SPECTRUM
Lighting up the market

SPECTRUM FIX RULES OF ENGAGEMENT

CONTENTS

Definitions 03

1. Introduction 04
   Purpose 04
2. Connectivity 05
   FIX Versions 05
   FIX Connections 05
   Notations 05
3. Gateway Capabilities 06
4. FIX Sessions 07
   Trading Hours 07
   Sequence Numbers/Reset 07
   Log On 07
   Log Out 08
5. Party 09
   Parties Block 09
6. Order Entry 14
   Order Lifecycle 14
   Submit New Order 14
   Order Cancel Replace Request 16
   Order Cancel Request 18
   Order Cancel Rejection 19
   Order Status 20
   Order Mass Status 20
   Execution Reporting 21
   Mass Quote 26
   Quote Cancellation 29
7. Market Data 31
   Trading Session Status 31
   Instrument Lifecycle 33
   Security List 34
   Security Status 39
   L1/L2 Data 40

Appendix 45
   Common Message Blocks 45
   Standard Message Header 45
   Standard Message Trailer 45
   Parties 46

DOCUMENT PHRASING	MEANING
“Exchange”	The Multilateral Trading Facility (MTF), legally named as Spectrum MTF Operator GmbH
“End Client”	Retail Client that Broker Members facilitate order submission for onto the Exchange
“Member”	Trading Participant directly connected into the Exchange and submitting orders to trade in the case of a Broker or executable quotes when a Market Maker
“MM”	Market Maker
“Transactions”	Formed when a Broker Order matches and trades with either a MM quote or another Broker Order

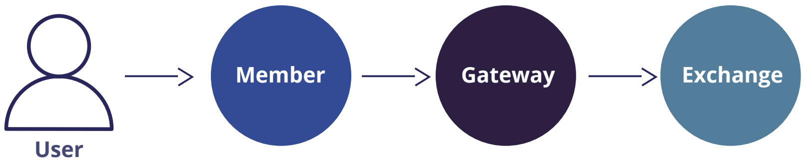
PURPOSE

This document specifies the technical interaction between Spectrum MTF Operator GmbH (the **“Exchange”**) and firms (the **“Member”**) using Financial Information eXchange (FIX) protocol.

FIX VERSIONS

The Exchange uses FIXT1.1 and FIX 5.0SP2 with extension packs. Custom tags will be used and specified. All tags denoted in the message table are included as required by FIXT1.1 and FIX 5.0SP2, and some optional tags may be marked as mandatory for proprietary uses.

FIX CONNECTIONS



The Member can connect to the Exchange for the transmission of price-related and order-related data respectively using the Gateways provided by the Exchange:

1. Market Data Gateway (The **"MD Gateway"**): For Members to request tradeable instrument and market data from the Exchange.

2. Order Entry Gateway (The **"OE Gateway"**): For Members to submit orders or quotes to the Exchange, and to receive execution reports in response.

NOTATIONS

- FIX message is denoted in Message (35=MsgType) format, e.g. Logon (35=A)
- FIX tag is denoted in TagName (TagNumber) format, e.g. SecurityTradingStatus (326)
- FIX value is denoted in Value = Description format, e.g. SubscriptionRequestType (263) has the value 1 = Snapshot and subscribe
- If a feature is tagged with PENDING, then the feature is not live yet
- If a feature is tagged with IN PROGRESS, then the feature is still being discussed and subject to change

3. GATEWAY CAPABILITIES

Here is the summary of the capabilities of each type of Gateway:

GATEWAY	MEMBER	MESSAGE TYPES
Order Entry	Broker	1. All transport-level message types (0, A, 5, 3, 2, 4, 1) 2. New Order – Single (35=D) 3. Execution Report (35=8) 4. Order Cancel Replace Request (35=G) 5. Order Cancel Reject (35=9) 6. Order Cancel Request (35=F) 7. Order Status Request (35=H) 8. Order Mass Status Request (35=AF)
	Market Maker	1. All transport-level message types (0, A, 5, 3, 2, 4, 1) 2. Mass Quote (35=i) and Mass Quote Acknowledgement (35=b) 3. Quote Cancel (35=Z) and Quote Status Report (35=AI) 4. Execution Report (35=8)
Market Data	1. Broker 2. Market Maker 3. Any interested party	1. All transport-level message types (0, A, 5, 3, 2, 4, 1) 2. Trading Session Status Request (35=g) and Trading Session Status (35=h) 3. Security List Request (35=x) and Security List (35=y) 4. Security Status Request (35=e) and Security Status (35=f) 5. Market Data Request (35=V) 6. Market Data Request Reject (35=Y) 7. Market Data – Snapshot/Full Refresh (35= W) 8. Market Data – Incremental Refresh (35=X)

FIX session protocol adheres to standard FIX, eg. Logon, Logout, TestRequest, Heartbeat, ResendRequest, SequenceReset etc.

TRADING HOURS

The Exchange is open for trading from Sunday 23:00 Europe/Berlin thru Friday 23:00 Europe/Berlin.

FIX connectivity is available from Sunday 22:30 Europe/Berlin thru Friday 23:15 Europe/Berlin. Any orders or quotes received outside the exchange's trading hours will be rejected.

SEQUENCE NUMBERS/RESET

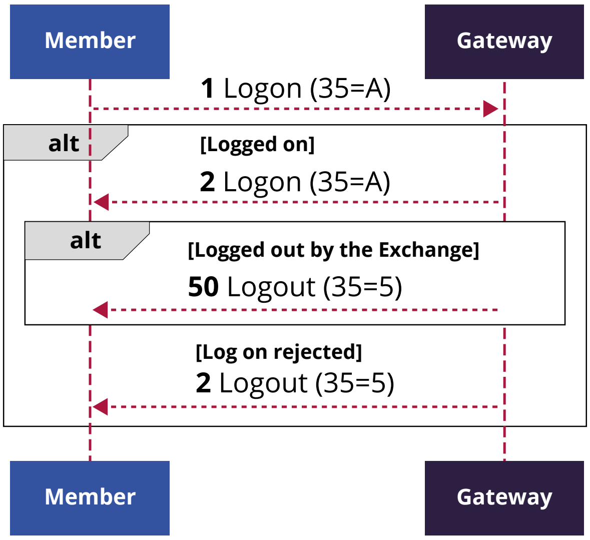
On the Market Data session, Exchange Gateway will send ResetSeqNumFlag (141) =Y and sequence number 1 on every logon.

On the Order Entry session, Exchange Gateway will persist sequence numbers through the week; ResetSeqNumFlag is not used (unless there is manual intervention). Reset takes place during the weekend downtime. On Sunday night/Monday morning startup, Exchange Gateway will connect with sequence number 1 and expect to receive sequence number 1.

LOG ON

The Member must be authenticated via the gateway by issuing a Logon (35=A) message.
The user should pass the following validation to log on:

- The user is recognised and enabled
- The user has the permission to log on as a Member

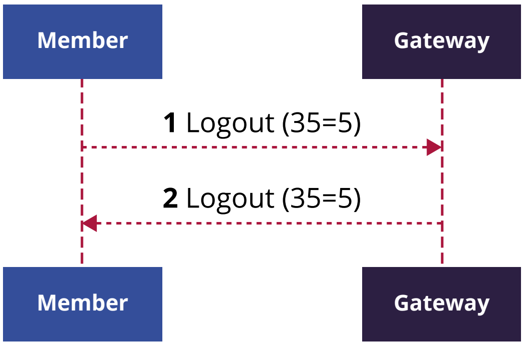


Logon (35=A)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
98	EncryptMethod	Y	0 = No encryption at the moment
108	HeartBtInt	Y	This tag is the heartbeat interval in seconds. It is determined by the user at login time. The firm's heartbeat interval should be greater than 5 seconds. If the user fails to respond to 3 test requests following missed "heartbeats", the gateway will disconnect the session an log out the user. The number of retries can be modified on a per session basis
141	ResetSeqNumFlag	N	
553	Username	C	Required when initiating connection to the Exchange The Exchange Member username in clear text
554	Password	C	Required when initiating connection to the Exchange Password in clear text
1137	DefaultApplVerID	Y	Always be 9 = FIX50SP2
	<Standard Message Trailer>		

LOG OUT

A Logout (35=5) can be sent by the Member or the Exchange, as a notification initiated by either side. If it was sent by the Member, the Exchange will respond with a Logout (35=5) message.



Logout (35=5)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
58	Text	N	Any reason given by the Exchange for rejected log on
	<Standard Message Trailer>		

PARTIES BLOCK

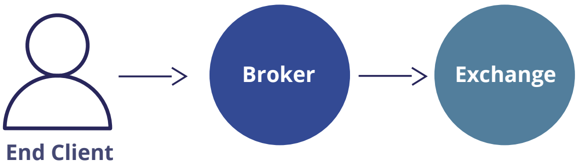
For most of the Order, Quote, and Trade operations, the gateway must resolve:

- Member username. The unique identifier of the Exchange member

For each case, either the gateway retrieves the values from the repeating Party component block, or resolves the values from given information. The gateway is able to retrieve the member type of the given Party ID (448), Party ID Source (447) and Party Role (452).

