.

[service-desk@borsaitaliana.it](mailto:service-desk@borsaitaliana.it)

SDAs will be able to perform the following functions.

- Supporting the co-ordinated test cases.
- SDA will run reports for each customer application and liaise to inform pass/fail and reasons.

## 4 Certification Test Cases

### 4.1 Test Procedure

Execute the test steps as documented in the test case scenarios.

Once a test step has been executed, document the results in the Certification Report.

When documenting the test results, include all information as requested in the test step, including the following:

- Order/quoteMsg ID (if any)
- time of the order/quote/operation submission/execution

If the result does not match the expected result, document the actual result in the Certification Report and provide comments including the following:

- Order/QuoteMsg ID (if any)
- time of the order/quote/operation submission/execution
- error messages received
- any information which may be helpful in troubleshooting the error

Unless a log off or disconnect request is specified in the test case, please complete all test cases without logging off or disconnecting.

If there are any unexpected log offs or disconnects, please document these in the comments section of the Certification Report.



## 4.2 Technical Test Cases

<b>ID #:</b> TEC-01	<b>Type:</b> Technical	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Establishing the first SAIL connection of a trading session.			
<b>Comments:</b> First Time User Connection (Message Type TC).			
<b>Prerequisites</b>			
None.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Connects to SOLA. Sends a TC message. [Exchange Message ID: 0]	Connection established. Sends a TK message [User sequence ID:0 ]	
2		Sends a Heartbeat message question. Sends a TH message	
3	Client: Sends a Heartbeat response within the specified timeframe [Inactivity Interval] value sent in the connection message (TC). Sends a TI message		

<b>ID #:</b> TEC-02	<b>Type:</b> Technical	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Terminating a SAIL session			
<b>Comments:</b> User's Disconnection Request (Message Type TD)			
<b>Prerequisites</b>			
Execution of test case TEC-01			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Disconnects from SOLA. Sends a TD message	Connection is terminated. Sends a TL message	

<b>ID #:</b> TEC-03	<b>Type:</b> Technical	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> User Reconnection during the session – Retransmission from next message.			
<b>Comments:</b> User Reconnection (Message Type TC)			
<b>Prerequisites</b>			
Execution of test cases TEC-01 and TEC-02			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Reconnects to SOLA. <i>Sends a TC message with a blank Exchange Message ID:  [Exchange message ID: “ ”]</i>	Sends an arbitrary number of messages and the connection is re-established.  <i>Sends a TK message:  [User sequence ID != next expected User sequence ID]</i>	

<b>ID #:</b> TEC-04	<b>Type:</b> Technical	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Disconnection Instruction Management – Disconnection by Exchange; outstanding quotes are cancelled.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
None.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Connects to SOLA. <i>Sends a TC message:  [Exchange Message ID: 0]  [Inactivity Interval: 1]</i>	Connection established. <i>Sends a TK message</i>	
2	<u>Client:</u> Active Y(ON)		
3	<u>Client:</u> Specifies disconnection instructions. <i>Sends a TA message:  [Disconnection Instruction: Q]</i>	Disconnection Instruction is accepted. <i>Sends a TM message</i>	
4	<u>Client:</u> Sends a few quotes. <i>Sends several Q&lt;i&gt; messages</i>	Quotes are accepted. <i>Sends several LA messages</i>	Quote or Market Depth sent. <i>Several /FFF or H/HF messages are sent.  For strategy: Several FS or HS message are sent</i>

5	<u>Client:</u> Stops flow of client messages for longer than the "Inactivity Interval" period defined in the TC message of this connection.	SOLA disconnects client and cancels all outstanding quotes.	Quote or Market Depth sent. <i>Several F/FF or H/HF messages are sent.</i> <i>For strategy: Several FS or HS message are sent</i>
6	<u>Client:</u> Reconnects and receives missed messages. <i>Sends a TC message:</i> <i>[Exchange message ID: "</i> <i>"]</i>	Connection accepted. <i>Sends a TK message</i> Quotes cancellation notice is sent. <i>Sends an KG message</i>	

<b>ID #:</b> TEC-05	<b>Type:</b> Technical	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Disconnection Instruction Management – Disconnection by Exchange; outstanding quotes are cancelled.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
None.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Specifies disconnection instructions. <i>Sends a TA message:</i> <i>[Disconnection Instruction: Q]</i>	Disconnection Instruction is accepted. <i>Sends a TM message</i>	
2	<u>Client:</u> Active Y(ON)		
3	<u>Client:</u> Sends a few quotes. <i>Sends several Q&lt;i&gt; messages</i>	Quotes are accepted. <i>Sends several LA messages</i>	
4	<u>Client:</u> Disconnects. <i>Sends a TD message</i>	Disconnection is accepted. <i>Sends a TL message</i> All outstanding quotes are cancelled.	Quote or Market Depth sent. <i>Several /FFF or H/HF messages are sent.</i> <i>For strategy: Several FS or HS message are sent</i>
5	<u>Client:</u> Reconnects and receives missed messages. <i>Sends a TC message:</i> <i>[Exchange message ID: "</i> <i>"]</i>	Connection accepted. <i>Sends a TK message</i> Quotes cancellation notice is sent. <i>Sends an KG message</i>	

<b>ID #:</b> TEC-06	<b>Type:</b> Technical	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Disconnection Instruction Management – Disconnection by Client; outstanding quotes are not cancelled			
<b>Comments:</b> Instruction to cancel quotes is removed			
<b>Prerequisites</b>			
Execution of test case TEC-05			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Specifies disconnection instructions. <i>Sends a TA message: [Disconnection Instruction: Q]</i>	Disconnection Instruction is accepted. <i>Sends a TM message</i>	
2	<u>Client:</u> Active N(OFF)		
3	<u>Client:</u> Sends a few quotes. <i>Sends several Q&lt;i&gt; messages</i>	Quotes are accepted. <i>Sends several LA messages</i>	Quote or Market Depth sent. <i>Several F/FF or H/HF messages are sent. For strategy: Several FS or HS message are sent</i>
4	<u>Client:</u> Disconnects. <i>Sends a TD message</i>	Disconnection is accepted; outstanding quotes are not cancelled. <i>Sends a TL message</i>	
5	<u>Client:</u> Reconnects. <i>Sends a TC message</i>	Connection is accepted. <i>Sends a TM message</i>	

<b>ID #:</b> TEC-07	<b>Type:</b> Technical	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Re-synchronization from out of sequence situation.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
Client must be disconnected.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Connects to SOLA <i>Sends a TC message: [Exchange Message ID: 0]</i>	Connection established. <i>Sends a TK message</i>	

2	Client: Sends an order or a quote. [User Sequence ID: z]	Message is out of sequence. Client is disconnected. Client must reconnect. Sends a TO message: [Received User Sequence ID: z] [Expected User Message ID: x]	
3	Client: Reconnects. Sends a TC message	Re-connection and Disconnection Instructions are accepted. Sends a TK	
4	Client: Sends an order or a quote. [User Sequence ID: x]	Message is in sequence. Order or quote is accepted.	

<b>ID #:</b> TEC-08	<b>Type:</b> Technical	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> End of Transmission			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
Execution of test case TEC-01			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Sends an End of Transmission message at the end of the trading day. Restart SAIL Front End gateway.	Sends a TT message	

### 4.3 Unsolicited Services Test Cases

<b>ID #:</b> UNS-01	<b>Type:</b> Unsolicited Services	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Group State Change Notification			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
Choose a Group and change the status of the group.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Is connected and has requested to receive NG message type.		
2		Sends an NG message when an instrument group change from pre-opening to Continuous Trading	Group Status Updated. <i>A GR message is sent</i>

<b>ID #:</b> UNS-02	<b>Type:</b> Unsolicited Services	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Instrument State Change Notification			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
Choose an instrument and change the status of the instrument.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Is connected and has requested to receive NI message type.		
2		Sends an NI message when an instrument group change from pre-opening to Continuous Trading	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

<b>ID #:</b> UNS-03	<b>Type:</b> Unsolicited Services	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Bulletin message (Market Supervision message) sent from			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
MOC enters a bulletin to be disseminated to market participants			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Is connected on HSVF		
2	<u>BIT:</u> sends a bulletin messages to the clients		Bulletin message. <i>An L message is sent</i>

#### 4.4 Order Creation Test Cases

<b>ID #:</b> ORD-01	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Market Top order that gets partially filled; the remaining quantity is booked at a limit price.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The book for instrument INST1 must be set to [Buy 12@2.00 – Sell 10@2.50]; no other orders must be in the book.</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode.</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p>Client: Enters a Sell Market order for 20 contracts for instrument INST1.</p> <p><i>Sends an OE message: [Price type: M]</i></p>	<p>Order is booked.</p> <p><i>Sends a KE message [Status: ]</i></p> <p>Order is partially filled and the remaining quantity is booked 8@2.00.</p> <p><i>Sends 1 NT message</i></p> <p><i>For Strategy</i></p> <p><i>Sends 1 NT message and 1 NL message per leg</i></p>	<p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p> <p>Trade sent.</p> <p><i>A C/CF message is sent</i></p> <p>Strategy:</p> <p><i>A CS message is sent</i></p> <p><i>A C/CF message per leg is sent</i></p>

<b>ID #:</b> ORD-02	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a limit order that gets partially filled; the remaining quantity is booked. The order opens the position.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The book for instrument INST1 must be set to [Buy 12@0.10 – Sell 10@0.20].</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode.</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p>Client: Enters a Buy order 15@0.20, Open Position, for instrument INST1.</p> <p><i>Sends an OE message: [Open/Close: O]</i></p>	<p>Order is booked.</p> <p><i>Sends a KE message [Status: ]</i></p> <p>The order is traded.</p> <p><i>Sends 1 NT message</i></p>	<p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p>



	<i>[Price type: L]</i>	<i>For Strategy</i> <i>Sends 1 NT message and</i> <i>1 NL message per</i> <i>leg</i>	<b>Trade sent.</b> <i>A C/CF message is sent</i>  <i>Strategy:</i> <i>A CS message is sent</i> <i>A C/CF message per leg is sent</i>
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<b>ID #:</b> ORD-03	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
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**Description:** Entering a limit order that gets totally filled. The order closes the position. The order is good until cancelled by the trader.

