

Member Access using UTP-DIRECT protocol NYSE Euronext Testing Guide

January 2009 – V 0.5

VERSION HISTORY

Version Number	Date	Source Documents Used	Reasons for issuing a New Version	Sections changed
V 0.5	9 January 2009			-

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I- SLE CONNECTIVITY

CYCLE C01: LOGON MANAGEMENT

CYCLE C02: RESTART MANAGEMENT

CYCLE C03: RETRANSMISSION MANAGEMENT

CYCLE C04: ADMINISTRATIVE MESSAGES MANAGEMENT

CYCLE C05: CCG BINARY FAIL-OVER MANAGEMENT

CYCLE C01: LOGON MANAGEMENT

CYCLE OBJECTIVES:

This cycle tests SLE ability to receive and interpret the messages sent when a log-on attempt fails.

CYCLE PREPARATION:

- Exchange ensures that the SLE is logged off.
- Customers check their connections and make sure that the SLE is not logged on.

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. Logon Failure due to invalid sequence number.	Customer initiates an SLE logon with a lastsequum higher than expected.	<ul style="list-style-type: none"> • SLE should interpret correctly logon reject. SLE should not keep retrying as long as customer has not corrected the problem.
2. Logon Failure due to invalid SLE Id.	Customer initiates an SLE logon with an invalid SLE Id.	<ul style="list-style-type: none"> • SLE should interpret correctly logon reject. SLE should not keep retrying as long as customer has not corrected the problem.
3. Logon Failure due to port mismatch.	Customer initiates an SLE logon with using port of different SLE. (Applicable only if customer owns several SLE).	<ul style="list-style-type: none"> • SLE should interpret correctly logon reject. SLE should not keep retrying as long as customer has not corrected the problem.
4. Logon Failure due to already existing connection.	Customer initiates a second SLE logon after already having established a first place logon with the same SLE ID.	<ul style="list-style-type: none"> • SLE should interpret correctly logon reject. SLE should not keep retrying as long as customer has not corrected the problem.

CYCLE DETAILED INSTRUCTIONS:

UNIT 1: LOGON FAILURE DUE TO INVALID SEQUENCE NUMBER

INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to begin test.		
Customer	Customer initiates an SLE logon with LastMsgSeqNum higher than last received.	SLE ID valid. LastMsgSeqNum higher than last message received.	Logon (A). Logon Reject (j): field RejCode.

COMPLETION CRITERIA:

- SLE receives and interprets logon reject. SLE should not keep retrying as long as customer has not corrected the problem.

UNIT 2: LOGON FAILURE DUE TO INVALID SLE ID
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to Begin the test.		
Customer	Customer initiates an SLE log-on with invalid SLE Id.	SLE ID invalid. LastMsgSeqNum equal to last message received.	Logon (A). Logon Reject (j): field RejCode.

COMPLETION CRITERIA:

- SLE receives and interprets logon reject. SLE should not keep retrying as long as customer has not corrected the problem.

UNIT 3: LOGON FAILURE DUE TO PORT MISMATCH (*)
INSTRUCTIONS:

(*) this test is applicable only if customer owns several connections.

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to initiate an SLE log-on.		
Customer	Customer initiates an SLE logon with a port of another SLE that he owns.	SLE ID valid. Port invalid.	Logon (A). Logon Reject (j): field RejCode.

COMPLETION CRITERIA:

- SLE receives and interprets logon reject. SLE should not keep retrying as long as customer has not corrected the problem.

UNIT 4: LOGON FAILURE DUE TO ALREADY EXISTING CONNECTION
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to initiate an SLE log-on.		
Customer	Customer initiates a first SLE log-on with valid sequence number.	SLE ID invalid. LastMsgSeqNum equal to last message received.	Logon (A).
Customer	Customer initiates a second SLE log-on with valid sequence number.	SLE ID invalid. LastMsgSeqNum equal to last message received.	Logon (A). Logon Reject (j): field RejCode.

COMPLETION CRITERIA:

- SLE receives and interprets logon reject. SLE should not keep retrying as long as customer has not corrected the problem.