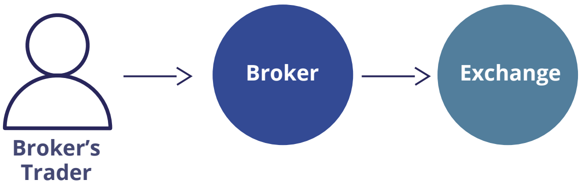
Here are the examples of different cases:

CASE 1: END CLIENT EXECUTES THE ORDER VIA THE BROKER



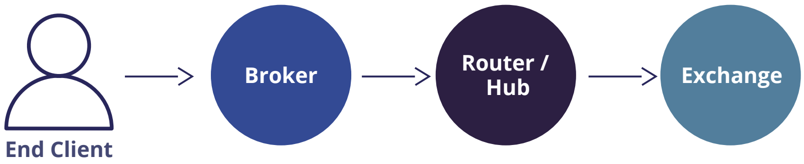
TAG	NAME	VALUE	NOTES
453	NoPartyIDs	3	
448	PartyID	My_Broker	The Broker ID
447	PartyIDSource	D = Custom	Exchange Member identifier (equivalent to LEI)
452	PartyRole	29 = Broker	
448	PartyID	DBDAD	An identifier of the Client Account that does not contain personally identifier information
447	PartyIDSource	D = Custom	End Client Identifier provided by the Broker
452	PartyRole	3 = Client ID	
448	PartyID	GB235235	
447	PartyIDSource	Q = National ID	The National ID of the End Client
452	PartyRole	3 = Client ID	

CASE 2: BROKER EXECUTES THE ORDER ON BEHALF OF THE END CLIENT



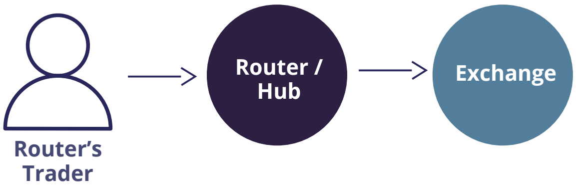
TAG	NAME	VALUE	NOTES
453	NoPartyIDs	5	
448	PartyID	My_Broker	The Broker ID who executes the order
447	PartyIDSource	N = LEI	The Legal Entity Identifier (LEI) of the Broker
452	PartyRole	1 = Executing Firm	
448	PartyID	PL23536	The Trader ID of the given Broker who executes the order
447	PartyIDSource	Q = National ID	The National ID of the Trader within the Broker
452	PartyRole	12 = Executing Trader	
448	PartyID	My_Broker	The Broker ID
447	PartyIDSource	D = Custom	Exchange Member Identifier (equivalent to LEI)
452	PartyRole	29 = Broker	
448	PartyID	DBDAD	An identifier of the End Client Account that does not contain personally identifier information
447	PartyIDSource	D = Custom	Provided by the Broker
452	PartyRole	3 = Client ID	
448	PartyID	GB235235	
447	PartyIDSource	Q = National ID	The National ID of the End Client
452	PartyRole	3 = Client ID	

CASE 3: END CLIENT EXECUTES THE ORDER VIA THE BROKER THROUGH A ROUTER/HUB



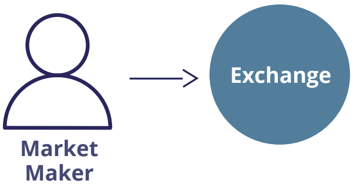
TAG	NAME	VALUE	NOTES
453	NoPartyIDs	4	
448	PartyID	My_Broker	The Broker ID
447	PartyIDSource	D = Custom	Exchange Member identifier (equivalent to LEI)
452	PartyRole	29 = Broker	
448	PartyID	My_Router	The Router/Hub ID
447	PartyIDSource	N = LEI	The Legal Entity Identifier (LEI) of the Router
452	PartyRole	30 = Router/Hub	
448	PartyID	DBDAD	An identifier of the End Client Account that does not contain personally identifier information
447	PartyIDSource	D = Custom	Provided by the Broker
452	PartyRole	3 = Client ID	
448	PartyID	GB235235	An identifier of the Client Account that does not contain personally identifier information
447	PartyIDSource	Q = National ID	The National ID of the End Client
452	PartyRole	3 = Client ID	
448	PartyID	GB235235	
447	PartyIDSource	Q = National ID	The National ID of the End Client
452	PartyRole	3 = Client ID	

CASE 4: ROUTER/HUB'S TRADER EXECUTES THE ORDER ON BEHALF OF THE END CLIENT



TAG	NAME	VALUE	NOTES
53	NoPartyIDs	6	
448	PartyID	My_Router	The Router/Hub ID who executes the order
447	PartyIDSource	N = LEI	The Legal Entity Identifier (LEI) of the Router firm
452	PartyRole	1 = Executing Firm	
448	PartyID	PL23536	The Trader ID of the given Router/Hub who executes the order
447	PartyIDSource	Q = National ID	The National ID of the Trader within the Broker
452	PartyRole	12 = Executing Trader	
448	PartyID	My_Broker	The Broker ID
447	PartyIDSource	D = Custom	The Exchange Member Identifier (equivalent to LEI)
452	PartyRole	29 = Broker	
448	PartyID	My_Router	The Router/Hub ID
447	PartyIDSource	N = LEI	The Legal Entity Identifier (LEI) of the Router firm
452	PartyRole	30 = Router/Hub	
448	PartyID	DBDAD	An identifier of the End Client Account that does not contain personally identifier information
447	PartyIDSource	D = Custom	Provided by the Broker
452	PartyRole	3 = Client ID	
448	PartyID	GB235235	
447	PartyIDSource	Q = National ID	The National ID of the End Client
452	PartyRole	3 = Client ID	

CASE 5: MARKET MAKER SUBMITS MASS QUOTE OR EXECUTES ORDER



TAG	NAME	VALUE	NOTES
453	NoPartyIDs	1	
448	PartyID	My Market_Maker	The Market Maker ID
447	PartyIDSource	D = Custom	Exchange Member Identifier (equivalent to LEI)
452	Party Role	66 = Market Maker	

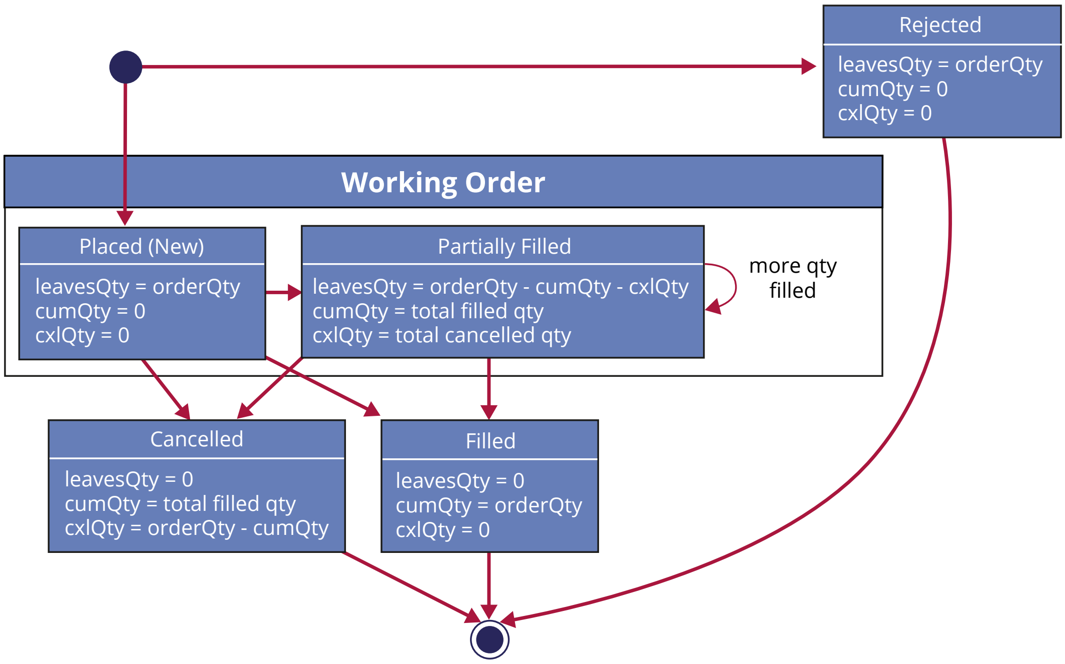
SUPPORTED COMBINATIONS OF PARTY ROLES AND PARTY ID SOURCES

	D = CUSTOM	N = LEI	Q=NATIONAL ID
1 = Executing Firm	✗	✓	✗
3 = Client ID	✓	✗	✓
12 = Executing Trader	✗	✗	✓
17 = Contra Firm	✗	✓	✗
29 = Broker	✓	✗	✗
30 = Router/Hub	✗	✓	✗
66 = Market Maker	✓	✗	✗

This section covers the functionality supported by Order Entry Gateway for brokers and market makers.

ORDER LIFECYCLE

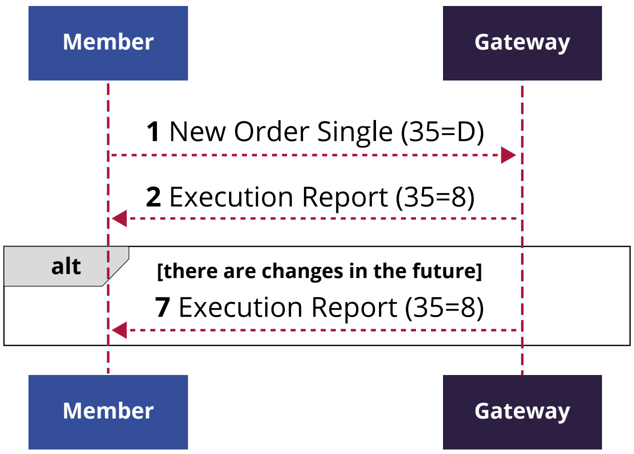
Several quantity fields are use to describe the order status in details. In general,
ordQty = cumQty + leavesQty + cxlQty



SUBMIT NEW ORDER

An Order is used to create or reduce exposure to an instrument. It is requested by the Member submitting a New Single (35=D) message to the OE gateway. The tag Client Order ID (11) should be unique within the trading session.