**Comments:** None.

**Prerequisites**

1. The book for instrument INST1 must be set to [Buy 12@200.00 – Sell 10@201.50].
2. Group for instrument INST1 must be in 'Continuous Trading' mode.

#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a Sell order 12@200.00, Close Position, for instrument INST1. <i>Sends an OE message:</i> <i>[Price type: L]</i> <i>[Duration Type: F]</i> <i>[Open/Close: C]</i>	Order is booked. <i>Sends a KE message</i> <i>[Status: X]</i> The order is traded. <i>Sends 1 NT message</i>  <i>For Strategy</i> <i>Sends 1 NT message and</i> <i>1 NL message per</i> <i>leg</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS</i> <i>message is sent</i> <b>Trade sent.</b> <i>A C/CF message is sent</i>  <i>Strategy:</i> <i>A CS message is sent</i> <i>A C/CF message per leg is sent</i>

<b>ID #:</b> ORD-04	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
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**Description:** Entering an opening order (price Type: "O") during the pre-opening phase. The order will participate to the auction and totally filled in.

**Comments:** None.

**Prerequisites**

1. The book for instrument INST1 must be set to [Buy 12@200.00 – Sell 10@201.50].
2. Group for instrument INST1 must be **pre-opening phase**

#	Test Steps	Expected Results	
		Trading Engine Responses	Market Information (HSVF)

		(SAIL)	
1	<p><u>Client:</u> Enters a Sell order 12@ opening price, Close Position, for instrument INST1.</p> <p><i>Sends an OE message:</i>  [Price type: O]  [Duration Type: F]  [Open/Close: C]</p> <p>: change the status of the instrument from Pre – opening to Opening</p>	<p>Order is booked.</p> <p><i>Sends a KE message</i>  [Status: ]</p> <p>The order is traded at opening price., during the auction phase.</p> <p><i>Sends 1 NT message</i></p>	<p>Quote or Market Depth sent.  <i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p> <p>Trade sent.  <i>A C/CF message is sent</i></p>

ID #:	ORD-05	Type:	Order Creation	Requirement:	Mandatory	Co-ordinated Test:	N
<b>Description:</b> Entering a limit order (price Type: "L") during the pre-opening phase. The order will partially participate to the auction.							
<b>Comments:</b> None.							
<b>Prerequisites</b>							
<ol style="list-style-type: none"> <li>The book for instrument INST1 must be set to [Buy 12@200.00 – Sell 10@201.50].</li> <li>Group for instrument INST1 must be <b>pre-opening phase</b></li> </ol>							
#	Test Steps	Expected Results					
		Trading Engine Responses (SAIL)	Market Information (HSVF)				
1	<p><u>Client:</u> Enters a Sell order 15@ opening price,</p> <p><i>Sends an OE message:</i>  [Price type: L]</p> <p>: change the status of the instrument from Pre – opening to Opening</p>	<p>Order is booked.</p> <p><i>Sends a KE message</i>  [Status: ]</p> <p>The order is traded at opening price. Remaining quantity will pass into continuous trading</p> <p><i>Sends 1 NT message</i></p>	<p>Quote or Market Depth sent.  <i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p> <p>Trade sent.  <i>A C/CF message is sent</i></p>				

ID #:	ORD-06	Type:	Order Creation	Requirement:	Optional	Co-ordinated Test:	N
<b>Description:</b> Entering a limit order that gets booked. The order is good until a specific date.							
<b>Comments:</b> This test is to validate that the client application is using the right date format, namely 'YYYYMMDD'. Represents the order's last active date.							
<b>Prerequisites</b>							
<ol style="list-style-type: none"> <li>The book for instrument INST1 must be set to [Buy 12@200.00 –Sell 10@201.50].</li> <li>Group for instrument INST1 must be in 'Continuous Trading' mode.</li> </ol>							

#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u> Enters a Sell order 12@201.40, Good until Date with a date before the instrument expiry date and with a day number less than 12 (ex: Dec 10th, June 5th, March 2nd), for instrument INST1</p> <p><i>Sends an OE message:</i>  <i>[Price type: L]</i>  <i>[Duration Type: D]</i>  <i>[GTD Data: YYYYMMDD (Represents the order's last active day)]</i></p>	<p>Order is booked.</p> <p><i>Sends a KE message</i>  <i>[Status: ]</i></p>	<p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p>

<b>ID #:</b> ORD-07	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
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**Description:** Entering a 'Fill and Kill' order that gets partially filled.

**Comments:** None.

**Prerequisites**

1. The market for instrument INST1 must be set to [12@2.00 – 10@2.50].
2. Group for instrument INST1 must be in 'Continuous Trading' mode.

#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u> Enters a Sell 'Fill and Kill' order 15@2.00 for instrument INST1.</p> <p><i>Sends an OE message:</i>  <i>[Duration Type: E]</i></p>	<p>Order is partially filled, the remaining is killed.</p> <p><i>Sends a KE message</i>  <i>[Status: X]</i></p> <p><i>Sends 1 NT message and NZ message</i></p> <p><i>For Strategy</i>  <i>Sends 1 NT message and 1 NL message per leg</i></p>	<p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p> <p>Trade sent.</p> <p><i>A C/CF message is sent</i></p> <p><i>Strategy:</i>  <i>A CS message is sent</i>  <i>A C/CF message per leg is sent</i></p>

<b>ID #:</b> ORD-08	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a 'Fill and Kill' order that gets killed.			
<b>Comments:</b> Fill-and-kill orders cannot be booked			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The market for instrument INST1 must be set to [12@2.00 – 10@2.50].</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode.</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Sell 'Fill and Kill' order 10@2.50 for instrument INST1. <i>Sends an OE message:</i> <i>[Duration Type: E]</i>	Order cannot be filled and is killed. <i>Sends a KE message</i> <i>[Status: E]</i>	

<b>ID #:</b> ORD-09	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a limit order with a Clearing Instruction.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The market for instrument INST1 must be set to [10@2.00 – 10@2.50].</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Sell Limit Order 40@2.25 with a Clearing Instruction, for instrument INST1. <i>Sends an OE message:</i> <i>[Clearing Instruction: anything]</i>	Order is booked. <i>Sends a KE message</i> <i>[Status: ]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>  <i>Strategy: An HS message is sent</i>

<b>ID #:</b> ORD-10	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a limit order with Owner Data			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The market for instrument INST1 must be set to [10@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Buy Limit Order 40@2.25 with Owner Data, for instrument INST1. <i>Sends an OE message: [Owner Data: anything]</i>	Order is booked. <i>Sends a KE message [Status: ]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent Strategy: An HS message is sent</i>

<b>ID #:</b> ORD-11	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Book any price order that gets filled at 2 different prices.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 must be in 'Continuous Trading' mode.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters 2 orders: Buy 10@2.50, 15@2.60.		Quote or Market Depth sent. <i>An F/FF or H/HF message is sent Strategy: An HS message is sent</i>
2	<u>Client:</u> Enters a Sell Market any price Order for 20 contracts for instrument INST1. <i>Sends an OE message: [Price type: W]</i>	Order is filled at 2 different prices 15@2.60.and 5@2.50 <i>Sends 2 NT messages</i>  <i>Strategy: 2 NT messages each followed by 1 NL message per leg</i>	Trade sent. <i>2 C/CF message are sent Strategy: 2 CS are sent Per Leg: C or CF message is sent</i>  Quote or Market Depth sent. <i>An F/FF or H/HF message is sent Strategy: An HS is sent</i>

<b>ID #:</b> ORD-12	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Minimum Fill volume order that cannot be filled.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The market for instrument INST1 must be set to [10@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Buy Limit Order 10@2.40 for instrument INST1 with a minimum fill volume of 5. <i>Sends an OE message: [Quantity Term: M] [Additional Quantity: 5]</i>	Order is eliminated because it cannot be filled for the specified volume. <i>Sends a KE message: [Status: E]</i>	

