FX Aggregator

FIX Specification

Version: 2.0.2
Date: 18/08/2015

Contents

1 Document History

Version	Date	Comments
1.0	10.09.2009	The basic version
1.0.1	06.11.2009	In the Market Data – Snapshot/Full Refresh message field 278 (MDEntryID) has been changed to field 299 (QuoteEntryID).
1.1.0	03.03.2010	The Field 585 (MassStatusReqType) of OrderMassStatusRequest message (35=AF) now can take the value 100 – active orders only.
1.1.1.	10.03.2010	Some typos in values of MsgType and tag numbers of SecurityList message has been corrected.
1.2.0	25.02.2011	The new tag 11010 (MarketDataType) and new modes of quotes receiving has been added.
1.2.1	01.03.2011	The order status "Suspended" has been removed.
1.2.2	30.06.2011	New values for TimeInForce field were added. DeliverToCompID field was added.
1.2.3.	20.07.2011	The field containing value (settlement) date was added to quotes and to list of instruments.
1.3.0.	01.02.2012	The field 276 (Quote condition) has been added in MarketData-Snapshot/FullRefresh and MarketData-Incremental Refresh. Value 1 (Top of Book) for the field 264 (Market Depth) has been added in the MarketDataRequest. Field 1 (Account) has been added in NewOrderSingle, ExecutionReport, TradeCaptureReport messages.
1.3.1	10.09.2012	Section 5.1 is modified
1.3.2	20.05.2013	New field ContractMultiplier has been added
1.3.3	01.07.2013	Multi-stream pricing mode (with StreamID filed) was added. RefPrice field was added in NewOrderSingle and ExecutionReport.
1.3.4	12.09.2013	TradeDate and TransactTime were added to ExecutionReport
1.3.5	18.12.2013	Changed document layout, accompanying text typos were corrected, added 35 and 231 tag (ContractMultiplier) to Execution report and Trade capture Record messages, changed order's patterns.
2.0.0	24.01.2014	The field 264 (MarketDepth) of Market Data Request message (35=V) now can take value N – number of tiers. Excluded from this version: Order Mass Status Request (chapter 6.3), Trade Capture Report (chapter 6.4). Field's 150 (ExecutionType) of Execution Report message (35=8) value 2 – Fill changed to F –Trade, excluded values: 6 – Pending Cancel, A – Pending New, E – Pending Replace, I – Order Status; From field 39 of the same message values excluded: 6 – Pending Cancel, A – Pending New, E – Pending Replace. In case if you were using our old documentation all excluded values will still be working if necessary.
2.0.1	29.05.2015	In ExecutionReport message new optionary tags were added 11033

		(BaseCcy), 11034 (BaseQty), 11035 (TermCcy), 11036 (TermQty) to state base amount and counter amount and currency of the last deal.
2.0.2	18.08.2015	Tag 15 (currency) was added in New Order Single, Execution Report section.

2 Introduction

The present document describes the Financial Information Exchange (FIX) interface for trading currencies with the FX Aggregator system. It specifies the subset of FIX messages and fields supported by the interface. It is recommended to be read together with the FIX Protocol Specification. The FIX interface of the FX Aggregator system is based on ver. 4.4 of the FIX Protocol Specification.

FIX interface supports the following business functions:

- Receiving the list of trading tools and their specifications
- Receiving the “book” of orders on each trading tool
- Placing / changing and cancelling of orders
- Receiving reports on performed deals

The following sections describe the FIX sessions used by clients to communicate with the Aggregator FX system and the format of messages used in this protocol.

3 Connectivity

FX Aggregator uses SSL protocol to protect information from an unauthorized access. Clients are responsible for initiating connections to the FX Aggregator server using SSL. Once a connection is established, client should verify an identity of the server using the SSL certificate and then initiate the normal FIX logon process.

FX Aggregator uses separate connections for market data and order management messages, allowing to apply different settings based on different characteristics of the traffic.

3.1 Market Data Connection (market data session)

A Client establishes Market Data session to receive the list of trading tools and quotes. During this session client requests the list of trading tools (security list), quotes and quote updates. FIX messages sent during the session, can’t be restored. After disconnection and subsequent reconnection the numbers of sent and received messages (sequence numbers) will be reset to 1. The system doesn’t try to restore the undelivered messages after disconnect. Client should re-request from FX Aggregator order book updates for each instrument he uses.