MESSAGE FLOW



NEW ORDER – SINGLE (35=D)

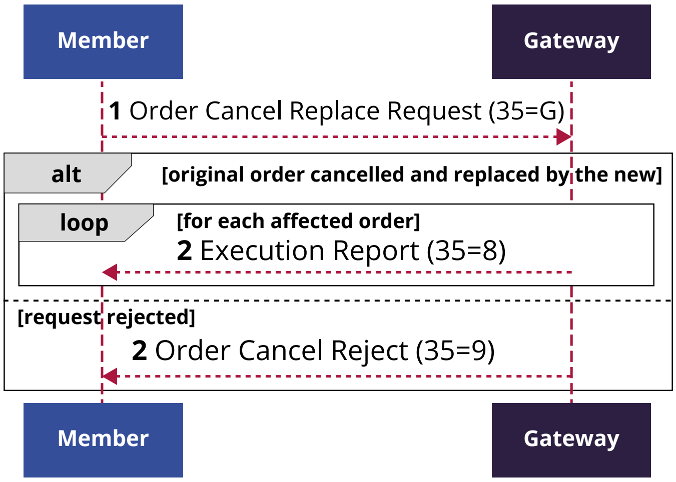
TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
11	ClOrdID	Y	The unique identifier of the order assigned by Member
526	SecondaryClOrdID	N	The bespoke Pre Trade Controls relief (bypass) code
	<Parties Block>		
55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
54	Side	Y	1 = Buy (Bid) 2 = Sell (Offer)
60	TransactTime	Y	Time this request was initiated/released by the trader or trading system
38	OrderQty	Y	Quantity ordered. Only integers are allowed
40	OrdType	Y	1 = Market 2 = Limit
44	Price	Y	Price per unit of quantity. Required if OrdType (40) is 2 = Limit
59	TimeInForce	Y	0 = Day 1 = Good Till Cancel (GTC) 3 = Immediate Or Cancel (IOC) 4 = Fill Or Kill (FOK) 6 = Good Till Date (GTD)
432	ExpireDate	C	The Date of order expiration. Required if TimeInForce(59) is 6= Good Till Date (GTD)
	<Standard Message Trailer>		

SUPPORTED COMBINATIONS OF ORDER TYPE AND TIME IN FORCE

	0 = DAY	1 = GOOD TILL CANCEL (GTC)	3 = IMMEDIATE OR CANCEL (IOC)	4 = FILL OR KILL (FOK)	6 = GOOD TILL DATE (GTD)
1 = Market	✗	✗	✓	✓	✗
2 = Limit	✓	✓	✓	✓	✓

ORDER CANCEL REPLACE REQUEST

The Member may request to amend a submitted order by cancelling the original and replacing it by the new. An Order Cancel Replace Request (35=G) message should be sent for the purpose. A new Client Order ID (11) should be provided in the request. The Original Client Order ID (41) should refer to the Client Order ID (11) of the original or previously amended order.



SUPPORTED AMENDMENTS

The Exchange supports the following attributes of an order to be amended:

1. Price (44)
2. OrderQty (38) if LeavesQty (151) is positive
3. ExpireDate (432)

LEAVES QUANTITY

Amendment of other attributes will be rejected. Attempts to cancel the order by adjusting LeavesQty (151) to zero will be rejected. Order Cancel Request (35=F) should be used to cancel an order. CumQty (14) remains unchanged. OrderQty (38) can only be adjusted if the LeavesQty (151) is positive. All cases can be summarised as below:

ORIGINAL ORDERQTY	ORIGINAL LEAVESQTY	CUMQTY	REQUESTED ORDERQTY	RESULT	NEW ORDERQTY	NEW LEAVESQTY
100	100	0	66	Accepted	66	66
100	75	25	66	Accepted	66	41
100	75	25	24	Rejected as the requested OrderQty is smaller than CumQty		
100	0	100	20	Rejected as LeavesQty is zero		

PLACE IN THE BOOK

The order will retain its place in the book only if being amended:

1. to a smaller Quantity; or
2. to a different Expire Date.

That is, all other cases will result in losing its original place in the book.The new order will be re-prioritised.

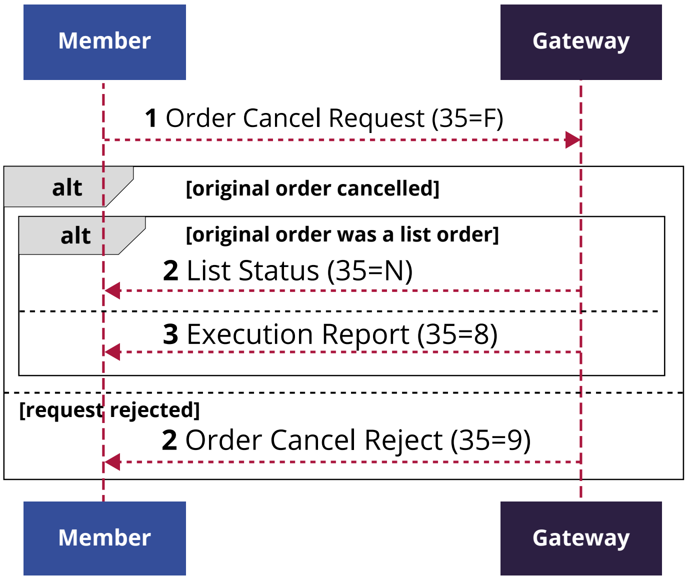
If the order is amended, an Execution Report (35=8) message will be sent to the Member to detail the latest state of the object. Otherwise an Order Cancel Reject (35=9) message will be sent and the order will remain unchanged by the request.

ORDER CANCEL REPLACE REQUEST (35=G)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
	<Parties>		
41	OrigClOrdID	Y	The Client Order ID (11) of the original or previously amended order
11	ClOrdID	Y	The new unique identifier of the order
526	SecondaryClOrdID	N	The bespoke Pre Trade Controls relief (bypass) code
55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
54	Side	Y	1 = Buy (Bid) 2 = Sell (Offer)
60	TransactTime	Y	Time this request was initiated/released by the trader or trading system
38	OrderQty	Y	The new order quantity
40	OrdType	Y	1 = Market 2 = Limit
44	Price	C	The new order price. Required if OrdType (40) is 2 = Limit
59	TimeInForce	Y	0 = Day 1 = Good Till Cancel (GTC) 3 = Immediate Or Cancel (IOC) 4 = Fill Or Kill (FOK) 6 = Good Till Date (GTD)
432	ExpireDate	C	The Date of order expiration. Required if TimeInForce(59) is 6= Good Till Date (GTD)
	<Standard Message Trailer>		

ORDER CANCEL REQUEST

The Member may request to cancel a submitted order by sending an Order Cancel Request (35=G) message. A new Client Order ID (11) should be provided in the request. The Original Client Order ID (41) should refer to the Client Order ID (11) of the original or previously amended order.



If the order has been cancelled, an Execution Report (35=8) message will be sent to the Member to detail the latest state of the order. Otherwise an Order Cancel Reject (35=9) message will be sent and the order will remain unchanged by the request.

ORDER CANCEL REQUEST (35=F)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
41	OrigClOrdID	Y	The Client Order ID (11) of the original or previously amended order
11	ClOrdID	Y	The new unique identifier of the order
	<Parties>		
55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
54	Side	Y	1 = Buy (Bid) 2 = Sell (Offer) 8 = Cross
60	TransactTime	Y	Time this request was initiated/released by the trader or trading system
	<Standard Message Trailer>		

ORDER CANCEL REJECTION

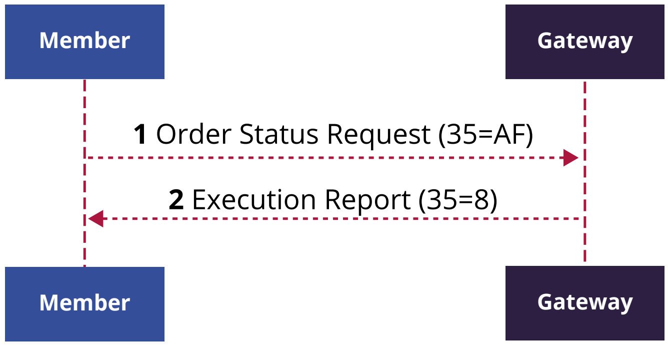
The Order Cancel Reject (35=9) message is a response to either an Order Cancel Replace Request (35=G) or an Order Cancel Request (35=F).

ORDER CANCEL REJECT (35=9)

TAG	NAME	REQ'D	NOTES
			<Standard Message Header>
37	OrderID	Y	Exchange-assigned identifier of the order. "NONE" if CxlRejReason (102) = 1(Unknown order)
11	ClOrdID	Y	The identifier of the order provided in the request
41	OrigClOrdID	N	ClOrdID(11) which could not be canceled/replaced. ClOrdID (11) of the previous accepted order (NOT the initial order of the day) when canceling or replacing an order. Required when referring to orders that were electronically submitted over FIX or otherwise assigned a ClOrdID (11)
39	OrdStatus	Y	The current status of the orders 0 = New Order 1 = Partially Filled 2 = Filled 4 = Cancelled 5 = Replaced 6 = Pending Cancel 8 = Rejected A = Pending New Order
434	CxlRejResponseTo	Y	Identifies the type of request that a Cancel Reject is in response to: 1 = Order Cancel Request (35=F) 2 = Order Cancel Replace request (35=G)
102	CxlRejReason	N	Code to identify reason for cancel rejection. 0 = Too late to enter 1 = Unknown order 2 = Exchange option 6 = Duplicate Client Order ID 18= Invalid price increment 99 = Other
58	Text	N	Any message from the Exchange
			<Standard Message Trailer>

ORDER STATUS

The Member could recover the status of an Order by submitting an Order Status Request (35=H) Message. The Exchange will send an Execution Report (35=8) for the specific order.

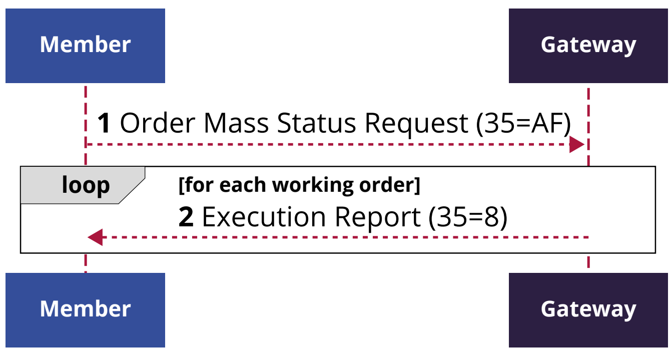


ORDER STATUS REQUEST (35=H)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
11	ClOrdID	Y	The unique identifier of the order as assigned by Member
55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
	<Parties>		
54	Side	Y	• 1 = Buy (Bid) • 2 = Sell (Offer) • 8 = Cross
	<Standard Message Trailer>		

ORDER MASS STATUS

The Member could recover the statuses of its Order by submitting an Order Mass Status Request (35=AF) Message. The Exchange will send an Execution Report (35=8) for each known order within the current trading session.



ORDER MASS STATUS REQUEST (35=AF)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
584	MassStatusReqID	Y	The new unique identifier of this request
585	MassStatusReqType	Y	7 = Status of all Orders
	<Parties>		
	<Standard Message Trailer>		

EXECUTION REPORTING

The Execution Report (35=8) message is a detailed report on the status of an Order. It is sent by the OE Gateway as the notification of the change in an order. An Execution Report will be produced in the following situations:

- an order matched;
- as a response to either New Order – Single (35=D), Order Cancel Replace Request (35=G), Order Cancel Request (35=F), or Order Status Request (35=H) message;
- in response to an MTF operator cancelling (busting) an existing trade.