<b>ID #:</b> ORD-13	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Minimum Fill volume order that is partially filled.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The market for instrument INST1 must be set to [10@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Sell Limit Order 20@2.00 for instrument INST1 with a minimum fill volume of 10. <i>Sends an OE message: [QuantityTerm: M] [Additional Quantity: 10]</i>	Order is partially traded and the remaining quantity is booked 10@2.00. <i>Sends a KE message: [Status: ] For Strategy Sends 1 NT message and 1 NL message per leg</i>	Trade sent. <i>A C/CF message is sent</i>  <i>Strategy: A CS message is sent A C/CF message per leg is sent</i>  Quote or Market Depth sent. <i>An F/FF or H/HF message is sent For strategy: FS or HS message is sent</i>

<b>ID #:</b> ORD-14	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Stop Order and being able to handle it when it gets triggered.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The INST21 needs to allow Stop Orders. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. The market for instrument INST21 must be set to [30@2.00 – 10@2.50]. 4. The last Price or the previous day's close for INST21 must be greater than 2.00.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Sell Stop Order 9@2.00 for instrument INST21, trigger price 2.10. Sends an OE message: [Additional Price: 2.10] [Special Price Term: S]	Order is accepted and not booked. Sends a KE message [Status:S]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent
2	<u>BIT:</u> Enters an order on INST21 to sell 25@2.00.	Order is accepted and 25 traded at 2.00 against the booked order. The client order is triggered and traded 5@2.00. Sends an NT message  For Strategy Sends 1 NT message and 1 NL message per leg  The remaining 4 contracts are booked at 2.00. Sends a KE message [Status: ]	Trade sent. A C/CF message is sent  Strategy: 1 CS are sent and 1 C/CF message per leg  Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

<b>ID #:</b> ORD-15	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Stop on Ask Order and being able to handle it when it gets triggered. (Not booked immediately)			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The INST21 needs to allow Stop Orders. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. Instrument Book must be clear			

4. The market for instrument INST21 must be set to [12@10.00 – 10@10.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u> Enters a Sell StopOnAsk Order 8@10.00 for instrument INST21, trigger price 10.25</p> <p><i>Sends an OE message:</i> [Additional Price: 10.25] [Special Price Term: I]</p>	<p>Order is accepted and is not on the book.</p> <p><i>Sends a KE message</i> [Status: "S "]</p>	<p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p>
2	<p><u>Client:</u> Enters a sell order on INST21 15@10.25.</p>	<p>Limit order triggers StopOrder.</p> <p>StopOrder match bid side.</p> <p>Trade 8@10.00 is done.</p> <p><i>Sends an NT message</i></p> <p><i>For Strategy</i> <i>Sends 1 NT message and 1 NL message per leg</i></p> <p>The remaining 4 Qty are booked at 10.00 on Bid side</p> <p><i>Sends a KE message</i> [Status: " " ]</p>	<p>Trade sent.</p> <p><i>A C/CF message is sent</i></p> <p><i>Strategy: 1 CS are sent and 1 C/CF message per leg</i></p> <p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p>

<b>ID #:</b> ORD-16	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Stop on Bid Order and being able to handle it when it gets triggered. (booked immediately)			
<b>Comments:</b> None.			
Prerequisites			
<ol style="list-style-type: none"> <li>1. The INST21 needs to allow Stop Orders.</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode</li> <li>3. Instrument Book must be clear</li> <li>4. The market for instrument INST21 must be set to [10@10.00 – 10@10.35].</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u> Enters a Bid StopOnBid Order 8@10.25 for instrument INST21, trigger price 9.90</p>	<p>Order is accepted, is immediately triggered and booked</p>	<p>Quote or Market Depth sent.</p> <p><i>An F/FF or H/HF message is sent</i></p>



	<i>Sends an OE message: [Additional Price: 9.90] [Special Price Term: "E" ]</i>	<i>Sends a KE message [Status:" " ]</i>	<i>For strategy: FS or HS message is sent</i>
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<b>ID #:</b> ORD-17	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Stop on Last Order and being able to handle it when it gets triggered. (booked and traded immediately)			
<b>Comments:</b>			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The INST21 needs to allow Stop Orders.</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode</li> <li>3. Instrument Book must be clear</li> <li>4. Two opposite orders with Price 10,20 must be traded</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client</u> Enters a bid order on INST21 12@10.30.	Order is accepted and is on the book. <i>Sends a KE message [Status:!" " ]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent For strategy: FS or HS message is sent</i>
2	<u>Client:</u> Enters a ask StopOnLast Order 15@10.30 for instrument INST21, trigger price 10.30 <i>Sends an OE message: [Additional Price: 10.30] [Special Price Term: S]</i>	Stop is enter  Order is immediately triggered. StopOrder match bid side. Trade 12@10.30 is done. <i>Sends an NT message</i>  <i>For Strategy Sends 1 NT message and 1 NL message per leg</i>  The remaining 3 Qty are booked at 10.30 on Ask side <i>Sends a KE message [Status: " " ]</i>	Trade sent. A C/CF message is sent  Strategy: 1 CS are sent and 1 C/CF message per leg  Quote or Market Depth sent. <i>An F/FF or H/HF message is sent For strategy: FS or HS message is sent</i>

<b>ID #:</b> ORD-18	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering an If Ask Touched Order and being able to handle it when it gets triggered. (Not booked immediately)			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The INST21 needs to allow If Touched Orders. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. The market for instrument INST21 must be set to 12@10.00.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Buy IfAskTouched Order 8@10.00 for instrument INST21, trigger price 10.75 <i>Sends an OE message:</i> <i>[Additional Price: 10.75]</i> <i>[Special Price Term: H]</i>	Stop Order is accepted and is not on the book. <i>Sends a KE message</i>  <i>[Status: "S " ]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>  <i>For strategy: FS or HS message is sent</i>
2	<u>Client:</u> Enters a sell order on INST21 15@10.60	Limit order triggers  Trade 8@10.00 is done. <i>Sends an NT message</i>  <i>For Strategy</i> <i>Sends 1 NT message and 1 NL message per leg</i>  <i>Sends a KE message</i> <i>[Status: " " ]</i>	Trade sent. <i>A C/CF message is sent</i>  Strategy: 1 CS are sent and 1 C/CF message per leg  Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

<b>ID #:</b> ORD-19	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering an If Touched on Bid Order and being able to handle it when it gets triggered. (booked immediately)			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The INST21 needs to allow If Touched Orders. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. The market for instrument INST21 must be set to [10@10.00 – 10@10.35].			
#	Test Steps	Expected Results	
		Trading Engine	Market Information

		Responses (SAIL)	(HSVF)
1	Client: Enters a Bid IfTouchBid Order 8@10.25 for instrument INST21, trigger price 10.10 Sends an OE message: [Additional Price:10.10] [Special Price Term: "F" ]	Order is accepted, is immediately triggered and booked but no contract made Sends a KE message [Status:" "]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

ID #: ORD-20	Type: Order Creation	Requirement: Optional	Co-ordinated Test: N
<b>Description:</b> Entering a If Touched on Last Order and being able to handle it when it gets triggered. (booked and traded immediately)			
<b>Comments:</b> None.			
Prerequisites			
1. The INST21 needs to allow If Touched Orders. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. Two opposite orders with Price 10,20 must be traded			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a bid order on INST21 15@10.30.	Order is accepted and is on the book. Sends a KE message [Status:" "]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent
2	Client: Enters a buy StopOnLast Order 17@10.30 for instrument INST21, trigger price 10.1 Sends an OE message: [Additional Price: 10.10] [Special Price Term: T]	Order is immediately triggered. StopOrder match bid side. Trade 15@10.30 is done. Sends an NT message For Strategy Sends 1 NT message and 1 NL message per leg  The remaining 2 Qty are booked at 10.30 on Ask side Sends a KE message [Status:" " ]	Trade sent. A C/CF message is sent  Strategy: 1 CS are sent and 1 C/CF message per leg  Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

<b>ID #:</b> ORD-21	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Circuit Breaker Triggered to Y price limit violation			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The INST21 needs to allow Circuit Breaker. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. Instrument Book must be clear			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<b>Client:</b> Enters a Sell Order Q@P for instrument INST21. P>Y P<X (Yhigh<P<XHigh) <i>Sends an OE message</i>	Order is accepted and is on the book. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>
2	<b>Client:</b> Enters a Buy order AT Market price for quantity Q	<i>Orders is deleted due to circuit breaker (KE sent with Order Status : C)</i> <i>NI Message with Instrument state changes in Suspended Status 'S'.</i> <i>After 1minute NI message with Status 'N'</i>	<i>H send with Instrument Status F</i> Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>after one minute H send with Instrument Status T</i>

<b>ID #:</b> ORD-22	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Circuit Breaker Triggered to Z price limit violation			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The INST21 needs to allow Circuit Breaker. 2. Group for instrument INST1 must be in 'Continuous Trading' mode 3. Instrument Book must be clear 4. Two opposite orders with Price 10 must be traded			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<b>Client:</b> Enters a regular Buy order 100@20 for instrument INST1.	Order is accepted and is on the book. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>

	XLow<YLow<ZLow<Yhigh h<20<ZHigh<XHigh		
2	Client: Enters an order on Sell 100@20	Orders is deleted due to circuit breaker (KE sent with Order Status : C) NI Message with Instrument state changes in Suspended as Status 'S'. After 1min NI message with instrument Status 'N'	Quote or Market Depth sent. An F/FF or H/HF message is sent H send with Instrument Status F  after one minute H send with Instrument Status T

<b>ID #:</b> ORD-23	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a House order.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The market for instrument INST1 must be set to [12@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a Buy Limit Order 100@2.40, House for the instrument INST1. Sends an OE message: [Price type: L] [Account type: 2]	Order is booked. Sends a KE message [Status: ]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

<b>ID #:</b> ORD-24	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory for MM	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Market Maker Limit Order.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The book for instrument INST1 must be set to [10@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a Buy Limit	Order is booked.	Quote or Market Depth sent.