CYCLE C02: RESTART MANAGEMENT

CYCLE OBJECTIVES:

This cycle tests the software's ability to restart data transmission correctly.

CYCLE PREPARATION:

- Exchange ensures that the SLE is disconnected.
- Customers check their connections and make sure that the SLE is not logged on.

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. SLE Beginning of the day restart.	Customer initiates SLE Beginning of the Day restart and then sends the first message of the day.	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives all Beginning of Day unsolicited messages. • SLE data flow correct.
2. SLE Customer initiated Logout N° 1.	Customer initiates SLE a Logout message.	<ul style="list-style-type: none"> • SLE session terminates correctly.
3. SLE Restart after Customer initiated Logout N°1.	After SLE customer initiated logout, customer initiates SLE restart. Then, Exchange sends unsolicited message.	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives unsolicited message. • SLE data flow correct.
4. SLE Customer initiated Logout N° 2.	Customer initiates SLE logout.	<ul style="list-style-type: none"> • SLE session terminates correctly. • SLE data flow correct.
5. SLE Restart after Customer initiated Logout N° 2.	After an SLE customer initiated logout, Exchange sends unsolicited message then invites customer to initiate SLE restart. Then, customer sends a message.	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives pending message. • SLE transmits message. • SLE data flow correct.
6. Exchange initiated Logout N° 1.	Exchange initiates SLE logout.	<ul style="list-style-type: none"> • SLE session terminates correctly. • SLE data flow correct.
7. SLE Restart after Exchange initiated Logout N° 1.	After an Exchange initiated logout, SLE logs on and initiates SLE connection. Exchange sends an unsolicited message. The SLE processes the message.	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives unsolicited message. • SLE transmits message. • SLE data flow correct.

8. Exchange initiated Logout N° 2.	Exchange initiates SLE logout.	<ul style="list-style-type: none"> • SLE session terminates correctly. • SLE data flow correct.
9. SLE Restart after Exchange initiated Logout N° 2.	After Exchange initiated SLE logout, Exchange sends unsolicited message then invites customer to initiate SLE restart. Then, customer sends a message.	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives pending message. • SLE transmits message. • SLE data flow correct.

CYCLE DETAILED INSTRUCTIONS:

UNIT 1: SLE BEGINNING OF THE DAY RESTART

INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE beginning of day restart.	LastMsgSeqNum equal to 0.	Logon (A).
Exchange	Exchange sends unsolicited messages.		
Customer	Customer sends 1 message.		New Order (D).
Exchange	Exchange checks reception of message.		
Exchange	Exchange checks SLE reception data flow.		.

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE transmits the first message since Beginning of the Day.
- SLE data flow correct.

UNIT 2: SLE 'CUSTOMER INITIATED' LOGOFF N° 1**INSTRUCTIONS:**

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE logged off.		
Exchange	Exchange checks SLE session terminated correctly.		

COMPLETION CRITERIA

- SLE session terminates correctly.

UNIT 3: SLE RESTART AFTER 'CUSTOMER INITIATED' LOGOUT N° 1
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE restart.	LastMsgSeqNum equal to last message received.	Logon (A).
Exchange	Exchange checks SLE restart handshaking.	LastMsgSeqNum within customer logon. LastMsgSeqNum within CCG binary logon.	Logon (A).
Exchange	Exchange sends 1 unsolicited message.	CCG bin MsgSeqNum incremented with one.	
Customer	Customer confirms reception of the unsolicited message.	SLE process the incoming message.	
Exchange	Exchange confirms SLE is up and running.		

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE receives unsolicited message.
- SLE data flow correct.

UNIT 4: SLE 'CUSTOMER INITIATED' LOGOFF N°2**INSTRUCTIONS:**

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE logged off.		
Exchange	Exchange checks SLE session terminated correctly.		

COMPLETION CRITERIA

- SLE session terminates correctly.