Only the Member who submits an order to OE Gateway will receive the Execution Report (35=8) for that order.

CASE EXAMPLES

The Execution Type (150) and Order Status (39) in the Execution Report (35=8) message represent a number of cases related to an order.

CASE EXAMPLE	TAG	NAME	VALUE	NOTES
Order Placed without a Trade	150	ExecType	0 = New	Order Ready for Execution
	39	OrdStatus	0 = New	
Order Rejected	150	ExecType	8 = Rejected	Order Rejected due to Trading Session closed
	39	OrdStatus	8 = Rejected	
	103	OrdRejReason	2 = Exchange Closed	
	58	Text	Trading Session Closed	
Order Partially Filled	150	ExecType	F = Trade	Order of 40 size, filled 15 and leaving 25 for further execution
	39	OrdStatus	1 = Partially Filled	
	38	OrderQty	40	
	151	LeavesQty	25	
	14	CumQty	15	
Order Filled	150	ExecType	F = Trade	Order of 40 size, filled 40 and there is no more execution
	39	OrdStatus	2 = Filled	
	38	OrderQty	40	
	151	LeavesQty	0	
	14	CumQty	40	
Order Cancel Replaced by Request	11	ClOrdID	CxlRplcReq_281	Order (OrderReq_235) cancelled and replaced by the request ClOrdID (CxlRplcReq_281)
	41	OrigClOrdID	OrderReq_235	
	150	ExecType	5 = Replaced	
	39	OrdStatus	[NO_CHANGE]	
Order Expired	150	ExecType	C = Expired	Order of 40 size, filled 20 and the rest expired
	39	OrdStatus	C = Expired	
	38	OrderQty	40	
	151	LeavesQty	0	
	14	CumQty	20	
Order Cancelled by Exchange	11	ClOrdID	CxlReq_312	No OrigClOrdID (41) unless it was amended by request before cancelled by Exchange
	150	ExecType	4 = Cancelled	Order of 40 size, filled 20 and the rest cancelled
	39	OrdStatus	4 = Cancelled	
	38	OrderQty	40	
	151	LeavesQty	0	
	14	CumQty	20	
	84	CxlQty	20	
Order Cancelled by Request	11	ClOrdID	CxlReq_312	Order (OrderReq_255) cancelled by the request ClOrdID (CxlReq_312). Original size 40, filled 20 and the rest cancelled
	41	OrigClOrdID	OrderReq_235	
	150	ExecType	4 = Cancelled	

CASE EXAMPLE	TAG	NAME	VALUE	NOTES
	39	OrdStatus	4 = Cancelled	
	38	OrderQty	40	
	151	LeavesQty	0	
	14	CumQty	20	
	84	CxlQty	20	
Order Status Requested	150	ExecType	I = Order Status	
Trade Cancel (Trade Busted)	150	ExecType	H = Trade Cancel	
	39	OrdStatus	0|1|2	Status of the order after removing this trade
	32	LastQty	5	LastQty on the Execution that was cancelled
	38	OrderQty	20	Current OrderQty at the time of the cancellation
	14	CumQty	10	New CumQty on the order following the cancellation
	151	LeavesQty	10	New LeavesQty following the cancellation
	17	ExecId	BustId	Generated Id for the Trade Bust
	19	ExecRefId	Exec_17	Execution Id of the Execution that was busted
	11	ClOrdId	Exec_ClOrdId	Current (latest) clOrdId of the order that the cancelled execution relates to
	6	AvePx	4.56	The new AvePx after cancelling the Execution
	84	CxlQty	0	Quantity Cancelled. May be 0
Restatement (following Trade Bust of a Working Order)	150	ExecType	D = Restatement	
	378	Restatement Reason	5 = Partial Decline of OrderQty	
	39	OrdStatus	0|1|2	Status of the order after removing this trade
	38	OrderQty	15	New OrderQty after removing the Qty on the cancellation
	14	CumQty	10	New CumQty on the order following the cancellation
	151	LeavesQty	5	LeavesQty following the cancellation
	17	ExecId	XXXXXX	Generated
	11	ClOrdId	Exec_ClOrdId	Current (latest) clOrdId of the order
	6	AvePx	4.56	Calculated from the remaining executions on the Order

EXECUTION REPORT (35=8)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
37	OrderID	Y	Exchange-assigned identifier of the order. This ID will typically be used in all subsequent messages relating to this order. Members are normally expected to manage the association between this ID and their ClOrdID (11)
526	SecondaryClOrderID	C	It refers to QuoteID (117). Required only if it is a quote
11	ClOrdID	Y	The unique identifier of the order as assigned by Member. If it is a quote, it refers to QuoteEntryID (299)
41	OrigClOrdID	C	Original Client Order ID sent back in response to a Cancel or Cancel Replace request by the Member. If the order has been cancelled by the Exchange this will not be set
	<Parties>		
880	TrdMatchID	C	Required only if ExecType (150) = (F = Trade). The unique identifier of this trade. The same ID is given to the Execution Report (35=8) of the counterparty
17	ExecID	Y	The unique identifier of this execution report
150	ExecType	Y	The purpose of the message • 0 = New Order • 4 = Cancelled • 5 = Replaced • 8 = Rejected • C = Expired • D = Restated • F = Trade • G = Trade Correct • H = Trade Cancel • I = Order Status
39	OrdStatus	Y	The current status of the orders • 0 = New Order • 1 = Partially Filled • 2 = Filled • 4 = Cancelled • 5 = Replaced • 8 = Rejected • C = Expired
103	OrdRejReason	C	The reason why the order was rejected. Required only if ExecType (150) is 8 = Rejected • 0 = Exchange option • 1 = Unknown symbol • 2 = Exchange closed • 3 = Order exceeds limit • 4 = Too late to enter • 5 = Unknown Order • 6 = Duplicate Order (e.g. duplicate ClOrdID) • 8 = Stale Order • 11 = Unsupported Order characteristics • 13 = Incorrect quantity • 15 = Unknown account • 18 = Invalid price increment • 99 = Other
378	ExecRestatementReason	C	Required if ExecType (150) is D = Restated
64	SettlDate	Y	Required only if ExecType (150) = (F = Trade). Specific date of trade settlement (SettlementDate) in YYYYMMDD format
55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
48	SecurityID	Y	Exchange-assigned identifier of the instrument

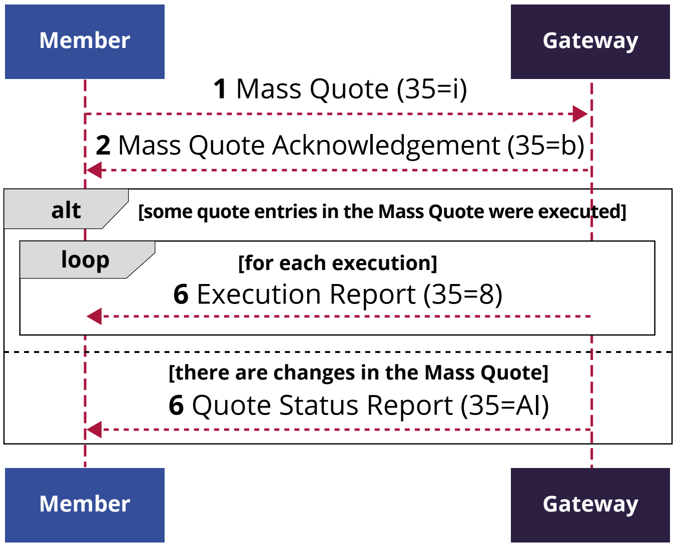
TAG	NAME	REQ'D	NOTES
22	SecurityIDSource	Y	8 = Exchange Symbol
202	StrikePrice	C	Required only if ExecType (150) = (F = Trade). The Strike price of the instrument at the time of this trade
54	Side	Y	• 1 = Buy (Bid) • 2 = Sell (Offer)
38	OrderQty	Y	The original quantity of the order
40	OrdType	Y	• 1 = Market • 2 = Limit
44	Price	C	The current price of the order. Required if OrdType (40) is 2 = Limit
377	SolicitedFlag	N	Indicate if the order was submitted via FIX or by the Exchange • Y = Order submitted via FIX (default) • N = Order submitted by the Exchange
59	TimeInForce	Y	The current Time-in-force of the order • 0 = Day • 1 = Good Till Cancel (GTC) • 3 = Immediate Or Cancel (IOC) • 4 = Fill Or Kill (FOK) • 6 = Good Till Date (GTD)
432	ExpireDate	C	The Date of order expiration. Required if TimeInForce(59) is 6= Good Till Date (GTD)
1057	AggressorIndicator	C	Required only if ExecType (150) = (F = Trade) • Aggressor • Passive
32	LastQty	C	Required only if ExecType (150) = (F = Trade). The executed quantity of the last trade
31	LastPx	C	Required only if ExecType (150) = (F = Trade). The executed price of the last trade
30	LastMkt	C	Required only if ExecType (150) = (F = Trade)
151	LeavesQty	Y	The order quantity available for further execution. If the OrdStatus (39) is Cancelled, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty (151) could be 0, otherwise LeavesQty = OrderQty - CumQty
14	CumQty	Y	The cumulative traded quantity
6	AvgPx	N	The average traded price
84	CxlQty	C	The order quantity cancelled. Required if OrdStatus (39) is 4 = Cancelled
75	TradeDate	C	Required only if ExecType (150) = (F = Trade). Business date of trade YYYYMMDD format
60	TransactTime	Y	Time the transaction represented by this Execution Report occurred
58	Text	N	Any message from the Exchange
851	LastLiquidityInd	C	Required only if ExecType (150) = (F = Trade). Indicator to identify whether this fill was a result of a liquidity provider providing or liquidity taker taking the liquidity 1 = Added Liquidity 2 = Removed Liquidity
15	Currency	C	Required only if ExecType (150) = (F = Trade)
	<Standard Message Trailer>		

MASS QUOTE

The Order Entry Gateway supports quoting by Mass Quote (35=i) message. There is no limit of the number of quote entries submitted in a message, however it must not end up in wash trade, i.e. the bid quote and offer quote of will match each other. Backwardation is not supported. Quote ID (117) is used as the unique identifier for each Mass Quote (35=i) message. Quote Set ID (302) must be unique within the same Mass Quote (35=i) message.