	Order 100@2.40, for instrument INST1. Sends an OE message: [Price type: L] [Account Type: 4]	Sends a KE message [Status: ]	An F/FF or H/HF message is sent For strategy: FS or HS message is sent
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<b>ID #:</b> ORD-25	<b>Type:</b> Order Creation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Client Limit Order			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a Buy Limit Order 100@2.40, Pro, for instrument INST1. Sends an OE message: [Account Type: 5]	Order is booked Sends a KE message [Status: ]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

<b>ID #:</b> ORD-26	<b>Type:</b> Order Creation	<b>Requirement:</b> Optiona	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Limit Order with a Disclosed quantity.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1.The market for instrument INST1 must be set to [10@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a Buy Limit Order 30@2.05 with a Disclosed quantity of 25 for instrument INST1. Sends an OE message:	Order is accepted and booked and only 25 contracts are shown. Sends a KE message	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS

	[Quantity Term: D] [Additional Quantity: 25]	[Status: ]	message is sent
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<b>ID #:</b> ORD-27	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Limit Order for a Strategy (spread) that gets traded ( <b>Trade in Strategy Book</b> )			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The instrument INST24 is a strategy and contains 2 legs (spread INST22 – INST23)</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode</li> <li>3. The market for instrument INST24 must be set to [10@2.00 – 10@2.50].</li> <li>4. The market for instrument INST22 (1<sup>st</sup> leg of spread) must be set to [5@3.20 – 10@3.30].</li> <li>5. The market for instrument INST23 (2<sup>nd</sup> leg of spread) must be set to [10@1.00 – 10@1.10].</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Sell Limit Order 10@2.00 for instrument INST24.	<p>Order is accepted and traded against the client order.</p> <p><i>Sends an NT message for the strategy and 1 NL message per leg</i></p> <p>Trade sent.</p> <p><i>1 NT message for the spread, followed by 1 NL for each leg</i></p>	<p>Trade sent.</p> <p><i>For strategy: CS message is sent followed by 1 C/CF message per leg</i></p> <p><i>For the legs: C/CF [PriceIndicatorMarket = P] message is sent per leg</i></p> <p>Strategy Quote or Market Depth sent.</p> <p><i>An FS or HS message is sent</i></p>

<b>ID #:</b> ORD-28	<b>Type:</b> Order Creation	<b>Class:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering a Market Order at instrument limit (Min/Max) price.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. The market for instrument INST1 must be set to [12@0.0001 – 10@99999.5000]; no other orders must be in the Book.</li> <li>2. Group for instrument INST1 must be in 'Continuous Trading' mode.</li> <li>3. Adjust Min/Max for Product/instrument in Configuration manager</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information - HSVF
1	<u>Client:</u> Enters a Buy	Order is accepted and	Quote or Market Depth sent.

	<p>@0.0001 for 20 contracts for instrument INST1.  <u>Client:</u> Enters a Sell market for 12 contracts for instrument INST1.</p> <p><i>Sends an OE message:  [Price type: M]</i></p>	<p>trades completely  <i>Sends a KE message  [Status:X ]</i></p> <p>Trade Sent  <i>Sends 1 NT message</i></p> <p><i>For Strategy  Sends 1 NT message and  1 NL message per  leg</i></p>	<p><i>An F/FF or H/HF message is sent  For strategy: FS or HS  message is sent</i></p> <p>Trade sent.  <i>A C/CF message is sent</i></p> <p><i>For strategy: CS message is sent followed by 1 C/CF message per leg</i></p>
2	<p><u>Client:</u> Enters a Sell @99999.5000 for 15 contracts for instrument INST1.  <u>Client:</u> Enters a Buy market for 15 contracts for instrument INST1.</p> <p><i>Sends an OE message:  [Price type: M]</i></p>	<p>Order is accepted and trades completely  <i>Sends a KE message  [Status: X ]</i></p> <p>Trade Sent  <i>Sends 1 NT message</i></p> <p><i>For Strategy  Sends 1 NT message and  1 NL message per  leg</i></p>	<p>Quote or Market Depth sent.  <i>An F/FF or H/HF message is sent  For strategy: FS or HS  message is sent</i></p> <p>Trade sent.  <i>A C/CF message is sent</i></p> <p><i>For strategy: CS message is sent followed by 1 C/CF message per leg</i></p>

<b>ID #:</b> ORD-29	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Cross Order validation normal type			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 must be in 'Continuous Trading' mode 2. Instrument Book must be clear			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST1.	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>
2	<u>Client:</u> Enters a cross order within the spread Send an Cross Order through OX message	Order is accepted and traded. <i>Sends a KO message and two NT messages with Special Trade Indicator=</i>	Trade message is sent. <i>C&lt;&gt; message is sent with Price Indicator Marker ="C"</i>



		"D"	
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<b>ID #:</b> ORD-30	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Cross Order validation on a strategy			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 and instrument INST2 must be in 'Continuous Trading' mode 2. Instrument Book must be clear			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST1.	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>
2	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST2	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>
3	<u>Client:</u> Send a ON message using instrument INST1 and INST2 for creating a strategy STRAT1	<i>Sends a KN message</i>	
4	<u>Client:</u> Enters a cross order within the spread Send an Cross on the STRAT1. Order through OX message	Order is accepted and traded. <i>Sends a KO message and two NT messages and two NL messages</i>	Trade message is sent. <i>C&lt;&gt; message is sent</i>

<b>ID #:</b> ORD-31	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Cross Order Block			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 must be in 'Continuous Trading' mode 2. Instrument Book must be clear			
#	Test Steps	Expected Results	

		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST1.	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. An F/FF or H/HF message is sent
2	<u>Client:</u> Enters a cross order within the spread Send an Cross Block Order through OX message <b>Qty&gt;Block(500)</b>	Order is accepted and traded. <i>Sends a KO message and two NT messages with Special Trade Indicator="B"</i>	Trade message is sent. <i>C&lt;&gt; message is sent with Price Indicator Marker ="B"</i>

<b>ID #:</b> ORD-32	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Committed order (interbank)			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 must be in 'Continuous Trading' mode 2. Instrument Book must be clear			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST1.	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. An F/FF or H/HF message is sent
2	<u>Client:</u> Enters a committed order within the spread specifying as counter party BIT Send an OE message with Price Type='C'	Order is accepted and traded. <i>Sends a KE message</i>	
3	<u>Client:</u> Enters a committed order within the spread specifying as Client counter party	Order is accepted and traded. <i>Sends a KE message and two NT messages with Special Trade Indicator = "T"</i>	Trade message is sent. <i>C&lt;&gt; message is sent with Price Indicator Marker = "T"</i>

<b>ID #:</b> ORD-33	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Committed order (interbank) on a strategy			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 and instrument INST2 must be in 'Continuous Trading' mode 2. Instrument Book must be clear			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST1.	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>
2	<u>Client:</u> Enters two regular Buy/Sell orders in order to create a spread for instrument INST2	Orders are accepted and booked and spread is created. <i>Sends a KE message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>
3	<u>Client:</u> Send a ON message using instrument INST1 and INST2 for creating a strategy STRAT1	<i>Sends a KN message</i>	
4	<u>Client:</u> Enters a committed order within the spread specifying as counter party BIT Send an OE message with Price Type='C'	Order is accepted and traded. <i>Sends a KE message and two NT messages with Special Trade Indicator = "T"</i>	Trade message is sent. <i>C&lt;&gt; message is sent with Price Indicator Marker = "T"</i>

<b>ID #:</b> ORD-34	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Committed Block order (interbank)			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 must be in 'Continuous Trading' mode 2. Instrument Book must be clear			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters two regular	Orders are accepted and	Quote or Market Depth sent.