3.2 Order Management Connection (trade session)

During this connection clients submit orders and receive execution and trade reports in return, which indicate the completion of each trade. Messages sent over the Order Execution session are recoverable. When TCP connections fails and restarts each side of the session must recover any potentially lost messages using standard FIX protocols. Sequence numbers are going to be reset only at the end of the trading session.

To get access to Aggregator FX using FIX protocol a client must have TargetCompId and SenderCompId for each session.

Each client must also have a mechanism for synchronizing its system time. This will help to ensure that FX Aggregator timestamps are in time sequence relative to client timestamps.

4 Session Management

The FX Aggregator interface supports the standard FIX session protocol, including all of the following session messages:

– Heartbeat (MsgType = 0);
– Logon (MsgType = A);
– Test Request (MsgType = 1);
– Resend Request (MsgType = 2);
– Reject (MsgType = 3);
– Sequence Reset (MsgType = 4);
– Logout (MsgType = 5).

Standard Message Headline

Tag	Field Name	Req'd	Type	Пример
8	BeginString	Y	String	FIX.4.4
9	BodyLength	Y	Length	527
34	MsgSeqNum	Y	SeqNum	1
35	MsgType	Y	String	A
49	SenderCompID	Y	String	'COMPANY'
52	SendingTime	Y	UTCTimeStamp	20090909-09:52:53.927
56	TargetCompID	Y	String	'FXAGGR'
128	DeliverToCompID	N	String	Идентификатор контрагента, если требуется. Например: 'Alfabank'

Standard Message Trailer

Tag	Field Name	Req'd	Type	Examle
10	CeckSum	Y	String	205

Logon

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = A
108	HeartBtInt	Y	int	Heartbeat interval in seconds.
98	EncryptMethod	Y	int	Only 0=None is supported
141	ResetSeqNumFlag	C	Boolean	Must be set to N for trade session Must be set to Y for data session
Standard Trailer		Y		

Client receive TradingSessionStatus message for each session right after successful Logon. Client should not send any requests until receiving this message.

TradingSessionStatus

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = h
336	TradingSessionID	Y	String	Session name. Can take “Market Data” or ”Trade” notions.
340	TradSesStatus	Y	int	In current version is always 2 – Open. In future versions other session statuses are possible.
58	Text	Y	String	Contains gateway version number in the form of «ver. 1.0.0», where first two groups of numbers display the version of documentation.
11020	CAList	N	String	List of available counterparties, separated by «;» symbol. Example 1: Alfabank Example 2: Hotspot, Currenex; FXAll
Standard Trailer		Y		

5 Market Data

5.1 Message Flow

The following messages are sent by the client to FX Aggregator:

– Market Data Request

– Security List Request

The following messages are sent by FX Aggregator to the client:

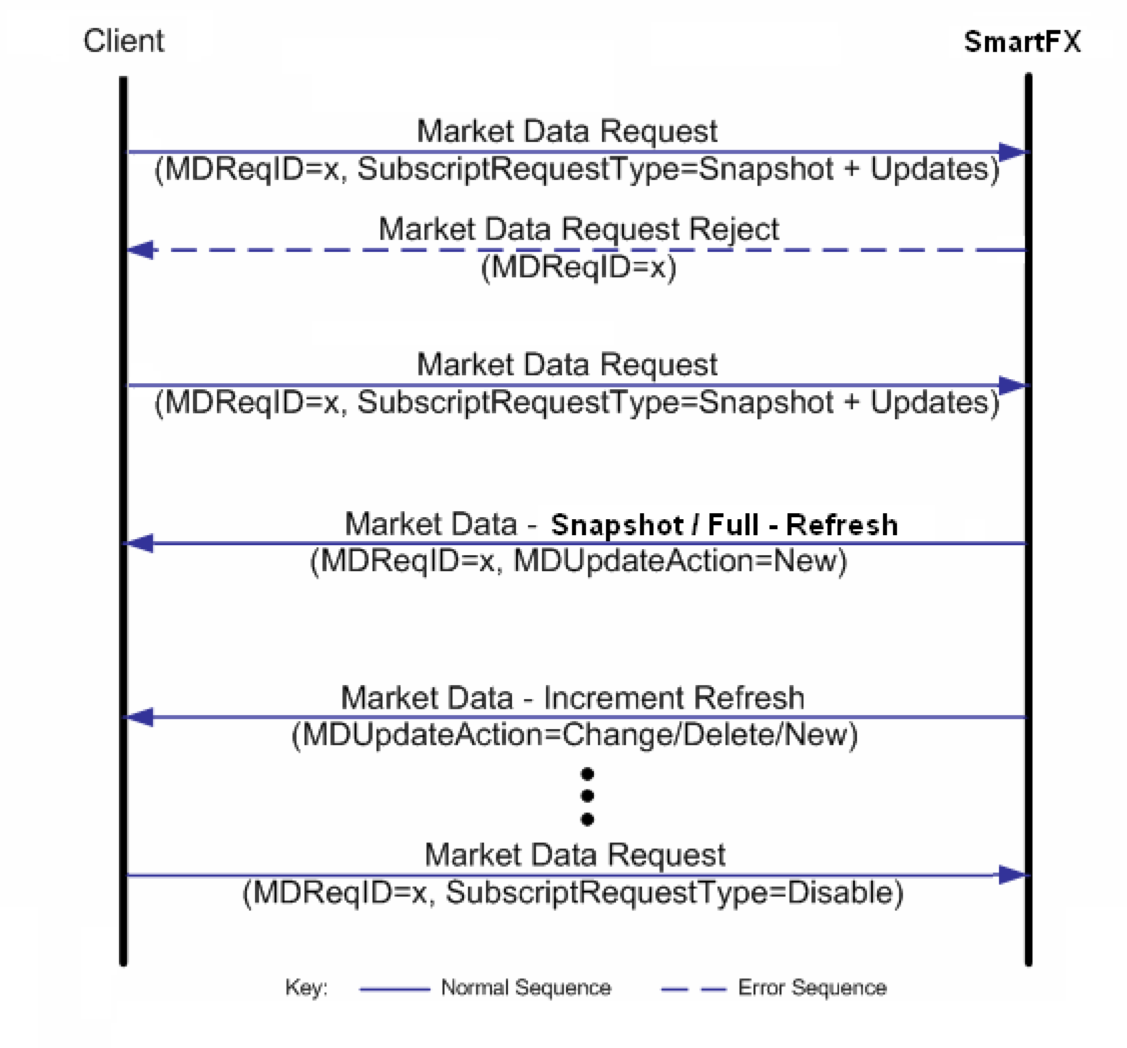
– Market Data Request Reject

– Market Data – Snapshot / Full Refresh

– Market Data - Incremental Refresh

– Security List

A typical market data message flow between the client and FX Aggregator is shown below:



Note that the *Market Data – Snapshot / Full Refresh* message can be received not only after *Market Data Request* message, but at any moment of the streaming process. This can happen due to full quote refresh or changes of quote receiving mode. After receiving *Market Data – Snapshot / Full Refresh* message all previously received quotes are considered invalid.

An unplanned *Market Data – Snapshot / Full Refresh* message receiving is quite rare, usually that take place a couple of times a day.

All quotes are translated in Bands mode. At that mode quotes represent a group of available for Client amounts and correspondent prices for each amount. Client can make deal only for one of available amounts.

Example: Client wants to buy 2 000 000 of EUR/USD. At the moment he receives the following quotes:

Price	Amount
1.3520	1 000 000
1.3521	3 000 000
1.3522	5 000 000
1.3524	10 000 000

Client can buy 2 000 000 EUR/USD at 1.3521.

5.2 Message Format

Market Data Request

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = V
262	MDReqID	Y	String	Unique request ID
263	SubscriptionRequest Type	Y	char	Supported types: 1 — Snapshot Plus Updates 2 — Disable Previous Snapshot plus Update Request
264	MarketDepth	Y	int	Supported values: 0 — Full Book 1 – Top of Book* N — Number of Tiers
265	MDUpdateType	Y	int	Supported types: 1 — Incremental Refresh
267	NoMDEntryTypes	Y	NumInGroup	Always = 2 (bid and offer)
→ 269	MDEntryType	Y	char	0 – Bid 1 – Offer
146	NoRelatedSym	Y	NumInGroup	Always = 1
→ 55	Symbol	Y	String	Currency pair shown as CCY1/CCY2
11021	StreamID	N	String	The ID for the stream (for multi-stream pricing only)
Standard Trailer		Y		

While using this mode quotes have been sent only by MarketData–Snapshot/FullRefresh messages, message type ‘MarketData–IncrementalRefresh’ is not used in this case.