Quote Entry ID (299) is used as the unique identifier for a pair of bid and offer prices. Each quote entry can have either one side or both, but not none. It will be referred to Client Order ID (11) if the quote entry has matched other orders in the Execution Report (35=8) message.

A Mass Quote (35=i) can only contains multiple SecurityID (48), however all quote entries of the same SecurityID (48) should be in the same quote set. The success and failure are atomic per Symbol (55), but independent across multiple SecurityID (48).



A Mass Quote Acknowledgement (35=b) message will be sent as a response of a Mass Quote (35=i) message per SecurityID (48).

FULL REPLACEMENT MODE

Each Mass Quote (35=i) message completely replace all quote entries of the previous message for the same instrument. And each message has its own unique QuoteID (117). However, the bid and offer quote entries within the message must not cause any potential wash trade.

Each quote pair can have either one side or both. If one of the entries fails validation, the message will be rejected.

Full Replacement Mode can be specified by setting QuoteModelType (2403) to be 1 = Quote Entry, or not setting the tag as this is the default mode.

REJECTION

If the Mass Quote (35=i) message is rejected, all previous quotes on the book by the same Market Maker of the same SecurityID (48) will be cancelled.

ICEBERG QUOTE ENTRY

Iceberg quote entry can be specified by optional tags TotalBidSize (1749) and TotalOfferSize (1750).

CASE 1: A QUOTE ENTRY AS A PAIR OF BID AND OFFER OF DISPLAY SIZE 100 AND TOTAL SIZE 5000:

TAG	NAME	VALUE
299	QuoteEntryID	GBP_USD_Q1_S2_E1
132	BidPx	1.2495
133	OfferPx	1.2595
134	BidSize	100
135	OfferSize	100
1749	TotalBidSize	5000
1750	TotalOfferSize	5000

MASS QUOTE (35=I)

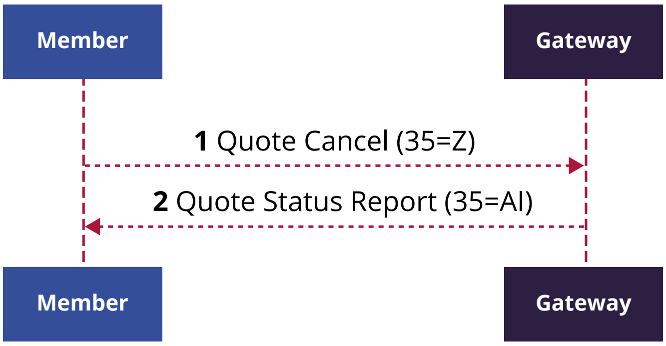
TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
117	QuoteID	Y	The unique identifier of this quote provided by the Member. Any subsequent execution will use this identifier as Secondary Client Order ID (198) in the Execution Report (35=8)
537	QuoteType	N	1 = Tradeable
2403	QuoteModelType	N	1 = Quote Entry, Full Replacement (default)
	<Parties>		
296	NoQuoteSets	Y	The number of sets of quotes
> 302	QuoteSetID	Y	Sequential number for the Quote Set, starting from 1 within this message. Must be the first tag in the repeating group
> 304	TotNoQuoteEntries	Y	The total number of quote entries in this message across all quote sets. It should be the sum of NoQuoteEntries of all quote sets in this message
> 295	NoQuoteEntries	Y	The number of quote entries in this quote set
> > 299	QuoteEntryID	Y	The unique identifier of the quote entry. Any subsequent execution will use this identifier as Client Order ID (11) in the Execution Report (35=8)
> > 55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
> > 48	SecurityID	Y	Exchange-assigned identifier of the instrument
> > 22	SecurityIDSource	Y	8 = Exchange Symbol
> > 132	BidPx	C	The display bid price. Not required if there is no bid side
> > 133	OfferPx	C	The display offer price. Not required if there is no offer side
> > 134	BidSize	C	The bid size. Not required if there is no bid side
> > 135	OfferSize	C	The offer size. Not required if there is no offer side
	<Standard Message Trailer>		

MASS QUOTE ACKNOWLEDGEMENT (35=B)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
117	QuoteID	Y	The unique identifier of the Mass Quote (35=i) message
297	QuoteStatus	Y	This applies to all values in QuoteSetId(302) • 0 = Accepted • 5 = Rejected
300	QuoteRejectReason	N	This applies to all values in QuoteSetId(302) • 1 = Unknown symbol • 2 = Exchange closed • 3 = Quote request exceeds limit • 4 = Too late to enter • 6 = Duplicate quote • 7 = Invalid bid ask spread • 8 = Invalid price • 9 = Not authorised to quote security • 10 = Stale quote • 99 = Other
60	TransactTime	Y	Time the transaction represented when the corresponding Mass Quote was acknowledged
296	NoQuoteSets	Y	The number of sets of quotes in the message
> 302	QuoteSetID	Y	Sequential number for the Quote Set, starting from 1 within this message. Must be the first tag in the repeating group
> 304	TotNoQuoteEntries	Y	The total number of quote entries in this message across all quote sets. It should be the sum of NoQuoteEntries of all quote sets in this message
> 295	NoQuoteEntries	Y	The number of quote entries in this quote set
> > 299	QuoteEntryID	Y	The unique identifier of the quote entry. Any subsequent execution will use this identifier as Client Order ID (11) in the Execution Report (35=8)
> > 55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
> > 48	SecurityID	Y	Exchange-assigned identifier of the instrument
> > 22	SecurityIDSource	Y	8 = Exchange Symbol
> > 132	BidPx	C	The display bid price. Not required if there is no bid side
> > 133	OfferPx	C	The display offer price. Not required if there is no offer side
> > 134	BidSize	C	The bid size. Not required if there is no bid side
> > 135	OfferSize	C	The offer size. Not required if there is no offer side
> > 60	TransactTime	Y	Time the transaction represented when this Quote Entry was processed
	<Standard Message Trailer>		

QUOTE CANCELLATION

The Member may request to cancel all quotes of a SecurityID (48) by sending a Quote Cancel (35=Z) message.



If the quote has been cancelled, a Quote Status Report (35=AI) message will be sent to the Member with Quote Status (297) = 17 Cancelled.

If the request has been rejected, one Quote Status Report (35=AI) message will be sent with Quote Status (297) as 5 =Rejected and the quote will remain unchanged by the request.

If the request has not cancelled any quote, one Quote Status Report (35=AI) message will be sent with Quote Status (297) as 9 =Quote Not Found.

QUOTE CANCEL (35=Z)

TAG	NAME	REQ'D	NOTES
	<Standard Message Trailer>		
131	QuoteReqID	Y	The unique identifier of the request
298	QuoteCancelType	Y	Always 1 = Cancel for symbol(s)
	<Parties>		
295	NoQuoteEntries	Y	Number of quote entries
> 55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
> 48	SecurityID	Y	Exchange-assigned identifier of the instrument
> 22	SecurityIDSource	Y	8 = Exchange Symbol
	<Standard Message Trailer>		

QUOTE STATUS REPORT (35=AI)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
131	QuoteReqID	C	The unique identifier of the request if it was a response to a previous Quote Cancel (35=Z) message
117	QuoteID	C	The identifier of the request. Needs to be unique for trading session. Required if the quote was found
537	QuoteType	N	1 = Tradeable
298	QuoteCancelType	C	Required if it was a response to a previous Quote Cancel (35=Z) Message • 1 = Cancel for symbol (s)
	<Parties>		
55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
60	TransactTime	Y	Time the transaction represented by this Execution Report occurred
297	QuoteStatus	Y	• 0 = Accepted • 5 = Rejected • 9 = Quote not found • 14 = Cancelled due to Lock Market • 17 = Cancelled
58	Text	N	Any reason given by the Exchange for the change of Quote status
	<Standard Message Trailer>		

TRADING SESSION STATUS

Trading Session Status is the trading status of the Exchange. The Member could send a Trading Session Status Request (35=g) message to check if the Exchange is open for trading or closed.

The Gateway will acknowledge this message by sending a Trading Session Status (35=h) message to the Member.

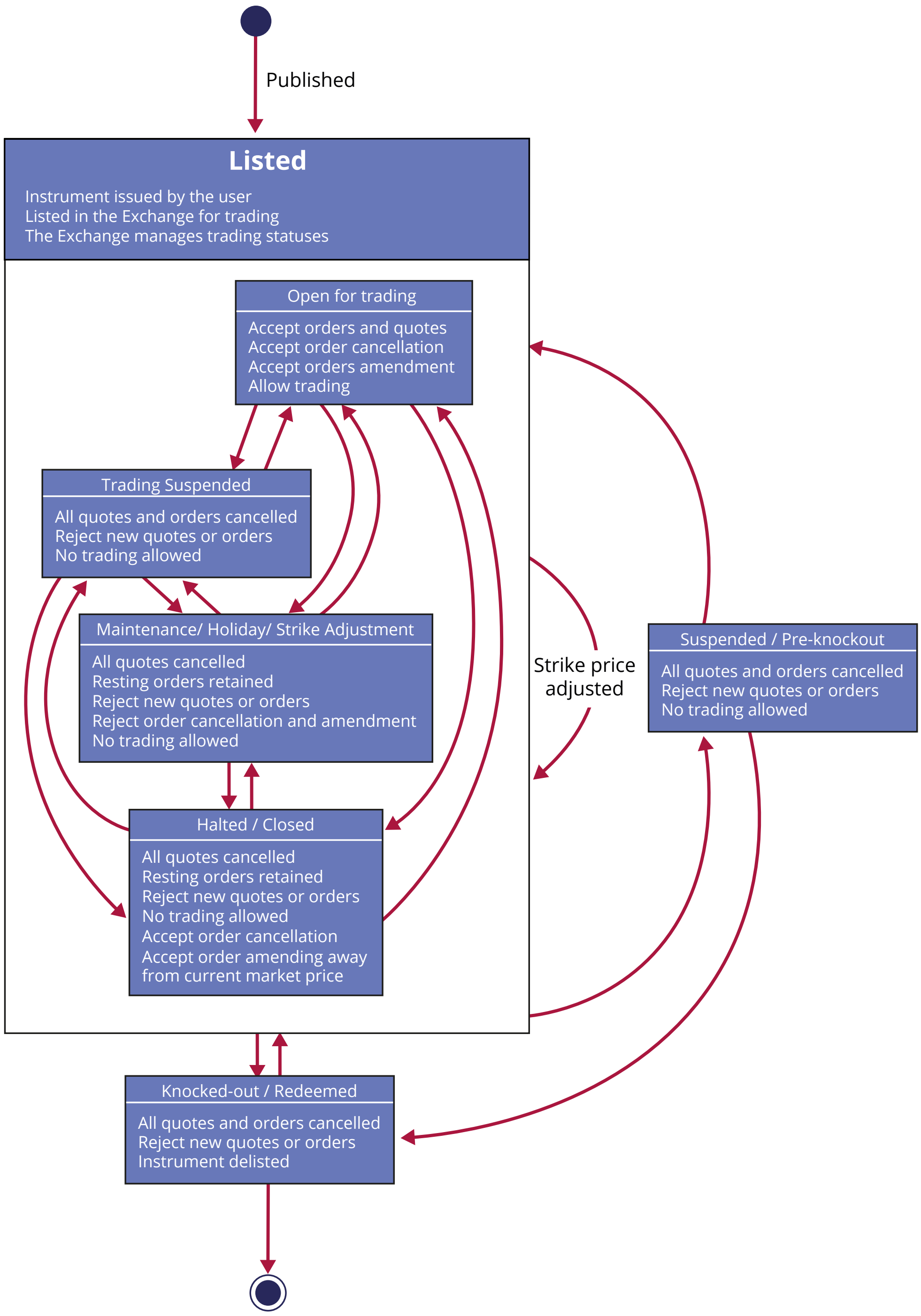
TRADINGSESSIONSTATUSREQUEST (35=G)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
335	TradSesReqID	Y	The unique identifier of this request.
1301	MarketID	Y	The Market Identifier Code (MIC) of the Exchange.
263	SubscriptionRequestType	Y	• 0 = Snapshot • 1 = Snapshot and Subscribe • 2 = Unsubscribe
	<Standard Message Trailer>		