	Buy/Sell orders in order to create a spread for instrument INST1.	booked and spread is created. <i>Sends a KE message</i>	An F/FF or H/HF message is sent
2	<u>Client:</u> Enters a committed order within the spread specifying as counter party BIT Send OE message With Price Type ='C' Qty>500	Order is accepted and traded. <i>Sends a KE message</i>	
3	<u>Client:</u> Enters a committed order within the spread specifying as Client counter party	Order is accepted and traded. <i>Sends a KE message and two NT messages with Special Trade Indicator = "K"</i>	Trade message is sent. <i>C&lt;&gt; message is sent with Price Indicator Marker = "K"</i>

<b>ID #:</b> ORD-35	<b>Type:</b> Order Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> While connected orders			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. Group for instrument INST1 must be in 'Continuous Trading' mode			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular order specifying in duration type = W	Order is accepted. <i>Sends a KE message with Order Status = " "</i>	<i>F/FF or H/HF messages Sent</i>
2	<u>Client:</u> Disconnection and re connection on the systems	Order status changed to I (EliminatedOnDisconnect) as soon as the Client perform re connection	<i>F/FF or H/HF messages Sent</i>

## 4.5 Order Cancellation Test Cases

<b>ID #:</b> CXL-01	<b>Type:</b> Order Cancellation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Cancelling an order.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Sell order 10@2.20 for instrument INST1. <i>Sends an OE message</i>	Order is booked. <i>Sends a KE message:</i> [Order ID: x] [Order Status: ]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
2	<u>Client:</u> Cancels the previous order. <i>Sends an XE message:</i> [Cancelled Order ID: x]	Order is cancelled. <i>Sends a KZ message</i> [Order Status: "A"]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

<b>ID #:</b> CXL-02	<b>Type:</b> Order Cancellation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Cancelling an order by Market Control.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Sell order 10@2.20 for instrument INST1. <i>Sends an OE message</i>	Order is booked. <i>Sends a KE message:</i> [Order ID: x] [Status: ]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
2	<u>BIT:</u> Cancels the previous order. <i>Sends an XE message:</i> [Cancelled Order ID: x]	Order is cancelled. <i>Sends a NZ message</i> [Order Status: "M"]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

<b>ID #:</b> CXL-03	<b>Type:</b> Order Cancellation	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Cancelling a partially filled order.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Buy order 30@2.50 for instrument INST1. <i>Sends an OE message</i>	Order is booked. <i>Sends a KE message:</i> <i>[Order ID: x]</i> <i>[Status: " "]</i> Trade 10@2.50 <i>Sends an NT message</i>  <i>For Strategy</i> <i>Sends 1 NT message and</i> <i>1 NL message per leg</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>  Trade sent. <i>A C/CF message is sent</i>  <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i>
2	<u>Client:</u> Cancels the previous order. <i>Sends an XE message:</i> <i>[Cancelled Order ID: x]</i>	The remaining quantity of the order is cancelled. <i>Sends a KZ message</i> <i>[Status: "A"]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

## 4.6 Order Modification Test Cases

<b>ID #:</b> MOD-01	<b>Type:</b> Order Modification	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Modifying the price of an order; quantity remains unchanged.			
<b>Comments:</b> The order is cancelled to “clear” the testing environment.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Sell order 20@2.25. <i>Sends an OE message</i>	Order is booked. <i>Sends a KE message:</i> [Order ID: x [Status: ]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
2	<u>Client:</u> Modifies the previous order 2000@2.20. <i>Sends an OM message:</i> [Quantity Sign: =] [Quantity: 10] [Modified Order ID: x]	Order is booked. <i>Sends a KM message:</i> [Order ID: y] [Status: ]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
3	<u>Client:</u> Cancels the order. <i>Sends an XE message:</i> [Cancelled Order ID: y]	Order is cancelled. <i>Sends a KZ message:</i> [Status: A]	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

<b>ID #:</b> MOD-02	<b>Type:</b> Order Modification	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Modifying the quantity (absolute) of an order.			
<b>Comments:</b> The order is cancelled to “clear” the testing environment.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Sell order 1@2.25. <i>Sends an OE message</i>	Order is accepted and booked at 1@2.25. <i>Sends a KE message:</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>

		[Order ID: x] [Status: “ ”]	For strategy: FS or HS message is sent
2	<u>Client:</u> Modifies the previous order 20@2.25. Sends an OM message: [Quantity Sign: =] [Quantity: 20] [Modified Order ID: x]	Order is booked. Modification is accepted and the Quantity is now 20. Sends a KM message: [Order ID: y] [Status: “ ”]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent
3	<u>Client:</u> Cancels the order. Sends an XE message: [Cancelled Order ID: y]	Order is cancelled. Sends a KZ message: [Status: A]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

<b>ID #:</b> MOD-03	<b>Type:</b> Order Modification	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
<b>Description:</b> Modifying the quantity (absolute) and the price of a partially filled order.			
<b>Comments:</b> The order is cancelled to “clear” the testing environment.			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 10@2.50].			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Buy order 21@2.50. Sends an OE message	Order is accepted and booked at 21@2.50. Sends a KE message: [Order ID: x] [Status: “ ”]  Trade 10@2.50 Sends an NT message (partial fill)  For Strategy Sends 1 NT message and 1 NL message per leg	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent  Trade sent. A C/CF message is sent  For strategy: CS message is sent followed by 1 C/CF message per leg
2	<u>Client:</u> Modifies the previous order 25@2.60. Sends an OM message: [Quantity Sign: =] [Quantity: 25] [Modified Order ID: x]	Order is booked. Modification is accepted and the Quantity is now 25 and price is 2.60. Sends a KM message: [Order ID: y] [Status: “ ”]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent



3	<u>Client:</u> Cancels the order. Sends an XE message: [Cancelled Order ID: y]	Order is cancelled. Sends a KZ message [Status: "A"]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent
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<b>ID #:</b> MOD-04	<b>Type:</b> Order Modification	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> N
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**Description:** Modifying an order that has been previously modified and partially filled.

**Comments:** The order is cancelled to "clear" the testing environment.

**Prerequisites**

The market for instrument INST1 must be set to [10@2.00 – 10@2.50].

#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a regular Buy Order 21@2.50. Sends an OE message	Order is accepted and booked at 21@2.50. Sends a KE message: [Order ID: x] [Status: ""] Trade 10@2.50 Sends an NT message (partial fill) For Strategies, sends NL message per leg	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent  Trade sent. A C/CF message is sent For strategy: CS message is sent followed by 1 C/CF message per leg
2	<u>Client:</u> Modifies the previous order 21@2.50. Sends an OM message: [Quantity Sign: =] [Quantity: 21] [Modified Order ID: x]	Order is booked. Modification is accepted and the Quantity is now 21 and price is 2.50. Sends a KM message: [Order ID: y] [Status: ""]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent
3	<u>Client:</u> Modifies the previous order 21@2.40. Sends an OM message: [Quantity Sign: =] [Quantity: 21] [Modified Order ID: y]	Order is booked. Modification is accepted and the Quantity is now 21 and price is 2.40. Sends a KM message: [New Order ID: z] [Status: ""]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent
4	<u>Client:</u> Cancels the order. Sends an XE message: [Cancelled Order ID: z]	Order is cancelled. Sends a KZ message [Status: A ""]	Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent

<b>ID #:</b> MOD-05	<b>Type:</b> Order Modification	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Modifying a Market Top order and assigning it a limit price.			
<b>Comments:</b> The order is cancelled to "clear" the testing environment. <b>(Conditional to ORD01)</b>			
<b>Prerequisites</b>			
The market for instrument INST1 must be set to [10@2.00 – 12@2.50]; no other orders must be in the book.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Buy Market order for 20 Contracts. <i>Sends an OE message:  [Price type: M]</i>	Sends a KE message: <i>[Order ID: x]  [Status: " "]</i> Trade 12@2.50 and the remaining 8@2.50 is booked. <i>Sends an NT message (partial fill)  For Strategy  Sends 1 NT message and  1 NL message per leg</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent  For strategy: FS or HS message is sent</i>  Trade sent. <i>A C/CF message is sent  For strategy: CS message is sent followed by 1 C/CF message per leg</i>
2	<u>Client:</u> Modifies the previous order 9@2.40. <i>Sends an OM message:  [Quantity Sign: +]  [Quantity: 1]  [Price type: L]  [Modified Order ID: x]</i>	Order is booked. Modification is accepted and the Quantity is now 9 and price is 2.40. <i>Sends a KM message:  [Order ID: y]  [Status: " "]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent  For strategy: FS or HS message is sent</i>
3	<u>Client:</u> Cancels the previous order. <i>Sends an XE message:  [Cancelled Order ID: y]</i>	Order is cancelled. <i>Sends a KZ message  [Status: "A"]</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent  For strategy: FS or HS message is sent</i>

## 4.7 Request for Quote Test Cases

<b>ID #:</b> RFQ-01	<b>Type:</b> Request for Quote	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Sending a Request for Quote message.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
None.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters a Request for Quote for the instrument INST1 for any quantity. <i>Sends an RQ message</i>	Request for Quote is accepted. <i>Sends a KO message</i>	Request for Quote sent. <i>A D/DF message is broadcasted.</i>

<b>ID #:</b> RFQ-02	<b>Type:</b> Request for Quote	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Responding to a Request for Quote message.			
<b>Comments:</b>			
<b>Prerequisites</b>			
1. No market for instrument INST1. 2. Client is connected.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	BIT: Enters a Request for Quote for the instrument INST1 for any quantity.	Request for Quote is accepted.	Request for Quote message received and dispatched to external participants on the HSVF Market feed.  Request for Quote sent. <i>A D/DF message is sent.</i>
2	Client: Responds by posting a market for instrument INST1. <i>Sends an OE or a Q&lt;i&gt;</i>	Market is accepted. <i>Sends a KE or an LA message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>