UNIT 5: SLE RESTART AFTER 'CUSTOMER INITIATED' LOGOUT N° 2
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange sends 1 unsolicited message.		
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE restart.	LastMsgSeqNum equal to last message received.	Logon (A).
Exchange	Exchange checks SLE restart handshaking.	LastMsgSeqNum within customer logon. LastMsgSeqNum within CCG binary logon.	Logon (A).
Customer	Customer confirms receipt of pending message.	CCG bin MsgSeqNum incremented with one.	
Customer	Client sends 1 order message.	Customer MsgSeqNum incremented with one.	New Order (D).
Exchange	Exchange confirms receipt of order message.	Exchange processes the incoming message.	
Exchange	Exchange confirms SLE is up and running.		

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE receives pending message.
- SLE sends message.
- SLE data flow correct.

UNIT 6: SLE 'EXCHANGE INITIATED' LOGOFF N° 1**INSTRUCTIONS:**

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Exchange	Exchange initiates an SLE logged off		
Customer	Customer confirms SLE session terminated correctly.		

COMPLETION CRITERIA

- SLE session terminates correctly.

UNIT 7: SLE RESTART AFTER 'EXCHANGE INITIATED' LOGOUT N° 1
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates a SLE restart.	LastMsgSeqNum equal to last message received.	Logon (A).
Exchange	Exchange checks SLE restart handshaking.	LastMsgSeqNum within customer logon. LastMsgSeqNum within CCG binary logon.	Logon (A).
Exchange	Exchange sends 1 unsolicited message.	CCG bin MsgSeqNum incremented with one.	
Customer	Customer confirms receipt of the unsolicited message.	SLE process the incoming message.	
Exchange	Exchange confirms SLE is up and running.		
Customer	Client sends 1 order message.	Customer MsgSeqNum incremented with one.	New Order (D).
Exchange	Exchange confirms receipt of order message.	Exchange processes the incoming message.	
Exchange	Exchange confirms SLE is up and running.		

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE receives unsolicited message.
- SLE data flow correct.

UNIT 8: SLE 'EXCHANGE INITIATED' LOGOFF N° 2**INSTRUCTIONS:**

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Exchange	Exchange initiates an SLE logged off		
Customer	Customer confirms SLE session terminated correctly.		

COMPLETION CRITERIA

- SLE session terminates correctly.
- SLE data flow correct.

UNIT 9: SLE RESTART AFTER 'EXCHANGE INITIATED' LOGOUT N° 2
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange sends 1 unsolicited message.		
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE restart.	LastMsgSeqNum equal to last message received.	Logon (A).
Exchange	Exchange checks SLE restart handshaking.	LastMsgSeqNum within customer logon. LastMsgSeqNum within CCG binary logon.	Logon (A).
Customer	Customer confirms receipt of pending message.	CCG bin MsgSeqNum incremented with one.	
Customer	Client sends 1 order message.	Customer MsgSeqNum incremented with one.	New Order (D).
Exchange	Exchange confirms receipt of order message.	Exchange ses the incoming message.	
Exchange	Exchange confirms SLE is up and running.		

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE receives pending message.
- SLE sends message.
- SLE data flow correct.

CYCLE C03: RETRANSMISSION MANAGEMENT

CYCLE OBJECTIVES:

This cycle tests the software's ability to replay data reception correctly.

CYCLE PREPARATION:

- Exchange ensures that the SLE is disconnected.
- Customers check their connections and make sure that the SLE is not logged on.

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. SLE Beginning of the day reception replay.	Customer initiates SLE Beginning of the Day restart (ie set LastMsgSeqNum equal to 0).	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives all Beginning of Day unsolicited messages. • SLE data flow correct.
2. SLE intraday reception replay.	After SLE customer initiated logout, customer initiates SLE restart from a specific LastMsgSeqNum. Then, Exchange resends messages from the requested LastMsgSeqNum.	<ul style="list-style-type: none"> • SLE session restarts correctly. • SLE receives resent messages. • SLE data flow correct.

CYCLE DETAILED INSTRUCTIONS:

UNIT 1: SLE BEGINNING OF THE DAY RECEPTION REPLAY

INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE beginning of day restart.	LastMsgSeqNum equal to 0.	Logon (A).
Exchange	Exchange resend messages.		
Customer	Customer confirms retransmission of message.		

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE receives retransmission of all messages since Beginning of the Day.
- SLE data flow correct.