TRADING SESSION STATUS (35=H)

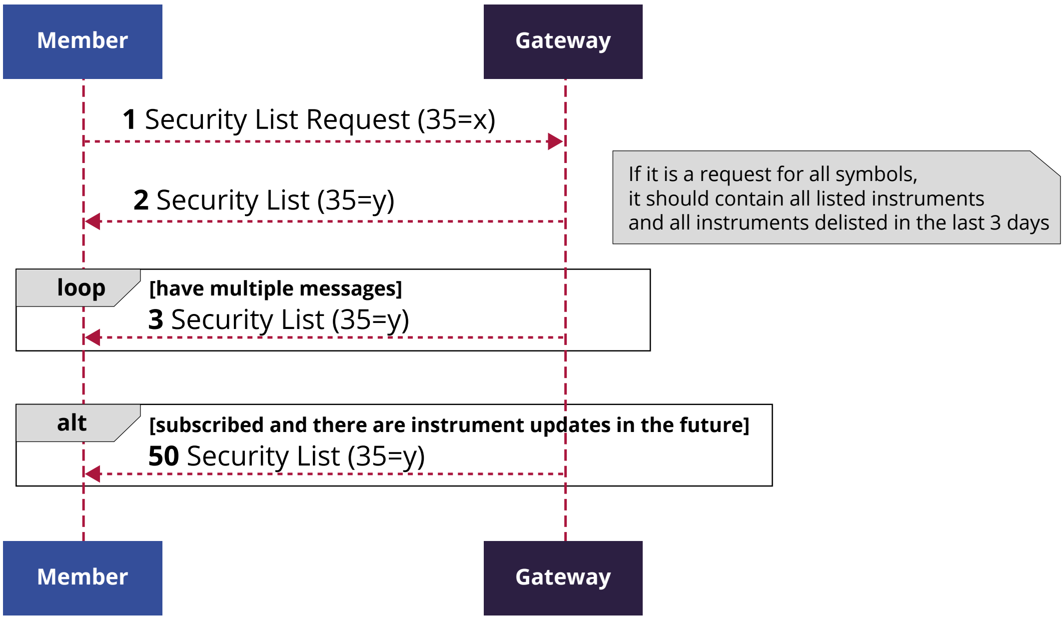
TAG	NAME	REQ'D	NOTES
			<Standard Message Header>
335	TradSesReqID	C	Required if it is a response to a previous TradingSessionStatusRequest (35=g) The unique identifier of a previous Trading Session Status Request (35=g) message
1301	MarketID	Y	The Market Identifier Code (MIC) of the Exchange
336	TradingSessionID	N	• 1 = Day • 2 = HalfDay • 3 = Morning • 4 = Afternoon • 5 = Evening • 6 = After-hours • 7 = Holiday
325	UnsolicitedIndicator	Y	Indicates if the message is sent as a result of a request. • Y = Unsolicited (non-request) • N = solicited (request)
340	TradSessStatus	Y	• 0 = Unknown • 1 = Halted • 2 = Open for trading • 3 = Closed • 6 = Request Rejected
567	TradSesStatusRejReason	C	Required if TradSessStatus (340) is 6 = Request Rejected • 1 = Unknown or invalid TradingSessionID • 99 = Other
58	Text	N	Any message from the Exchange
			<Standard Message Trailer>

INSTRUMENT LIFECYCLE



SECURITY LIST

Security List is an aggregation of instrument definitions. It is useful when a Member wants to get all instrument definitions, or expect to get numerous instrument definitions in one go. The Member should send a Security List Request (35=x) message to the gateway.



The Gateway will acknowledge this message by sending one or more Security List (35=y) messages, because the gateway divides the list of instruments into chunks, and each chunk will construct a Security List (35=y) message so as to avoid an excessively large Security List (35=y) message. Also the Security List (35=y) message for all instruments include all listed instrument plus all instruments in the last 3 days. Please note that a single instrument will also be sent using Security List (35=y) message as a list of one instrument. The subscribed Members will be sent Security List (35=y) messages for new instruments.

SECURITY LIST REQUEST (35=X)

TAG	NAME	REQ'D	NOTES
			<Standard Message Header>
320	SecurityReqID	Y	The unique identifier of this request • 0 = SymbolPENDING • 4 = All
559	SecurityListRequestType	Y	4 = All
55	Symbol	C	PENDINGRequired if SecurityListRequestType (559) is 0 = Symbol
48	SecurityID	C	PENDINGRequired if SecurityListRequestType (559) is 0 = Symbol
22	SecurityIDSource	C	PENDINGRequired if SecurityListRequestType (559) is 0 = Symbol 8 = Exchange Symbol
263	SubscriptionRequestType	Y	• 0 = Snapshot • 1 = Snapshot and subscribe • 2 = Unsubscribe
5000	IncludesDemoInstrument	N	Default to 0 • 0 = Include Live Instruments only • 1 = Include Demo Instruments • 2 = Include all Instruments
			<Standard Message Trailer>

SECURITY LIST (35=Y)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
964	SecurityReportID	Y	The unique identifier of the Security report. In the case of a fragmented report in multiple Security List (35=y), the SecurityReportID (964) of each fragment would be the same
1465	SecurityListID	Y	The unique identifier of this Security List (35=y) message
320	SecurityReqID	C	Required if this is a response to a previous Security List Request (35=x) The unique identifier of a previous Security List Request (35=x) message
560	SecurityRequestResult	C	Required if this is a response to a previous Security List Request (35=x) • 0 = Valid • 2 = Not found • 3 = Not authorised • 4 = Unavailable
1301	MarketID	Y	The Market Identifier Code (MIC) of the Exchange
393	TotNoRelatedSym	Y	The total number of instrument included in the specified SecurityReportID (964)
893	LastFragment	Y	• N = Not last fragment • Y = Last fragment or not fragmented
146	NoRelatedSym	Y	The number of instruments included in this message
> 55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
> 48	SecurityID	Y	Exchange-assigned unique identifier of the instrument
> 22	SecurityIDSource	Y	8 = Exchange Symbol
> 454	NoSecurityAltID	N	The number of repeatable SecurityAltID (455)
> > 455	SecurityAltID	Y	The Alternate ID of the Security
> > 456	SecurityAltIDSource	Y	4 = ISIN number
> 461	CFICode	Y	Taxonomy used to classify the financial instrument Please refer to ISO 10962 or Appendix 6-D (from www.fixtrading.org)
> 541	MaturityDate	C	Date when the Turbo Warrant is redeemed or knocked out Required if SecurityStatus (965) = 6 (knocked-out) or 965 = 102 (redeemed)
> 965	SecurityStatus	Y	• 6 = KNOCKED_OUT • 9 = SUSPENDED • 100 = LISTED • 101 = PRE_KNOCKOUT • 102 = REDEEMED
> 225	IssueDate	Y	Date instrument was issued
> 228	Factor	Y	The size of Turbos that make up 1 underlying. So if the underlying is 1000, the cost of the Turbo is 50, then Ratio = 1000/50=20
> 202	StrikePrice	Y	The strike price of the Turbo Warrant
> 20000	BarrierPrice	Y	The barrier is the level at which the strike is knocked out
> 1479	StrikePriceBoundaryMethod	Y	• 1 = Less than underlying price is in-the-money (ITM) • 3 = Equal to the underlying price is in-the-money (ITM) • 5 = Greater than underlying is in-the-money (ITM)
> 231	ContractMultiplier	Y	The lot size of the instrument. Always be 1