## 4.8 Bulk Quote Test Cases

<b>ID #:</b> BUQ-01	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> N
<b>Description:</b> Entering quotes.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. No market for instrument INST1. 2. Participant must be configured as Market Maker on group GRP1. 3. Participant must send Clearing Data message BD ( for traderID/GroupID )			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters 2 quotes (1 bid and 1 ask) on INST1, Bid = 10@1.00, Ask=10@1.20. <i>Sends a BD message (if not already done)</i> <i>Sends a Q&lt;i&gt; message</i>	Quotes are accepted and booked. <i>Sends a KD message</i> <i>Sends an LA message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
2	Client Enters a regular Sell order 5@0.90 for instrument INST1.	Order is accepted Trade 5@1.00. <i>Sends an NT message</i> <i>For Strategy</i> <i>Sends 1 NT message and 1 NL message per leg</i> The market is now [5@1.00 – 10@1.20].	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>  Trade sent. <i>A C/CF message is sent</i> <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i>

<b>ID #:</b> BUQ-02	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> N
<b>Description:</b> Modifying the price on quotes when some have been rejected.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. No market for instruments in group GRP1. 2. Instrument INST10 has to be forbidden. 3. Participant must be configured as Market Maker on group GRP1. 4 Participant must send Clearing Data message BD ( for traderID/GroupID )			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)

1	<p><u>Client:</u> Enters quotes for all instruments of GRP1. At least 101 instruments must be quoted on both sides with bids of 1000@100.00 and asks of 900@100.50. Only one bulk quote message must be sent.</p> <p><i>Sends a Q&lt;i&gt; message</i></p>	<p>All quotes are accepted and booked except the 2 on the forbidden instrument. The markets for selected instruments in group GRP1 are now [1000@100.00 – 900@100.50].</p> <p><i>Sends an LA message: [Number of quotes in error: 002] [Error code: 1004]</i></p>	<p>Quote or Market Depth sent. <i>Several F/FF or H/HF messages are broadcasted</i></p> <p><i>For strategy: Several FS or HS message are broadcasted</i></p>
2	<p><u>Client:</u> Modifies the price of all quotes previously accepted.</p> <p><i>Sends a Q&lt;i&gt; message</i></p>	<p>Quotes are modified. No error message is returned. Market is now: [1000@100.10 – 900@100.30]</p> <p><i>Sends an LA message</i></p>	<p>Quote or Market Depth sent. <i>Several F/FF or H/HF messages are broadcasted</i></p> <p><i>For strategy: Several FS or HS message are broadcasted</i></p>

<b>ID #:</b> BUQ-03	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinate d Test:</b> N
<b>Description:</b> Modifying the quantity for quotes.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. No market for instruments in group GRP1.</li> <li>2. Participant must be configured as Market Maker on group GRP1.</li> <li>3. Participant must send Clearing Data message BD ( for traderID/GroupID )</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u> Enters 4 quotes (2 bid and 2 ask) on instruments of group GRP1, Bid = 10@1.00, Ask = 10@1.20.</p> <p><i>Sends a Q&lt;i&gt; message</i></p>	<p>Quotes are accepted and booked. The markets are now: INST1: [10@1.00 – 10@1.20] INST2: [10@1.00 – 10@1.20]</p> <p><i>Sends an LA message</i></p>	<p>Quote or Market Depth sent. <i>Two F/FF or H/HF messages are sent</i></p> <p><i>For strategy: Two FS or HS message are sent</i></p>
2	<p><u>Client</u> Enters a regular Buy order 10@1.20 for instrument INST1.</p>	<p>Order is accepted. Trade 10@1.20.</p> <p><i>Sends an NT message For Strategy Sends 1 NT message and 1 NL message per leg</i></p>	<p>Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i></p> <p><i>For strategy: FS or HS message is sent</i></p> <p>Trade sent.</p>

		INST1: [10@1.00 – ] INST2: [10@1.00 – 10@1.20]	A C/CF message is sent For strategy: CS message is sent followed by 1 C/CF message per leg
3	<u>Client</u> : Sets quantities to 20 on both sides of INST1 and INST2. <i>Sends a Q&lt;i&gt; message with [Quote Qty: +20] for the Ask side of INST1 and [Quote Qty: +10] for the other three quotes.</i>	Quotes are modified. Market are now INST1: [20@1.00 – 20@1.20] INST2: [20@1.00 – 20@1.20] <i>Sends an LA message</i>	Quote or Market Depth sent. <i>Two F/FF or H/HF messages are sent</i>  <i>For strategy: Two FS or HS message are sent</i>

<b>ID #:</b> BUQ-04	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> N
<b>Description:</b> Cancelling all quotes (Global Cancellation, formerly known as “Panic Quote”).			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. No market for instruments in group GRP1.</li> <li>2. Participant must be configured as Market Maker on group GRP1.</li> <li>3. Participant must send Clearing Data message BD ( for traderID/GroupID )</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client</u> : Enters 40 quotes (20 bid and 20 ask) on instruments of group GRP1, Bid = 10@1.00, Ask = 10@1.20. <i>Sends a Q&lt;i&gt; message</i>	Quotes are accepted and booked. The markets are now [10@1.00 – 10@1.20] for all instruments. <i>Sends an LA message</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20)FS or HS message are sent</i>
2	<u>Client</u> Enters a regular Sell order 10@1.00 for instrument INST1.	Order is accepted. Trade 10@1.00. <i>Sends an NT message</i> <i>For Strategy</i> <i>Sends 1 NT message and 1 NL message per leg</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>  Trade sent. <i>A C/CF message is sent</i> <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i>
3	<u>Client</u> : Cancels all quotes with a GC message. <i>Sends a GC message</i>	Quotes are cancelled. Market for instrument INST1 is now [0@0.00 – 10@1.00]. <i>Sends a KG message</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i> <i>For strategy: Twenty (20)FS or HS message are sent</i>

<b>ID #:</b> BUQ-05	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Handling unsolicited cancellation of all quotes (done by the Market Operation Center.).			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. No market for instruments in group GRP1. 2. Participant must be configured as Market Maker on group GRP1. 3. Participant must send Clearing Data message BD (for traderID/GroupID )			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<b>Client:</b> Enters 40 quotes (20 bid and 20 ask) on instruments of group GRP1, Bid = 10@1.00, Ask = 10@1.20. <i>Sends a Q&lt;i&gt; message</i>	Quotes are accepted and booked. <i>Sends an LA message</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20) FS or HS message are sent</i>
2	<b>Client:</b> Enters a regular Buy order 10@1.30 for instrument INST1.	Order is accepted and is traded against the booked quotes. Trade 10@1.20. <i>Sends an NT message</i> <i>For Strategy</i> <i>Sends 1 NT message and</i> <i>1 NL message per leg</i>	Trade sent. <i>A C/CF message is sent</i> <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i>  Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
3	<b>BIT:</b> Cancels all quotes for the participant.	Quotes are cancelled. <i>Sends an NP message (cancellation reason: M)</i>  <i>*cancellation reason could be filled "S" in case of cancellation by the system.</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20) FS or HS message are sent</i>

<b>ID #:</b> BUQ-06	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> N
<b>Description:</b> Handling unsolicited cancellation of all quotes (done by Trader).			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. No market for instruments in group GRP1. 2. Participant must be configured as Market Maker on group GRP1. 3. Participant must be enable for Global Cancellation			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters 40 quotes (20 bid and 20 ask) on instruments of group GRP1, Bid = 10@1.00, Ask = 10@1.20. <i>Sends a Q&lt;i&gt; message</i>	Quotes are accepted and booked. <i>Sends an LA message</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20) FS or HS message are sent</i>
2	<u>Client:</u> (cancelation made by MS) Cancels all quotes for the participant.	Quotes are cancelled. <i>Sends an NP message (Quote cancellation reason: M –Cancelled By Market Control)</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20) FS or HS message are sent</i>

<b>ID #:</b> BUQ-07	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> N
<b>Description:</b> Handling unsolicited cancellation of all quotes ( <b>CancelledByCircuitBreaker</b> ).			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. No market for instruments in group GRP1. 2. Participant must be configured as Market Maker on group GRP1. 3. Participant must send Clearing Data message BD (for traderID/GroupID ) 4. Two opposite orders with Price 10 must be traded			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client</u> Price 20 XLow<YLow<ZLow<Y High<20<ZHigh<XHig h		
2	<u>Client</u> Enters a regular	Order is accepted and	Quote or Market Depth sent.



	Buy order 100@20 for instrument INST1.	booked. <i>Sends 1 an KE message</i>	Twenty (20) F/FF or H/HF messages are sent  For strategy: Twenty (20) FS or HS message are sent
3	<u>Client:</u> Enters 100 quotes (50 bid and 50 ask) on instruments of group GRP1, Bid = 50@19.5, Ask = 50@20. <i>Sends a Q&lt;i&gt; message</i>	Quotes are deleted due to circuit breaker ( <i>NP sent with cancellation reason: C</i> ) <i>NI Message with Instrument state changes in Suspended as 'S'</i> After 1minute <i>NI Message with Instrument Status 'N'</i> .	Trade sent. A C/CF message is sent For strategy: CS message is sent followed by 1 C/CF message per leg  Quote or Market Depth sent. An F/FF or H/HF message is sent with Status "F" For strategy: FS or HS message is sent with Status "F"  After 1minute for H/HF or F/FF message is sent with Status "T".