UNIT 2: SLE INTRADAY RECEPTION REPLAY.
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to start the test.		
Customer	Customer initiates an SLE beginning of day restart.	LastMsgSeqNum equal to a specified MsgSeqNum.	Logon (A).
Exchange	Exchange resends messages.		
Customer	Customer confirms retransmission of message.		

COMPLETION CRITERIA

- SLE session restarts correctly.
- SLE receives retransmission of all messages since Beginning of the Day since the specified MsgSeqNum.
- SLE data flow correct.

CYCLE C04: ADMINISTRATIVE MESSAGES MANAGEMENT

CYCLE OBJECTIVES:

This cycle tests the software's ability to send messages.

CYCLE PREPARATION:

- Exchange ensures that the SLE is disconnected.
- Customers check their connections and make sure that the SLE is not logged.

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. Periodic reception of heartbeats	Customer establishes connection without sending any message during a period of time.	<ul style="list-style-type: none"> • SLE receives heartbeats periodically.
2. Test request sent by customer	Customer establishes connection without sending any message during a period of time.	<ul style="list-style-type: none"> • SLE receives heartbeat reply from CCGbin.
3. Test request sent by CCGbin	Customer establishes connection without sending any message during a period of time.	<ul style="list-style-type: none"> • SLE replies with heartbeat.

CYCLE DETAILED INSTRUCTIONS:**UNIT 1- PERIODIC RECEPTION OF HEARTBEATS**

INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to begin test.		
Customer	Customer initiates an SLE start.	LastMsgSeqNum equal to last message received.	Logon (A).
Customer	Customer confirms receipt of periodic reception of heartbeats.		HeartBeat (0).

COMPLETION CRITERIA:

- SLE receives heartbeats periodically.

UNIT 2- TEST REQUEST SENT BY CUSTOMER
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to begin test.		
Customer	Customer initiates an SLE startl	LastMsgSeqNum equal to last message received.	Logon (A).
Customer	Customer provokes emission of Test Request.		Test Request (1).
Exchange	Exchange confirms receipt of Test Request.		
Customer	Customer confirms receipt of heartbeat		

COMPLETION CRITERIA:

- SLE receives heartbeat reply from CCGbin.

UNIT 3- TEST REQUEST SENT BY EXCHANGE
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Exchange	Exchange advises the customer to begin test.		
Customer	Customer initiates an SLE start.	LastMsgSeqNum equal to last message received.	Logon (A).
Exchange	Exchange provokes emission of Test Request.		Test Request (1).
Customer	Customer confirms receipt of Test Request.		
Exchange	Exchange confirms receipt of heartbeat.		

COMPLETION CRITERIA:

- SLE replies with heartbeat correctly.

II- SLE PROFILE

CYCLE P01: TRADING SUBSCRIPTION MANAGEMENT - UNSOLICITED MESSAGES

CYCLE P02: TRADING SUBSCRIPTION MANAGEMENT - SOLICITED MESSAGES

CYCLE P03: MULTI-MARKET SUBSCRIPTION

CYCLE P04: MULTI-MEMBER SUBSCRIPTION (SERVICE BUREAU/ASP ONLY)

CYCLE P01: TRADING SUBSCRIPTION MANAGEMENT – PRIVATE UNSOLICITED MARKET MESSAGES

CYCLE OBJECTIVES:

This cycle tests an SLE’s ability to receive and interpret private unsolicited market messages from all subscribed trading systems.

CYCLE PREPARATION:

- Exchange ensures that the SLE is logged on.
- Customers check their connections and make sure that the SLE is logged on.

CYCLE DESCRIPTION:

System	UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
UTP	1. Order cancelled (order cancelled by surveillance).	Customer enters orders. Exchange cancels during the market session all the orders sent by the customer. Customer checks receipt of this message for each order still alive in its book.	<ul style="list-style-type: none"> • SLE receives and interprets message (4).
	2. Order eliminated (Corporate action in post session).	Customer enters orders. Exchange cancels all customer’s orders for a corporate action on that security during the post-market session. Customer checks receipt of this message for each order still alive in its book for this security.	<ul style="list-style-type: none"> • SLE receives and interprets message (4).
	3. Remaining Order reject due to collar breach.	Customer enters a valid limited order that can be executed but breaches the collar and checks receipt of remaining quantity reject.	<ul style="list-style-type: none"> • SLE receives and interprets message (8) following (a) and (2).
	4. Order elimination (IOC order partially executed).	Customer enters an IOC order during continuous session likely to be partially filled. Customer checks receipt of partial fill (2) and kill (4).	<ul style="list-style-type: none"> • SLE receives and interprets message (8) following (a) and (2).