Market Data – Snapshot/Full Refresh

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = W
262	MDReqID	Y	String	Unique request ID
55	Symbol	Y	String	Currency pair shown as CCY1/CCY2
64	SettlDate	N	LocalMktDate	If received, contains value date for the instrument.
268	NoMDEntries	Y	NumInGroup	A number of quotes (orders in a book): 0, if there are no quotes (orders) 1 or 2 for the ‘Top of Book’ mode (1 best bid, if available, and 1 best offer, if available)
→ 269	MDEntryType	Y	char	Entry type (bid/offer): 0 – Bid 1 – Offer
→ 270	MDEntryPx	Y	Price	Entry price
→ 271	MDEntrySize	Y	Qty	Entry quantity
→ 299	QuoteEntryID	Y	String	Entry ID. Is used in Market Data – Incremental Refresh Message (as tag 278 - MDEntryID) while changing / deleting of entry.
→ 276	QuoteCondition	N	char	Quote status: A – active quote B – indicative quote If absent, the quote is active.
11010	MarketDataType	N	int	Quote mode: 2 – Bands
11021	StreamID	N	String	The ID for the stream (for multi-stream pricing only)
Standard Trailer		Y		

Market Data – Incremental Refresh

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = X
262	MDReqID	Y	String	Unique request ID
64	SettlDate	N	LocalMktDate	If received, contains value date for the instrument.
268	NoMDEntries	Y	NumInGroup	
→ 279	MDUpdateAction	Y	char	MDUpdateAction_NEW = '0' MDUpdateAction_CHANGE = '1' MDUpdateAction_DELETE = '2'
→ 269	MDEntryType	C	char	MDEntryType_BID = '0' MDEntryType_OFFER = '1'

→ 278	MDEntryID	Y	String	Entry ID
→ 280	MDEntryRefID	C	String	ID of changing request. Is being sent only for MDUpdateAction = 1 (Change).
→ 55	Symbol	N	String	Currency pair shown as CCY1/CCY2
→ 270	MDEntryPx	N	Price	Price of entry
→ 271	MDEntrySize	N	Qty	Size of entry
→ 276	QuoteCondition	N	char	Quote status: A – active quote B – indicative quote If absent, the quote is active.
11021	StreamID	N	String	The ID for the stream (for multi-stream pricing only)
Standard Trailer		Y		

Market Data Request Reject

Tag	Field Name	Req'd		Description
Standard Header		Y		MsgType = Y
262	MDReqID	Y	String	Unique request ID
281	MDReqRejReason	Y	char	In current version is always equal to 99 — Unknown Reason
58	Text	Y	String	Error description
11021	StreamID	N	String	The ID for the stream (for multi-stream pricing only)
Standard Trailer		Y		

Security List Request

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = x
320	SecurityReqID	Y	string	Unique request ID
559	SecurityListRequestType	Y	int	Supported values: 0 -SYMBOL
11021	StreamID	N	String	The ID for the stream (for multi-stream pricing only)
Standard Trailer		Y		

Security List

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = y
320	SecurityReqID	Y	string	Unique request ID
322	SecurityResponseID	Y	string	Unique response ID
560	SecurityRequestResult	Y	int	The result of request processing: 0 – Valid Request

				1 – Invalid or Unsupported Request
146	NoRelatedSym		NumInGroup	The number of instruments
→ 55	Symbol	Y	string	Currency pair shown as CCY1/CCY2
→ 64	SettlDate	N	LocalMktDate	If received, contains value date for the instrument.
→ 11001	BasePoint	N	Price	Point size. For example, 0.0001 for EUR/USD
→ 11002	RatePrecision	N	Price	Price precision. For example, 0.0001 for EUR/USD
→ 11003	MinReqQty	N	Qty	Minimal size of order (not limited if this field is empty).
→ 11004	MaxReqQty	N	Qty	Maximal size of order (not limited if this field is empty).
→ 11005	StepReqQty	N	Qty	Minimal step of order changing. For example, if StepReqQty = 10000, then OrderQty = 100000 and OrderQty = 110000 – correct size, and OrderQty = 105000 – incorrect size. Not limited if this field is empty.
58	Text	N	string	Error description
11021	StreamID	N	String	The ID for the stream (for multi-stream pricing only)
Standard Trailer		Y		

6 Trade Session

6.1 Supported orders types and features

FX Aggregator System supports the following order types:

- **Limit**. Executed when market rate reach specific set price.
- **Stop-Loss**. Market order, activation of which is dependent upon a specific price level being reached or surpassed. E.g., a stop-loss buy order becomes a market order when the market rate is at or above the stop price, while a stop-loss sell order becomes a market order when the market rate is at or below the stop price.
- **Market**. Simple order to buy or sell immediately, which is executed at the best current price, available in the system.