<b>ID #:</b> BUQ-08	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> N
<b>Description:</b> Handling unsolicited cancellation of all quotes ( <b>EliminatedOnDisconnect</b> )			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. No market for instruments in group GRP1.</li> <li>2. Participant must be configured as Market Maker on group GRP1.</li> <li>3. Participant must send Clearing Data message BD (for traderID/GroupID )</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters quotes Buy and Sell quotes.	Quotes are accepted and booked. <i>Sends a KD message</i> <i>Sends an LA message</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20) FS or HS message are sent</i>
2	Request for Disconnection by the Client Send TD Message	<i>Receives TL Message and Client gets disconnected and quotes are removed.</i>	Trade sent. <i>A C/CF message is sent</i> <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i>  Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i>

			<i>For strategy: FS or HS message is sent</i>
3	Client: Re-connection on the system	<i>Quotes are deleted (NP sent with Quote cancellation reason: I (EliminatedOnDisconnect)</i>	<p>Trade sent. A C/CF message is sent For strategy: CS message is sent followed by 1 C/CF message per leg</p> <p>Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent</p>

<b>ID #:</b> BUQ-09	<b>Type:</b> Bulk Quote	<b>Requirement:</b> Mandatory for Market Makers	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Handling unsolicited cancellation of all quotes ( <b>B : EliminatedOutofLimits</b> ).			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>1. No market for instruments in group GRP1.</li> <li>2. Participant must be configured as Market Maker on group GRP1.</li> <li>3. Participant must send Clearing Data message BD (for traderID/GroupID)</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	Client: Enters 100 quotes (50 bid and 50 ask) on instruments of group GRP1, Bid = 50@20, Ask = 50@20. <i>Sends a Q&lt;i&gt; message</i>	Quotes are accepted and booked. <i>Sends a KD message</i> <i>Sends an LA message</i>	Quote or Market Depth sent. <i>Twenty (20) F/FF or H/HF messages are sent</i>  <i>For strategy: Twenty (20) FS or HS message are sent</i>
2	BIT: Change parameters x (ex: reference price) for instrument INST1.	<i>Quotes are deleted due to of limit (NP sent with Quote cancellation reason: B)</i>	<p>Trade sent. A C/CF message is sent For strategy: CS message is sent followed by 1 C/CF message per leg</p> <p>Quote or Market Depth sent. An F/FF or H/HF message is sent For strategy: FS or HS message is sent</p>

## 4.9 Trade Management Test Cases

<b>ID #:</b> TRD-01	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Handling many fills for the same order.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
1. The market for instrument INST1 must be set to [12@2.00 – 10@2.50]. 2. Group for instrument INST1 must be in 'Continuous Trading' mode.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Enters a Sell order or a quote for instruments INST1 75@2.40. <i>Sends an OE message</i>	Order is accepted. <i>Sends a KE or an LA message</i>	Quote or Market Depth sent. <i>An F/FF or H/HF message is sent</i> <i>For strategy: FS or HS message is sent</i>
2	<u>BIT:</u> Enters 10 Buy orders for instrument: INST1 2@MKT , 3@MKT, 4@MKT, 5@MKT, 6@MKT, 7@MKT, 8@MKT, 9@MKT, 10@MKT, 11@MKT.	10 Trades: 2@2.40, 3@2.40, 4@2.40, 5@2.40, 6@2.40, 7@2.40, 8@2.40, 9@2.40, 10@2.40, 11@2.40. <i>Sends 10 NT messages</i>  <i>For each of the 10 strategies</i> <i>Sends 1 NT message and 1 NL message per leg</i>  Market for instrument INST1 is now [12@2.00 – 10@2.40].	Trade sent. <i>A C/CF message is sent for each trade</i>  <i>For strategy: CS message is sent followed by 1 C/CF message per leg for each strategy trade</i>

<b>ID #:</b> TRD-02	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Handling manual cancellation of a regular trade by the Market Operation Center.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
Execution of test case TRD-01			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>BIT</u> : Manually cancels the first and the last Trades from Test Case TRD-01 (2@2.40 and 11@2.40).	<p>The 2 trades are cancelled. <i>Sends 2 NX messages</i></p> <p><i>For each of the 2 Strategies</i> <i>Sends 1 NX message and 1 NY message per leg</i></p>	<p>Trade Cancellation and Summary. <i>Two (2) I/IF and N/NF messages are sent</i></p> <p><i>For Strategy: Two (2) IS and NS messages are sent</i></p>

<b>ID #:</b> TRD-03	<b>Type:</b> Trade Management	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> Y
<b>Description:</b> Handling manual trade creation and cancellation.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>BIT</u> : Creates a manual trade for instrument INST1 by using the TraderID of the client on both sides of the trade.	<p>A first trade is created. <i>Sends one NT message</i> <i>For Strategy</i> <i>Sends 1 NT message and 1 NL message per leg</i></p>	<p>Trade sent. <i>A C/CF message is sent.</i> <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i></p>
2	<u>BIT</u> : Creates a manual trade for instrument INST1 by using the TraderID of the client on one side and a different TraderID for the client on the opposite side of the trade.	<p>A second trade is created <i>Sends one NT message</i> <i>For Strategy</i> <i>Sends 1 NT message and 1 NL message per leg</i></p>	<p>Trade sent <i>A C/CF message is sent</i> <i>For strategy: CS message is sent followed by 1 C/CF message per leg</i></p>

3	<p><b>BIT:</b> Cancel trades created in Steps 1 and 2.</p>	<p>Trades are cancelled.  <i>2 NX messages are sent.</i></p> <p><i>For each of the 2 Strategies</i>  <i>Sends 1 NX message and 1 NY message per leg</i></p>	<p>Trades Cancellation.  <i>//IF and N/NF messages sent</i></p> <p><i>For Strategy: IS and NS messages are sent</i></p>
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#### 4.10 Market Maker Protection Test Cases

<b>ID #:</b> MMT-01	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory for MM	<b>Co-ordinated Test:</b> N
<b>Description:</b> Max Volume: is designed to protect market making participants from "excessive" trades			
<b>Comments:</b> Enabled by default for all Market Makers			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>For this test one MM (Participant) and one TRADER (Exchange Controlled) are needed.</li> <li>Set MM protection Max Volume to 100 ON instrument A of Group Z (in BD message)</li> <li>Set MM protection to Advanced (in RP message)</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Buy 150 of A @ Price P Sell 150 of A @ Price P + 1 Tick <i>Sends an Qi message:</i>	Quote is accepted . <i>Sends a LA message</i>	
2	<u>Client:</u> Sell 100 of A @ Market Price <i>Sends an OE message</i>	Trade is done <i>Sends 1 NT message is sent</i> <i>An NP message is sent</i> .	

<b>ID #:</b> MMT-02	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory for MM	<b>Co-ordinated Test:</b> N
<b>Description:</b> Delta Volume: is designed to protect market making participants from "excessive" trades			
<b>Comments:</b> Enabled by default for all Market Makers			
<b>Prerequisites</b>			
<ol style="list-style-type: none"> <li>Set MM protection Max Volume to 2000</li> <li>Set MM protection Max Delta to 1000</li> <li>Set MM protection to Advanced</li> </ol>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Quote on Instrument A of Group Z:	Quote is accepted . <i>Sends a LA message</i>	

	<ul style="list-style-type: none"> <li>- Buy 100 of A @ Price P</li> <li>- Sell 100 of A @ Price P + 1 Tick</li> </ul> <p><i>Sends an Qi message:</i></p>		
2	<p><u>Client:</u> enters</p> <p>Sell 100 of A @ Market Price</p> <p><i>Sends an OE message</i></p>	<p>Trade is done</p> <p><i>Sends 1 NT message is sent</i></p> <p><i>An NP message is sent</i></p>	

<b>ID #:</b> MMT-03	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory for MM	<b>Co-ordinated Test:</b> N
<b>Description:</b> Underlying price message (IX) subscription and verification			
<b>Comments:</b> Enabled by default for all Market Makers			
<b>Prerequisites</b>			
Customer should be logged in before 9.00 or 15:45 Milan Time (CET)			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u></p> <p>Send a TC message before subscribing a IX message</p>	<p><i>Login accepted</i></p> <p><i>TK message is sent</i></p>	
2	<p><u>Client:</u></p> <p>Send a BD message on the instrument group</p>	<p><i>KD message is sent</i></p>	
3		<p><i>When the underlying on the cash market moves to continuous trading, the IX message is disseminated</i></p>	

<b>ID #:</b> MMT-04	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory for MM	<b>Co-ordinated Test:</b> N
<b>Description:</b> Underlying price message (MU) subscription and verification			
<b>Comments:</b> Enabled by default for all Market Makers			
<b>Prerequisites</b>			
Customer should be logged in before 9.00 or 15:45 Milan Time (CET)			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Send a TC message before subscribing a MU message	<i>Login accepted TK message is sent</i>	
2	<u>Client:</u> Send a BD message on an stock or index options group	<i>KD message is sent</i>	
3		<i>When the underlying on the cash market moves to continuous trading, the MU message is disseminated</i>	