UTP	5. Orders elimination (Global cancellation by the member).	Customer enters orders. Member cancels during the market session all its orders for a given security using global cancellation. Customer checks receipt of Order killed message for each order still alive in its book for this security.	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market messages (4).
	6. Orders elimination (Global cancellation by the Exchange).	Customer enters orders. Exchange cancels all customer's orders during the market session all its orders. Customer checks receipt of Order killed message for each order still alive in its book.	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market messages (4).
	7. Order Replaced.	Customer enters an order during the market session. Then, customer modifies this order. Customer checks the reception of Order Replaced (5) after reception of Order Cancel Replace Ack (E).	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market messages (5) that follows solicited message (E).
	8. Execution notice (order partially filled).	Exchange places some liquidity in a given security and invites customer to enter an order that partially trades. Customer checks receipt of one or several partial fill message(s).	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market message(s) (2).
	9. Execution notice (order fully filled).	Exchange places some liquidity in a given security and invites customer to enter an order that fully trades. Customer checks receipt of one or several fill message(s).	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market message(s) (2).
	10. Trade corrected.	Customer is involved in a trade. Exchange cancels this trade. Customer checks receipt of this message.	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market message (C).
	11. Trade cancelled.	Customer is involved in a trade. Exchange cancels this trade. Customer checks receipt of this message.	<ul style="list-style-type: none"> SLE receives and interprets private unsolicited market message (C).

CYCLE P03: TRADING SUBSCRIPTION MANAGEMENT – SOLICITED MARKET MESSAGES

CYCLE OBJECTIVES:

This cycle tests an SLE's ability to receive and interpret solicited market messages from all subscribed trading systems.

CYCLE PREPARATION:

- Exchange ensures that the SLE is logged on.
- Customers check their connections and make sure that the SLE is logged on..

CYCLE DESCRIPTION:

System	UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
VE/WW/L	1. New Order outcome Ack.	Customer enters a valid limited order not executed and checks receipt of ack message.	• SLE receives and interprets message (a).
	2. Cancel/Replace Request Ack.	Customer modifies a valid limited order not executed and checks receipt of ack and confirmation messages.	• SLE receives and interprets messages (E) then (5).
	3. Cancel Request Ack.	Customer cancels a valid limited order and checks receipt of ack and confirmation messages	• SLE receives and interprets messages (6) then (4).
	4. Order Reject.	Customer enters an invalid limited order and checks reception of order reject.	• SLE receives and interprets message (8).
	5. Cancel Replace Reject.	Customer modifies an invalid limited order and checks receipt of replace reject.	• SLE receives and interprets message (8).

System	UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
	6. Cancel Reject.	Customer cancels an invalid limited order and checks receipt of cancel reject.	<ul style="list-style-type: none"><li data-bbox="1400 320 1921 347">• SLE receives and interpret message (8).

CYCLE P04: MULTI-MARKET SUBSCRIPTION

CYCLE OBJECTIVES:

This cycle tests the software’s ability to receive and interpret incoming market messages from all subscribed trading engines : Universal Trading Platform , NYSE ARCA EUROPE.

CYCLE PREPARATION:

- Exchange ensures that the SLE is logged on.
- Customers check their connections and make sure that the SLE is logged on.

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. Multi-Market Reception.	Customer checks receipt of market messages coming from each trading engine customer has subscribed to.	<ul style="list-style-type: none"> • SLE receives and interprets unsolicited market messages from each trading engine the customer has subscribed to.
2. Multi-Market Emission.	Customer enters an order for each trading engine customer has subscribed to.	<ul style="list-style-type: none"> • SLE transmits orders for each trading engine customer has subscribed to.