Supported Order Expiry Types

- **Good Till Cancel (GTC)**. Orders with this expiry setting remain active until either executed or explicitly canceled by the client.
- **Immediate or Cancel (IOC)**. The order is immediately executed at prices from the whole book available at FX Aggregator. If no match is found, the order or remaining part of it are canceled.

FX Aggregator supports partial execution of orders (partial fills).

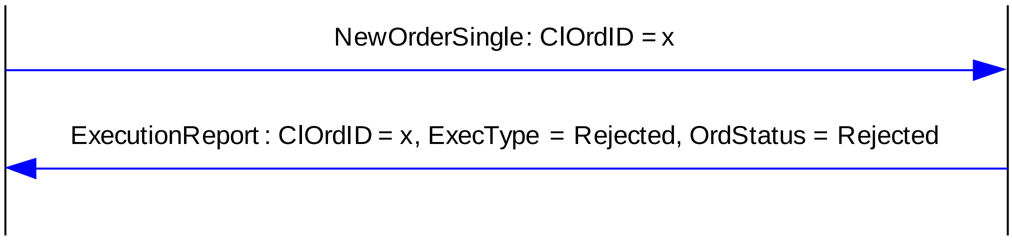
Client can change or cancel his orders. Order parameters such as size and price can be changed in already set order without having to cancel and resubmit it. Client can cancel the set order, but only active (unexecuted or partially executed) order can be. Cancel requests can be rejected by the system if the order is currently being processed by the system.

In current version when client disconnects from the gateway all active orders remain active and may be executed during disconnect. Their status can be obtained at next connection to the server.

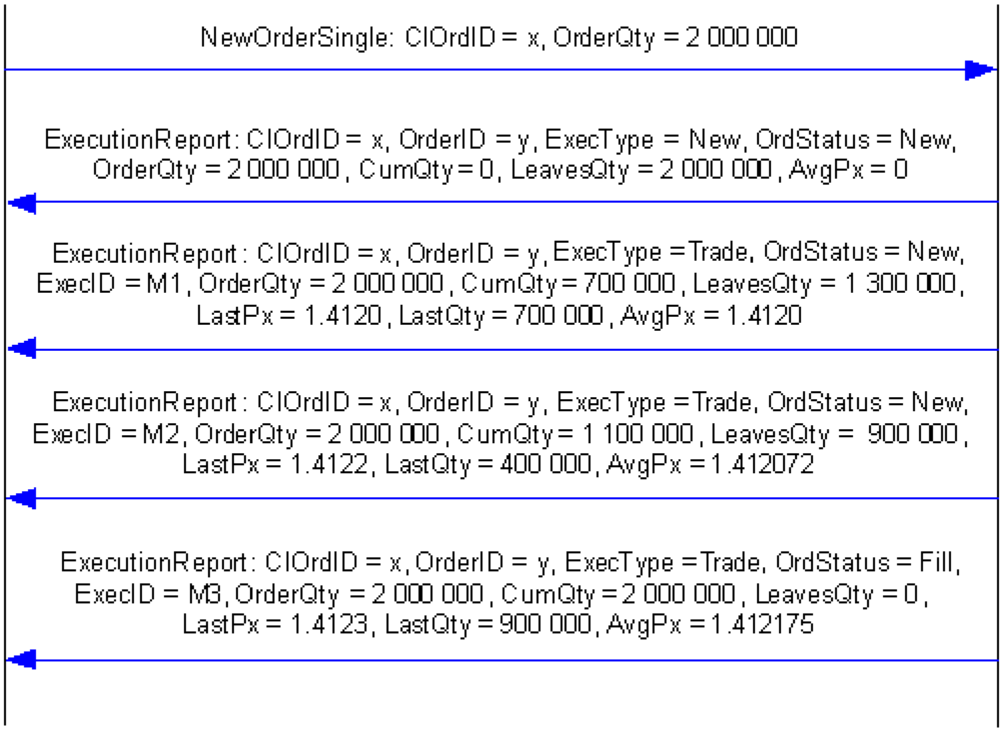
6.2 Order Management Flow

Typical pattern of setting and execution of order.