TAG				NAME	REQ'D	NOTES
>	969			MinPriceIncrement	Y	Tick size. The minimum increment of the market price
>	1146			MinPriceIncrementAmount	Y	Tick value. The cash value of a tick MinPriceIncrementAmount (1146) = MinPriceIncrement (969) x ContractMultiplier (231)
>	1193			SettlMethod	Y	Always be C = Cash Settlement
>	1194			ExerciseStyle	Y	• 0 = European • 99 = Other
>	201			PutOrCall	Y	• 0 = Put (Short Turbo Warrant) • 1 = Call (Long Turbo Warrant)
>	106			Issuer	Y	The name of the Instrument Issuer
>	2737			FinancialInstrumentShortName	Y	The short name of the security, as in abbreviated name. Nothing to do with the direction of the Turbo
>	2714			FinancialInstrumentFullName	Y	The long name of the security
>	107			SecurityDesc	Y	The display full name of the instrument
>	873			DatedDate	Y	Date of Instruments eligible for listing
>	2578			OrigStrikePrice	C	Required if StrikePrice (202) was updated by the Issuer
>	5002			IsTestInstrumentIndicator	N	Default to N • Y = This is a Test Instrument for system testing • N = This is a customer-facing Instrument
>	5003			IsDemoInstrumentIndicator	Y	• Y = This is a Demo Instrument for trading simulation • N = This is a Live Instrument
>	870			NoInstrAttrib	N	Number of repeating InstrAttribType (871) entries
>	>	871		InstrAttribType	Y	Please refer to <Instrument Attribute Types> for all possible types
>	>	872		InstrAttribValue	Y	The attribute value
>	711			NoUnderlyings	N	The number of underlyings
>	>	311		UnderlyingSymbol	Y	The Issuer-assigned symbol for the Underlying. This can be used to uniquely identify the Underlying
>	>	309		UnderlyingSecurityID	Y	The Issuer-assigned identifier for the Underlying. As UnderlyingSecuritySource (305) could change over time, this could also change and should not be used as unique idenitifer
>	>	305		UnderlyingSecuritySource	Y	• 1 = CUSIP • 2 = SEDOL • 4 = ISIN • 5 = RIC • 6 = ISO Currency Code • 7 = ISO Country Code • 8 = Exchange Symbol • A = Bloomberg Symbol
>	>	457		NoUnderlyingSecurityAltID	N	The number of Underlying Security Alternate IDs
>	>	>	458	UnderlyingSecurityAltID	Y	The Alternate ID of the Underlying Security
>	>	>	459	UnderlyingSecurityAltIDSource	Y	• 1 = CUSIP • 2 = SEDOL • 4 = ISIN • 5 = RIC • 6 = ISO Currency Code • 7 = ISO Country Code • 8 = Exchange Symbol • A = Bloomberg Symbo
>	15			Currency	Y	Currency in which the notional is denominated
				<Standard Message Trailer>		

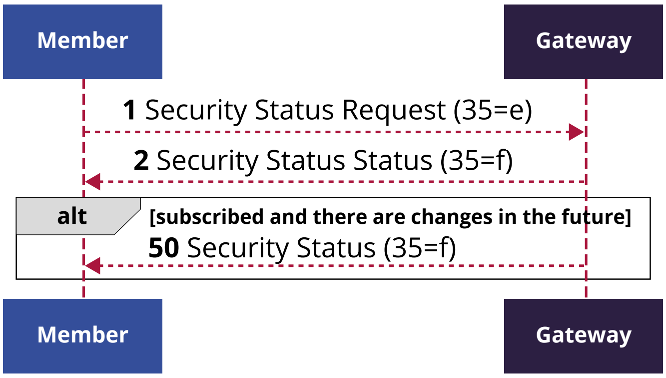
INSTRUMENT ATTRIBUTE TYPES

TYPE	NAME	REQ'D	FORMAT/TYPE	NOTES
600	Commodities or emission allowance derivative indicator	Y	• Y = yes • N = no	Indication as to whether the financial instrument falls within the definition of commodities derivative under Article 2(1)(30) of Regulation (EU) No 600/2014 or is a derivative relating to emission allowances referred to in Section C(4) of Annex I to Directive 2014/65/EU. Flag is "true" for commodity turbo warrants, otherwise always 'false'. Turbo warrants with commodity underlying are part of the instruments listed in MiFIR Art 2 (1) (30) i.e Commodity derivatives definition.
601	Request for admission to trading by issuer	Y	• Y = yes • N = no	Whether the issuer of the financial instrument has requested or approved the trading or admission to trading of its financial instrument on a trading venue. Should be populated with 'true' in the current set up for authorisation for trading. IG issuer has to sent a request for authorisation for trading to the Exchange.
602	Date of admission to trading or date of first trade	N	UTCTimestamp	Date and time of the admission to trading on the trading venue or the date and time when the instrument was first traded or an order or quote was first received by the trading venue. To be populated with date of first trade.
603	Termination date	N	UTCTimestamp	Date and time when the financial instrument ceases to be traded or to be admitted to trading on the trading venue. Where this date and time is unavailable, the field shall not be populated. Where this date and time is not yet known, the field shall not be populated. To be populated as the case may be, even if optional.
604	Base Product	C	String	Required only for commodity warrant. Base product for the underlying asset class as specified in the classification of commodities derivatives table. Only values in the 'Base product' column of the classification of commodities derivatives table are allowed. See table 2 of RTS 3 , only for Commodities derivatives , should contain one of the following: INSTRUMENT: Spot gold/Base product: "METL" INSTRUMENT:Spot silver/ Base product:"METL" INSTRUMENT:OIL (Nymex)/Base product:"NRGY" INSTRUMENT:OIL (Brent)/Base product: "NRGY" INSTRUMENT:Natural Gas/Base product: "NRGY".
605	Sub product	C	String	Required only for commodity warrant. The Sub Product for the underlying asset class as specified in the classification of commodities derivatives table. Field requires a Base product. Only values in the 'Sub product' column of the classification of commodities derivatives table are allowed. See table 2 of RTS 3 , only for Commodities derivatives, should contain one of the following: INSTRUMENT: Spot gold/Sub product: "PRME" INSTRUMENT:Spot silver/Sub product: "PRME" INSTRUMENT:OIL (Nymex)/Sub product: "OILP" INSTRUMENT:OIL (Brent)/Sub product: "OILP" INSTRUMENT:Natural Gas /Sub product: "NGAS".

TYPE	NAME	REQ'D	FORMAT/TYPE	NOTES
606	Further sub product	C	String	Required only for commodity warrant. The Further sub product for the underlying asset class as specified in the classification of commodities derivatives table. Field requires a Sub product. Only values in the 'Further sub product' of the classification of commodities derivatives table are allowed. See table 2 of RTS 3 , only for Commodities derivatives , should contain one of the following: INSTRUMENT: Spot gold/Further Sub product: "GOLD" INSTRUMENT:Spot silver/Further Sub product: "SLVR" INSTRUMENT:OIL (Nymex)/Further Sub product: - INSTRUMENT:OIL (Brent)/Further Sub product: "BRNT"/"BRNX" INSTRUMENT:Natural Gas/Further Sub product: "GASP": Gaspool/"LNGG": LNG/ "NBPG": NBP /"NCGG": NCG /"TTFG": TTF.

SECURITY STATUS

The Member could request and subscribe for the status of a tradable instrument by sending a Security Status Request (35=e) message to the gateway. The SecurityID (48) is used as a unique identifier of the instrument.



The Gateway will acknowledge this message by sending a Security Status (35=f) message to the Member. The subscribed Member will be sent Security Status (35=f) message when the status has changed. Security Status subscription is managed per instrument.

SECURITY STATUS REQUEST (35=E)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
324	SecurityStatusReqID	Y	The unique identifier of this request
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
263	SubscriptionRequestType	Y	• 0 = Snapshot • 1 = Snapshot and subscribe • 2 = Unsubscribe
	<Standard Message Trailer>		

SECURITY STATUS (35=F)

TAG	NAME	REQ'D	NOTES
	<Standard Message Header>		
324	SecurityStatusReqID	N	Required if this is a response to a previous Security Status. The unique identifier of a previous Security Status Request (35=e) message
48	SecurityID	Y	Exchange-assigned identifier of the instrument
22	SecurityIDSource	Y	8 = Exchange Symbol
75	TradeDate	C	Business Date of the Exchange Required if SecurityTradingStatus (326) != 20 (Unknown or invalid symbol)
325	UnsolicitedIndicator	Y	Indicates if the message is sent as a result of a subscription request or snapshot request • Y = Unsolicited (subscription) • N = solicited (snapshot)
326	SecurityTradingStatus	Y	• 2 = Halted • 17 = Open for trading • 18 = Closed • 20 = Unknown or invalid symbol • 100 = Under maintenance • 101 = On holiday • 102 = Strike under adjustment • 103 = Suspended
60	TransactTime	Y	Time this request was processed or when the status changed
58	Text	N	Detailed message from the Exchange when SecurityTradingStatus(326) = 20 (unknown or invalid symbol)
	<Standard Message Trailer>		

L1/L2 DATA

Market Data could be a two-sided book of orders or a list of trades, or both. The Member could request a snapshot of the market data, and optionally subscribe to receive future updates, by sending a Market Data Request (35=V) message to the gateway.

There are several request options that affect the market data the Member will receive:

MARKET DEPTH (264)

0 = Full Book : shows all orders

Order Book (Full Book)

BUY	SELL
15@10.0 10:00:01am	20@15.0 10:00:01am
10@9.0 09:59:35am	15@18.0 09:59:12am

1 = Top Book : L1 prices only

Order Book (Top Book)

BUY	SELL	LAST TRADE	OPENING	CLOSING	HIGH	LOW	VWAP	TRADE VOLUME
15@10.0 10:00:01am	20@15.0 10:00:01am	25@12.0 09:58:52am	13.0 09:00:12am		16.0 09:35:47am	10.0 10:00:01am	12.5 09:58:52am	100 09:58:52am

Apart from the above, the Member can specify the instrument required using the repeatable group of Symbol (35) tags.
The request should allow the following rules:

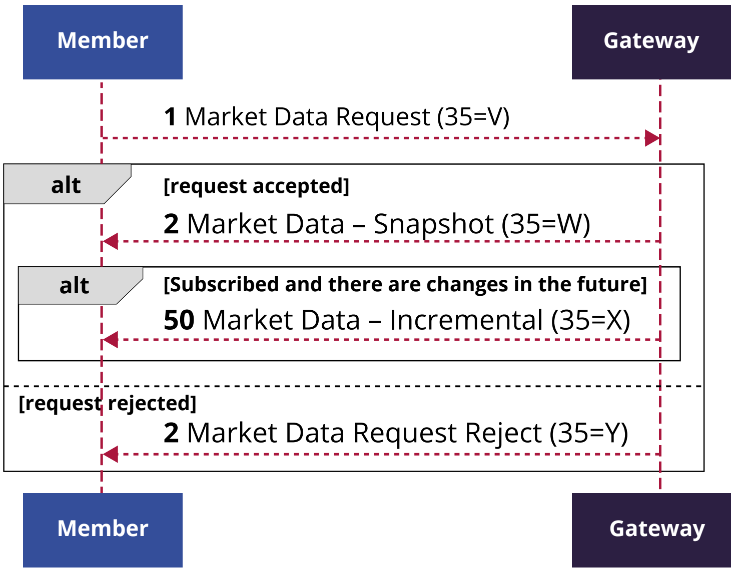
1. Only one symbol per request is allowed. Requests contain multiple symbols will be rejected.