CYCLE P05: MULTI-MEMBER SUBSCRIPTION (SERVICE BUREAU/ASP ONLY)

CYCLE OBJECTIVES:

This cycle tests the SLE’s ability to manage emission and reception of all market messages belonging to each member the SLE is entitled to route.

CYCLE PREPARATION:

- Exchange ensures that the SLE is logged on.
- Customers check their connections and make sure that the SLE is logged on..

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. Multi-Member Emission.	Customer checks receipt of market messages belonging to each member SLE is entitled to route.	<ul style="list-style-type: none"> • SLE receives and interprets market messages belonging to each member the SLE is entitled to route.
2. Multi-Member Reception.	Customer enters an order for each member SLE is entitled to route.	<ul style="list-style-type: none"> • SLE transmits order for each member SLE is entitled to route.
3. Member Versus Subscriber Mapping.	Customer enters an order for two members related to different SLE.	<ul style="list-style-type: none"> • Each order is routed by the right SLE.

III- HIGH AVAILABILTY

CYCLE H01: CCG BINARY FAIL-OVER MANAGEMENT

CYCLE H01: CCG BINARY FAIL-OVER MANAGEMENT

CYCLE OBJECTIVES:

This cycle tests the software's ability to recover following a CCG binary fail over:

- ability to detect message received duplicate
- ability to resend or not resend orders sent gap, in accordance of customer order retransmission policy.

CYCLE PREPARATION:

- Exchange ensures that the SLE is connected.
- Customers check their connections are up and running.
- Exchange invites customer to send orders in a sustained manner, then immediately provokes a fail over of CCG binary.

CYCLE DESCRIPTION:

UNIT Number	ACTIONS REQUIRED	UNIT COMPLETION CRITERIA
1. Logon handshake recovery	Customer immediately reconnects its SLE.	<ul style="list-style-type: none"> • SLE reconnects correctly.
2. Reception recovery	CCG bin resumes transmission of messages.	<ul style="list-style-type: none"> • SLE resumes reception correctly and is able to detect any application message duplicates.
3. Emission recovery	SLE resumes transmission of messages.	<ul style="list-style-type: none"> • SLE resumes emission correctly and is able to detect and deal with any orders sent gap.

CYCLE DETAILED INSTRUCTIONS:

UNIT 1- LOGON HANDSHAKE RECOVERY

INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Customer	Customer initiates an SLE start.	LastMsgSeqNum equal to last message received.	Logon (A).
Customer	Customer confirms SLE up and running.	LastMsgSeqNum within customer logon. LastMsgSeqNum within CCG binary logon.	Logon (A).
Exchange	Exchange checks SLE restart handshaking.	LastMsgSeqNum within customer logon. LastMsgSeqNum within CCG binary logon.	Logon (A).

COMPLETION CRITERIA:

- SLE reconnects correctly.

UNIT 2- RECEPTION RECOVERY
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Customer	Customer checks data received and confirms that software is able to detect any application message duplicate.	MsgType , Symbol, DeliverToCompld. Side: (2) message. UTPEXID: (2) and (C) messages only. ClOrdID, OrderID: all received messages. OrigMsgType, OrigMsgSeqNum: (y) message only.	Fill (2). Bust/Correct (C). Ack (a). Cancel Ack (6). Cancel Replace Ack (E). Kill (4), Replace(5), Reject(8). Generic Response (y).

COMPLETION CRITERIA:

- SLE resumes reception correctly and is able to detect any application message duplicate.

UNIT 3- EMISSION RECOVERY
INSTRUCTIONS:

Side	Instructions	Data Key Fields	Data Layout Reference
Customer	Customer checks orders sent gap.	LastMsgSeqNum within CCG binary logon.	Logon (A).
Customer	Customer checks whether SLE has resent or not the gap according to customer retransmission policy.	MsgSeqNum.	
Exchange	Exchange checks if customer has sent any order duplicates.	MsgSeqNum.	

COMPLETION CRITERIA:

- SLE resumes emission correctly and is able to detect and deal with any orders sent gap, in accordance of customer order retransmission policy.

ANNEX1- FAIL-OVER RECOVERY DATA FLOW KENAMICS