## 4.11 Market Maker Alarms

<b>ID #:</b> ALR-01	<b>Type:</b> Trade Management	<b>Requirement:</b> Mandatory for Market Maker	<b>Co-ordinated Test:</b> N
<b>Description:</b>			
<b>Comments:</b> For this test one MM (Participant) and one TRADER (Exchange Controlled) are needed.			
<b>Prerequisites</b>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><b>Client:</b> The MM will Quote on Instruments belonging to Group AA fulfilling its spread and volume obligation</p> <p><i>Sends an Oi message:</i></p>	<p>Order is accepted</p> <p><i>Sends an LA message</i></p> <p>No market makers alarms are generated</p>	H/HF or F/FF messages sent.
2	<p><b>Client:</b> The MM will Quote on Instruments belonging to Group AA not fulfilling its spread obligations</p>	<p>Order is accepted</p> <p><i>Sends an LA message</i></p> <p><i>Sail Messages MM is received after 2 minutes advising that spread obligations are not fulfilled</i></p>	H/HF or F/FF messages sent.
3	<p><b>Client:</b> The MM will Quote on Instruments belonging to Group AA not fulfilling its volume obligations</p>	<p>Order is accepted</p> <p><i>Sends an LA message</i></p> <p><i>Sail Messages MM is received after 2 minutes advising that spread obligations are not fulfilled</i></p>	H/HF or F/FF messages sent.
4	<p><b>Client:</b> The MM will not Quote on any Instruments belonging to Group AA</p>	<p><i>Sail Messages MM is received after 2 minutes advising that prices are missing Q</i></p>	H/HF or F/FF messages sent.

## 4.12 Drop Copy Test Case

<b>ID #:</b> DC-01	<b>Type:</b> Drop Copy extended messages	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> It allows customers to manage orders entered by other traders in the firm			
<b>Comments:</b> Drop copy user type needs to be used			
<b>Prerequisites</b>			
Customer must connect two users: <ul style="list-style-type: none"> <li>- One normal order routing user;</li> <li>- One Drop Copy user;</li> </ul>			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<p><u>Client:</u> Enter orders with normal OR user;</p> <ul style="list-style-type: none"> <li>- modify some of these orders</li> <li>- cancels some of those orders leaving some other orders active on the market</li> </ul> <p><i>Sends Internal messages cancellation for</i></p>	<p>Order is accepted and is not on the book.</p> <p><i>Sends a KE message [Status: "I "]</i></p> <p><i>In the drop copy connection these messages will be received in the extended format, please verify that in the messages KM , KE, KZ and NZ you can see additional field:</i></p> <p><i>Price Type</i></p> <p><i>Previous Displayed Quantity</i></p> <p><i>Previous Booked Price</i></p> <p><i>Displayed Quantity</i></p> <p><i>Filler String</i></p> <p><i>System Best Bid Price</i></p> <p><i>System Best Ask Price</i></p> <p><i>Filler String</i></p> <p><i>Filler String</i></p> <p><i>End of Message Block</i></p> <p><i>Special Price Term</i></p> <p><i>Additional Price</i></p> <p><i>Quantity Term</i></p> <p><i>Additional Quantity</i></p> <p><i>Guaranteed Quantity</i></p> <p><i>Duration Type</i></p> <p><i>GTD Date</i></p> <p><i>Opposite Firm</i></p> <p><i>Filler String</i></p> <p><i>Order Type</i></p> <p><i>Previous Order ID</i></p>	

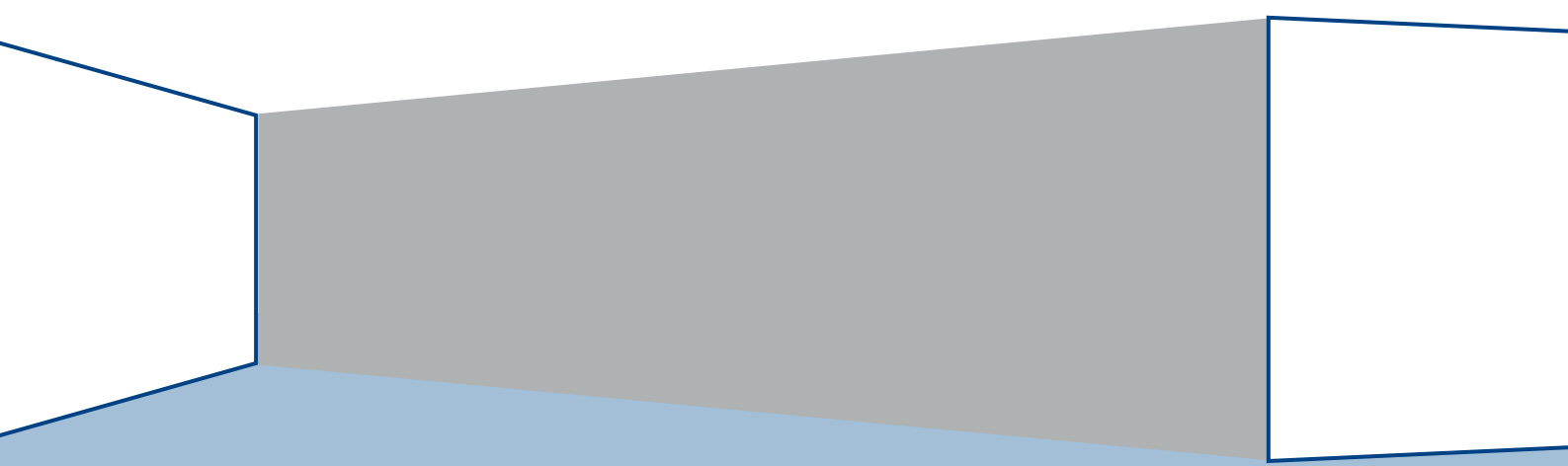
		<i>Linked Quantity</i> <i>Filler String</i> <i>Filler String</i> <i>Remaining Quantity</i> <i>Filler String</i>	
2	<p><b>Client:</b>  Perform the following operation:</p> <ol style="list-style-type: none"> <li>1. Match partially an existing order</li> <li>2. Cancel an existing trade</li> <li>3. Cancel an existing trade on a leg of a Strategy trade</li> </ol> <p><i>Sends an OE message</i></p> <p><i>Sends Internal messages cancellation for trades</i></p>	<p><i>Trade is done</i>  <i>Sends 1 NT message is sent</i>  <i>In the drop copy connection these messages will be received in the extended format, please verify that in the messages</i>  <i>NT: Execution Notice</i>  <i>NL: Leg Execution Notice</i>  <i>NX: Execution Cancellation Notice</i>  <i>NY: Leg Execution Cancellation Notice</i></p> <p><i>The following field are displayed:</i>  <i>Previous Booked Quantity</i>  <i>Previous Booked Price</i>  <i>Displayed Quantity</i>  <i>Order Type</i>  <i>Liquidity Status</i>  <i>End of Message Block</i>  <i>Remaining Quantity</i>  <i>Filler String</i>  <i>Timestamp Date</i>  <i>Price Variation</i>  <i>Net Change</i>  <i>Open Price</i>  <i>High Price</i>  <i>Low Price</i>  <i>Last Price</i>  <i>Opening trade</i>  <i>Filler String</i>  <i>Filler String</i>  <i>Filler String</i>  <i>Internal Market Bid</i>  <i>Internal Market Ask</i>  <i>OppositeMsgType</i>  <i>Original Price</i>  <i>Special Price Term</i>  <i>Additional Price</i>  <i>Additional Quantity Type</i>  <i>Additional Quantity</i>  <i>Duration Type</i></p>	

		<i>GTD Date</i> <i>Filler String</i> <i>Clearing Firm</i> <i>Connection ID</i> <i>Exchange ID</i> <i>OrderTradingMode</i> <i>OrderTimeStamp</i> <i>Strategy Group</i> <i>Strategy Instrument</i> <i>Strategy Verb</i> <i>Strategy Trade Number</i> <i>Leg Number</i> <i>MatchNumber</i> <i>NumberInMatch</i>	
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### 4.13 User Defined Strategies (FLEXCO)

<b>ID #:</b> FLX01	<b>Type:</b> New Strategy Instrument Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> New Strategy Creation.			
<b>Comments:</b> None.			
<b>Prerequisites</b>			
None.			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Send ON message specifying the Number of legs and the Instruments	Sends NI and KN Messages <i>Creation Status = 'C'</i>	<i>Sends JS/NS/HS messages</i>

<b>ID #:</b> FLX02	<b>Type:</b> New Strategy Instrument Creation	<b>Requirement:</b> Optional	<b>Co-ordinated Test:</b> N
<b>Description:</b> Existed Strategy Modification			
<b>Comments:</b> Strategy Already Exists and the System will modify			
<b>Prerequisites</b>			
Execution of test case FLX01			
#	Test Steps	Expected Results	
		Trading Engine Responses (SAIL)	Market Information (HSVF)
1	<u>Client:</u> Send ON message specifying the Number of legs and the Instruments	Sends NI and KN Messages <i>Creation Status = 'M'</i>	<i>Sends JS/NS/HS messages</i>



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