2. A separate request is required if the Member intend to receive different depths of the same entry types.

3. Only one request per depth per symbol is allowed. Duplicate requests will be rejected.

SUPPORTED COMBINATIONS OF MARKET DEPTH AND MD ENTRY TYPES

	0 = FULL BOOK	1 = TOP OF BOOK
0 = Bid	✔	✔
1 = Offer	✔	✔
2 = Last Trade	✖	✔
4 = Opening Price	✖	✔
5 = Closing Price	✖	✔
7 = Trading Session High Price	✖	✔
8 = Trading Session Low Price	✖	✔
9 = Volume Weight Average Price	✖	✔
B = Trade Volume	✖	✔



The Gateway will acknowledge this message by sending a Market Data – Snapshot (35=W) message for each instrument to the Member. <u>Please note that the entries in the message is not ordered.</u>

If it was a subscription request, the Member will be sent either a Market Data – Incremental (35=X) for an instrument whose subscribed market data have changed. Market Data – Incremental (35=X) message contains only the changes in the order book and Market Data – Snapshot (35=W) message always contain the full snapshot of the latest order book.

SUBSCRIPTION MANAGEMENT

Market Data subscription is managed per instrument with only one symbol per request supported. Duplicate subscriptions will be rejected, a duplicate is defined as

1. Using a MDReqId which is already in use for an active subscription.

2. Multiple subscriptions to the same instrument of the same Depth. Depth being defined via MarketDepth (264).

Unsubscribing is achieved using the MDReqID supplied during subscription, this will unsubscribe to ALL options in the original request. Partial unsubscribe or subscription amendment is not supported.

E.g. If your original subscription is for TEST_SYMBOL, FULL_BOOK, BID, OFFER. Then it is not allowed to only unsubscribe from BID updates. If the Member intends to change the way of subscription, e.g. Market Depth (264) or MDUpdateType (265), it is required to unsubscribe the instrument entirely by supplying the MDReqId.

MARKET DATA REQUEST (35=V)

TAG		NAME	REQ'D	NOTES
		<Standard Message Header>		
262		MDReqID	Y	The unique identifier of this request
263		SubscriptionRequestType	Y	• 0 = Snapshot • 1 = Snapshot and subscribe • 2 = Unsubscribe
264		MarketDepth	Y	• 0 = Full book • 1 = Top book
265		MDUpdateType	N	Applicable only if SubscriptionRequestType (263) is 1 = Snapshot + Updates • 1 = Incremental refresh
266		AggregatedBook	N	• N = book entries should not be aggregated
267		NoMDEntryTypes	Y	Number of MDEntryTypes tags required
>	269	MDEntryType	Y	• 0 = Bid • 1 = Offer • 2 = Last Trade • 4 = Opening Price • 5 = Closing Price • 7 = Trading Session High Price • 8 = Trading Session Low Price • 9 = Volume Weight Average Price • B = Trade Volume
146		NoRelatedSym	Y	Number of symbols (instruments) required
>	55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
>	48	SecurityID	Y	Exchange-assigned identifier of the instrument
>	22	SecurityIDSource	Y	8 = Exchange Symbol
		<Standard Message Trailer>		

MARKET DATA – SNAPSHOT (35=W)

TAG		NAME	REQ'D	NOTES
		<Standard Message Header>		
	264	MarketDepth	Y	• 0 = Full book • 1 = Top book
	262	MDReqID	Y	The unique identifier of a previous Market Data Request (35=V) message
	55	Symbol	Y	Exchange-assigned human-readable symbol of the instrument
	48	SecurityID	Y	Exchange-assigned identifier of the instrument
	22	SecurityIDSource	Y	8 = Exchange Symbol
	268	NoMDEntries	Y	The number of repeatable market data entries
>	269	MDEntryType	Y	• 0 = Bid • 1 = Offer • 2 = Last Trade • 4 = Opening Price • 5 = Closing Price • 7 = Trading Session High Price • 8 = Trading Session Low Price • 9 = Volume Weight Average Price • B = Trade Volume
>	278	MDEntryID	Y	The unique identifier of the entry within the message
>	270	MDEntryPx	C	The price of this entry. Required only if the value exists • 0 = Bid • 1 = Offer • 2 = Last Trade • 4 = Opening Price • 5 = Closing Price • 7 = Trading Session High Price • 8 = Trading Session Low Price • 9 = Volume Weight Average Price
>	271	MDEntrySize	C	The quantity of this entry. Required only if the value exists • 0 = Bid • 1 = Offer • 2 = Trade • B = Trade Volume
>	272	MDEntryDate	C	Date the entry was last updated or added. Required only if either MDEntryPx (270) or MDEntrySize (271) exists
>	273	MDEntryTime	C	Time the entry was last updated or added. Required only if either MDEntryPx (270) or MDEntrySize (271) exists
>	299	QuoteEntryID	C	Required only if 1. This is an entry originated from a previous Mass Quote (35=i) message of the same firm; AND 2. The consumer of this message is the originator of this entry. The unique identifier of the quote entry. Any subsequent execution will use this identifier as Client Order ID (11) in the Execution Report (35=8)
		<Standard Message Trailer>		

MARKET DATA – INCREMENTAL REFRESH (35=X)

TAG		NAME	REQ'D	NOTES
				<Standard Message Header>
262		MDReqID	Y	The unique identifier of a previous Market Data Request (35=V) message that was used for subscription
268		NoMDEntries	Y	The number of repeatable market data entries
>	279	MDUpdateAction	Y	• 0 = New • 1 = Change • 2 = Delete
>	269	MDEntryType	Y	• 0 = Bid • 1 = Offer • 2 = Last Trade • 4 = Opening Price • 5 = Closing Price • 7 = Trading Session High Price • 8 = Trading Session Low Price • 9 = Volume Weight Average Price • B = Trade Volume
>	278	MDEntryID	Y	The unique identifier of the entry within the message
>	270	MDEntryPx	C	The price of this entry. Required if MDUpdateAction (279) is 0 = New
>	271	MDEntrySize	C	The quantity of this entry. Required if MDUpdateAction is 0 = New
>	272	MDEntryDate	C	Date the entry was last updated or added. Required only if the MDUpdateAction is 0 = New or 1 = Change
>	273	MDEntryTime	C	Time the entry was last updated or added. Required only if the MDUpdateAction is 0 = New or 1 = Change
>	299	QuoteEntryId	C	Required only if 1. This is an entry originated from a previous Mass Quote (35=i) message of the same firm 2. The consumer of this message is the originator of this entry 3. MDUpdateAction (279) is 0 = New or 1 = Change The unique identifier of the quote entry. Any subsequent execution will use this identifier as Client Order ID (11) in the Execution Report (35=8)
				<Standard Message Trailer>

MARKET DATA REQUEST REJECT (35=Y)

TAG	NAME	REQ'D	NOTES
			<Standard Message Header>
262	MDReqID	Y	The unique identifier of a previous Market Data Request (35=V) message
281	MDReqRejReason	Y	• 0 = Unknown symbol • 1 = Duplicate MD Request ID • 3 = Insufficient permissions • 4 = Unsupported subscription type • 5 = Unsupported market depth • 7 = Unsupported aggregated book • 8 = Unsupported MD Entry Type
58	Text	N	Detailed description for the rejection
			<Standard Message Trailer>

STANDARD MESSAGE HEADER

The message header identifies the source and destination to route the message and replies. Additionally, it specifies the message type and provides integrity checks. To properly support timestamp validations, all parties must synchronise system clocks to standard references.

TAG	NAME	REQ'D	NOTES
8	BeginString	Y	Must be FIXT.1.1
9	BodyLength	Y	Must be second tag in message
35	MsgType	Y	Must be third tag in message
1128	ApplVerID	N	Must be 9 = FIX50SP2
1129	CstmApplVerID	N	Not used
49	SenderCompID	Y	Assigned value used to identify sender of message
56	TargetCompID	Y	Assigned value used to identify receiver of message
115	OnbehalfOfCompID	N	Trading partner company ID used when sending messages via a third party
128	DeliverToCompID	N	Trading partner company ID used when sending messages via a third party
90	SecureDataLen	N	Not supported
91	SecureData	N	Not supported
34	MsgSeqNum	Y	Message sequence number
50	SenderSubID	N	Not used
142	SenderLocationID	N	Sender's LocationID (i.e. geographic location and/or desk)
57	TargetSubID	N	Not used
143	TargetLocationID	N	Trading partner's geographic location and/or desk
116	OnBehalfOfSubID	N	Trading partner SubID used when delivering messages via a third party
144	OnBehalfOfLocationID	N	Trading partner LocationID (i.e. geographic location and/or desk) used when delivering messages via a third party
129	DeliverToSubID	N	Trading partner SubID used when delivering messages via a third party
145	DeliverToLocationID	N	Trading partner's geographic location and/or desk. Used when delivering messages via a third party
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number
52	SendingTime	Y	Expressed in GMT
122	OrigSendingTime	N	Required for message resent as a result of a Resend Request (2) message. If data is not available set to same value as SendingTime (52)
347	MessageEncoding	N	Not supported
369	LastMsgSeqNumProcessed	N	The last MsgSeqNum (34) value received and processed. Can be specified on every message sent. Useful for detecting a backlog with counterparty

STANDARD MESSAGE TRAILER

TAG	NAME	REQ'D	NOTES
93	SignatureLength	N	Not supported
89	Signature	N	Not supported
10	Checksum	Y	Three byte, simple checksum

PARTIES

This block is used to identify the entities required for the financial transaction and information.

TAG		NAME	REQ'D	NOTES
453		NoPartyIDs	Y	The number of parties contained
>	448	PartyID	Y	The unique identifier of the entity
>	447	PartyIDSource	Y	D = Exchange member or End Client Account identifier N = Legal Entity Identifier Q = National ID
>	452	PartyRole	Y	The type of the entity 1 = Executing Firm 3 = Client ID 12 = Executing Trader 17 = Contra Firm 29 = Intermediary (Broker) 30 = Agent (Router/Hub) 66 = Market Maker

SPECTRUM MTF OPERATOR GMBH
Westhafenplatz 1, 60327 Frankfurt, Germany
T +49 69 42 72 991 80
E info@spectrum-markets.com
W spectrum-markets.com

Spectrum, FIX Rules of Engagement v1.0.2a, September 2020