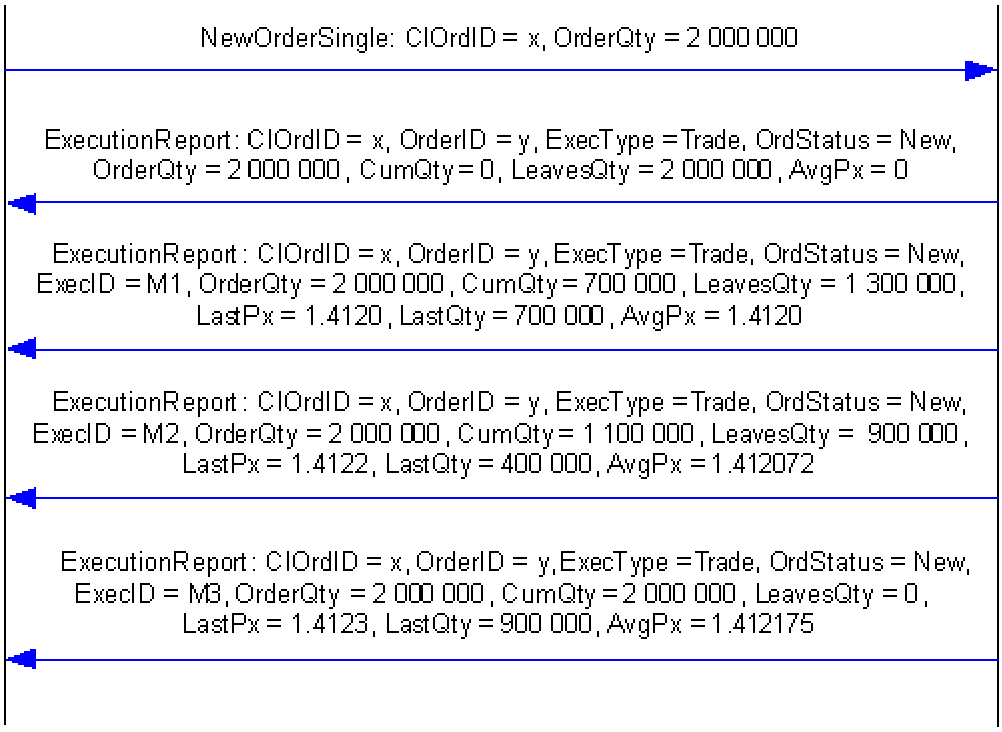
Unsuccessful setting:



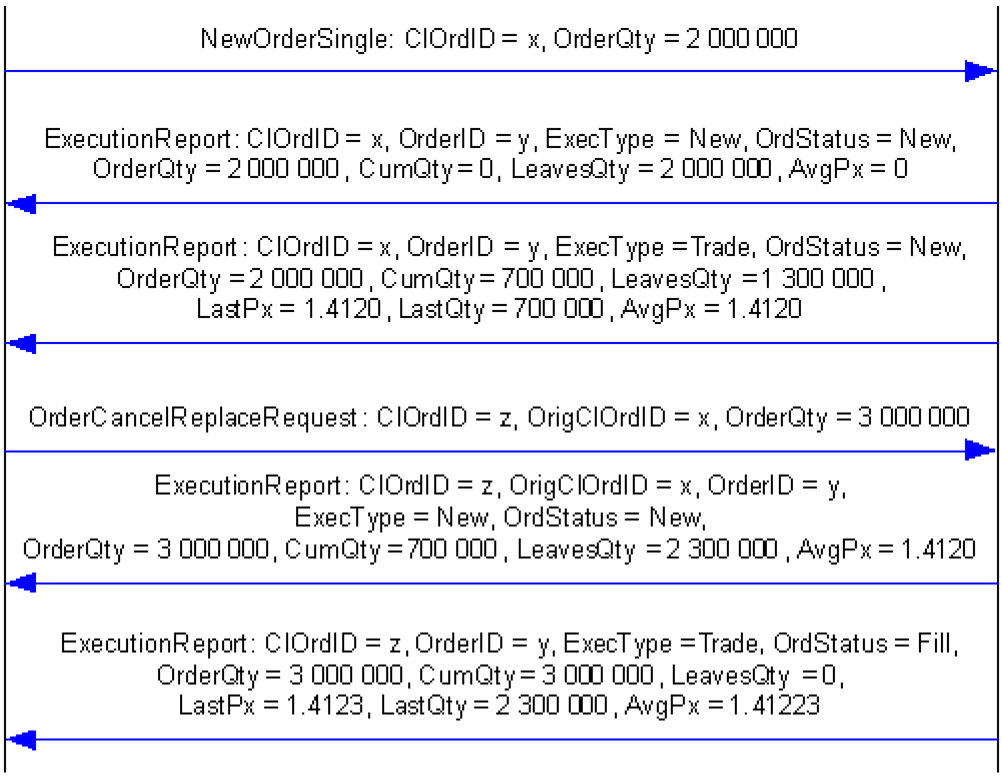
Successful setting and execution:



Typical pattern of setting and cancelling order (including partial execution).



Typical pattern of setting and modifying of order (including partial execution).



6.3 Message Format

New Order - Single

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = D
1	Account	N	string	Allows to specify an account that is going to be used for a specific deal. This tag can be used only after an agreement with a quote provider.
11	ClOrdID	Y	string	Unique request ID
21	HandlInst	N	char	Supported values: 1 – Automated Execution Order Private 2 – Automated Execution Order Public Not executed in current version.
55	Symbol	Y	string	Currency pair shown as CCY1/CCY2
54	Side	Y	char	Supported values: 1 – Buy 2 – Sell
60	TransactTime	Y	UTCTimestamp	Time when order request was released by trader or trading system.
38	OrderQty	Y	Qty	Order size in base currency
40	OrdType	Y	char	Supported values: 1 – Market 2 – Limit 3 – Stop
44	Price	Y	Price	Price of order execution. For Market order (tag 40 = 1) is ignored.
59	TimeInForce	Y	Char	Supported values: 1 – Good Till Cancel (GTC) 3 – Immediate or Cancel (IOC) 101 – Good Till Time 102 – Good During Time
126	ExpireTime	C	UTCTime stamp	Time of order activity. Have to be specified if TimeInForce = A или B
210	MaxShow	N	Qty	If not present then MaxShow = OrderQty
11030	RefPrice	N	Price	Reference price
Standard Trailer		Y		

Notes:

1. For TimeInForce = Good Till Time (101) ExpireTime field defines date and time of order expiration. For example, ExpireTime = '20110630-15:30:00' means that on July 30, 2011 at 15:30:00 UTC the order (or part of it which remained not executed) will be automatically cancelled.
2. For TimeInForce = Good During Time (102) ExpireTime field defines order time of activity starting from the moment of setting. In that case only part containing time is used. For example, ExpireTime = '00000000-00:01:30' means that order order (or part of it which remained not executed) will be automatically cancelled after 30 seconds from the moment of setting.

Execution Report

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = 8
1	Account	N	string	The value from NewOrder–Single request
37	OrderID	C	String	Order ID set by FX Aggregator Not used when ExecType = '8' (Rejected)
11	ClOrdID	Y	String	Unique request ID
41	OrigClOrdID	C	String	Conditionally required for response to an electronic Cancel or Cancel/Replace request (ExecType=PendingCancel, Replace, or Canceled). ClOrdID of the previous accepted order when canceling or replacing an order.
17	ExecID	Y	String	Unique ExecutioReport message ID
150	ExecType	Y	char	Supported values: 0 – New F – Trade 4 – Canceled 5 – Replaced 8 – Rejected C – Expired
39	OrdStatus	Y	char	Supported values: 0 – New 2 – Fill 4 – Canceled 8 – Rejected C – Expired
103	OrdRejReason	C	int	Shows the reason of ExecType = '8' (Rejected)
55	Symbol	Y	String	Currency pair shown as CCY1/CCY2
54	Side	Y	char	Supported values: 1 – Buy 2 – Sell
15	Currency	N	String	Deal currency
38	OrderQty	Y	Qty	Order size in base currency
231	ContractMultiplier	N	Float	Contract size
40	OrdType	Y	char	Supported values: 1 – Market 2 – Limit 3 – Stop
44	Price	Y	Price	Price of order execution. Ignored for Market order (tag 40 = 1).
32	LastQty	C	Qty	Last trade quantity if ExecType = Trade or Fill or PartialFill
31	LastPx	C	Qty	Last trade price if ExecType = Trade or Fill or PartialFill
151	LeavesQty	Y	Qty	Quantity open for further execution. If the OrdStatus is Canceled, Expired, or Rejected (in which case the order is no

				longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty
14	CumQty	Y	Qty	Currently executed size
6	AvgPx	Y	Price	Average exec price
59	TimeInForce	Y	Char	Supported values: 1 – Good Till Cancel (GTC) 3 – Immediate or Cancel (IOC) 101 – Good Till Time 102 – Good During Time
126	ExpireTime	C	UTC Time stamp	Time of order activity. Have to be specified if TimeInForce = A or B
21	HandlInst	N	char	Supported values: 1 – Automated Execution Order Private 2 – Automated Execution Order Public
210	MaxShow	N	Qty	If not present then MaxShow = Full
11030	RefPrice	N	Price	Reference price
64	SettlDate	C		SettlDate if ExecType = Trade or Fill or PartialFill
584	MassStatusReqID	C	String	Required if responding to an Order Mass Status Request. Echo back the value provided by the requester.
58	Text	N		
75	TradeDate	N	Local Mkt Date	Trade Date
60	TransactTime	N	UTC Time stamp	Trade Time
11033	BaseCcy	C	String	Base currency of the last deal
11034	BaseQty	C	Qty	Quantity of base currency of the last deal
11035	TermCcy	C	String	Counter currency of the last deal
11036	TermQty	C	Qty	Quantity of counter currency of the last deal
Standard Trailer		Y		

*Value «2 – Fill» will be supported if necessary.

Order Cancel/Replace Request

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = G
11	ClOrdID	Y	String	Unique request and new (changing) order ID.
41	OrigClOrdID	Y	String	Changed order (ClOrdID) ID.
55	Symbol	Y	String	Required by FIX, but not used
54	Side	Y	char	Required by FIX, but not used
60	TransactTime	Y	UTCTimestamp	Required by FIX, but not used

38	OrderQty	Y	Qty	New order quantity (OrderQty). Must be no less than already executed size (CumQty from ExecutionReport)
40	OrdType	Y	char	Required by FIX, but not used
44	Price	Y	Price	New order price
210	MaxShow	N	Qty	New show quantity. If not present then MaxShow = OrderQty.
11030	RefPrice	N	Price	Reference price
Standard Trailer		Y		

Order Cancel Request

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = F
11	ClOrdID	Y	String	Unique request ID.
41	OrigClOrdID	Y	String	Cancelled order (ClOrdID) ID.
55	Symbol	Y	String	Required by FIX, but not used
54	Side	Y	char	Required by FIX, but not used
60	TransactTime	Y	UTCTimestamp	Required by FIX, but not used
38	OrderQty	Y	Qty	Required by FIX, but not used
Standard Trailer		Y		

Order Cancel Reject

Tag	Field Name	Req'd	Type	Description
Standard Header		Y		MsgType = 9
37	OrderID	Y	String	If CxlRejReason=”Unknown order”, OrderID = “NONE”
11	ClOrdID	Y	String	Unique request ID.
41	OrigClOrdID	Y	String	Changed/Cancelled order (ClOrdID) ID.
39	OrdStatus	Y	String	Order Status
434	CxlRejResponseTo	Y	char	Identifies the type of request that a Cancel Reject is in response to. Valid values: 1 = Order Cancel Request 2 = Order Cancel/Replace Request
103	OrdRejReason	N	int	
58	Text	N	String	
Standard Trailer		Y		

7 Annex 1

User-defined fields

Tag	Field Name	Type	Description
11001	BasePoint	Price	Point size, e.g. 0.0001 for EUR/USD
11002	RatePrecision	Price	Price precision, e.g. 0.00001 for EUR/USD
11003	MinReqQty	Qty	Minimal size of order (not limited if this field is empty)
11004	MaxReqQty	Qty	Maximal size of order (not limited if this field is empty).
11005	StepReqQty	Qty	Minimal step of order changing. For example, if StepReqQty = 10000, then OrderQty = 100000 and OrderQty = 110000 – correct size, and OrderQty = 105000 – incorrect size. Not limited if this field is empty.
11010	MarketDataType	int	Quote mode.
11020	CAList	String	List of available counterparties, separated by «;» symbol. Example 1: Alfabank Example 2: Hotspot, Currenex; FXAll
11021	StreamID	String	The ID for the stream (for multi-stream pricing)
11030	RefPrice	Price	Reference price

Limitations:

– The length of string ID have to be no more than 32 characters.