



DEUTSCHE BÖRSE
GROUP

SEP Market Maker API

FIX Rules of Engagement

Version 1.9.0

Implements FIX Protocol Version FIX.4.4
360 Treasury Systems AG
Grüneburgweg 16-18 / Westend Carrée
D-60322 Frankfurt am Main
Tel: +49 69 900289 0
Fax: +49 69 900289 29
Email: cas@360t.com
Commercial Register Frankfurt, No. HRB 49874
Executive Board: Carlo Kölzer, Thomas Spaun
Supervisory Board: Andreas Preuss

Overview

This document presents the FIX Rules of Engagement for market makers that provide executable streams to the 360T Super Sonic application (SST) via the 360T SST FIX API. It contains an overview of the general workflow, as well as detailed specifications of the utilized FIX messages. The API is implemented to meet FIX 4.4 standards.

The main addressee of this document is the development team integrating a bank's market data and order processing engine into SST.

Contents

Overview	2
1 Product offering	4
2 Connecting to 360T	5
2.1 Network Connectivity	5
2.1.1 Radianz	5
2.1.2 Stunnel	5
2.1.3 Cross Connect	5
2.1.4 N7	5
2.1.5 Plain Internet	5
2.2 Connection and Firewall Configuration	5
2.3 FIX Engine Compatibility Testing	6
2.4 FIX Protocol Levels	6
2.4.1 User Credentials	6
2.4.2 FIX Session Reset	6
2.5 Availability	6
2.6 Utilization of the FIX Protocol	7
2.6.1 System Messages	7
2.6.2 Business Messages	7
2.7 Data provided by 360T	7
2.8 General Workflow	8
2.8.1 Withdrawing Market Data Streams	9
2.9 Availability	10
3 System Messages	11
3.1 Logon	11
3.2 Heartbeat [0]	11
3.3 TestRequest [1]	11
3.4 ResendRequest [2]	12
3.5 Reject [3]	12
3.6 SequenceReset [4]	13
3.7 Logout [5]	13
4 Business Messages	14
4.1 Grouping	14
4.2 Market Data Request	14
4.2.1 Bid/Offer	15
4.3 Market Data – Snapshot/Full Refresh	16
4.3.1 Stream aggregation	17
4.3.1.1 Streams not aggregated	17
4.3.1.2 Aggregated Streams	17
4.4 Market Data Request Reject	19
4.5 New Order Single	20

4.6	Execution Report	22
4.6.1	Note about partial fillings	22
4.7	Business Message Reject	24
4.8	Execution Acknowledgement	24
5	Firewall configuration	26
6	FIX Session Reset	27
7	Example Messages	28
7.1	Admin Messages	29
7.1.1	Logon[A] message - Request	29
7.1.2	Logon[A] message	29
7.1.3	TestRequest[1] message	29
7.2	Market Data	30
7.2.1	MarketDataRequest[V] message	30
7.2.2	MarketDataSnapshotFullRefresh[W] message	30
7.3	Orders	32
7.3.1	NewOrderSingle[D] message	32
7.3.2	ExecutionReport[8] message - Filled	32
7.3.3	ExecutionReport[8] message - Cancelled	33
7.3.4	ExecutionReport[8] message - Rejected	34
8	Version Log	35

1 Product offering

The following products are supported by this version of the 360T SEP Market Maker API:

- FX Spot
- FX Forward
- FX NDF
- FX Swap
- FX NDS
- **FX Future**

2 Connecting to 360T

Once interest has been established in connecting a client to 360T's FIX services, a project manager will be assigned. The project manager will manage the process of connecting the FIX engines of the two companies, performing FIX engine tests, and bringing the connection live.

2.1 Network Connectivity

Only incoming connections are supported, i.e. the customer always initiates connections to 360T. Clients may connect to 360T's electronic FX trading system using one of the following options:

2.1.1 Radianz

If a client is already connected to Radianz, lead-time to establish connectivity between the client and 360T is ten days, taking into account change control procedures. If the client is not already connected, the lead-time will be advised at the time the order is placed. Radianz will quote a low network latency and will offer a high level of encryption for traffic passing through its network. This is the preferred connectivity option. For more information see <http://www.radianz.com>

2.1.2 Stunnel

Connections via Internet should be secured by establishing a Stunnel connection to the 360T data center. Certificates have to be negotiated between the network teams of the client and 360T.

2.1.3 Cross Connect

Cross connects inside the Equinix London LD4/LD5, Equinix Tokyo TY3 and Equinix New York NY4 data centers are available for enhanced network performance. In London we recommend to order cross-connects to both sites in order to have redundancy in case of failure on one site.

2.1.4 N7

Connectivity to 360T is available from Deutsche Börse's N7 global exchange network. N7 provides thousands of connections in 32 countries across Europe, North America and Asia. It is built to deliver speed, reliability and performance.

2.1.5 Plain Internet

A plain internet connection is only available on our testing environments.

2.2 Connection and Firewall Configuration

See appendix 5 Firewall configuration for the necessary firewall rules to access this 360T service.

2.3 FIX Engine Compatibility Testing

We offer clients the ability to test against our FIX engine by connecting over the Internet. This allows compatibility issues to be discovered early in the process. The process for going live has three stages:

1. Initial Development & Testing

During this stage the client connection will be linked to the 360T development system.

2. Conformance Testing

Once a client is ready to go live, 360T will conduct a series of conformance tests with the client to certify the connection is compatible with the production environment. Conformance testing takes place over the test network connection.

3. Switch to Live System

Due to the need to make firewall changes and changes to the proxy servers the switch to the live system will take at least a week. This is because changes to these services can only be performed out of business hours, i.e., at the weekend.

2.4 FIX Protocol Levels

FIX is the communications protocol 360T and its clients will both have to support to fully communicate with each other. 360T systems are compliant with FIX version 4.4. In addition, some systems support transport layer FIXT.1.1 and application layer FIX.5.0.

Only the messages and fields relevant for the communication between 360T and its clients are included in this document. Each message described here lists 360T required fields and their supported values plus any fields that result in rejection. Additional fields will be ignored and unsupported field values will be rejected. The official FIX specification, available on <http://www.fixprotocol.org>, should be consulted for in-depth descriptions.

2.4.1 User Credentials

360T will provide the values for the fields SenderCompID[49] and TargetCompID[56].¹ 360T will also provide a password that must be used in the Logon message for the client to be authenticated if needed.

2.4.2 FIX Session Reset

For established connections, a FIX session reset is performed according to the schedule detailed in appendix 6 [FIX Session Reset](#).

2.5 Availability

The 360T Production environment is available between Sunday 6 pm America/New York and Friday 5 pm America/New York. Every day during the week the environment has a maintenance window between 5 pm and 6 pm America/New York during which the application may not be available.

The non-availability of the 360T platform does not mean that the client will be disconnected from their FIX session(s) for the entire duration of the maintenance window. If the client remains connected during the maintenance window, the functionality of the API will not be available.

¹Sender/TargetSubID[50/57] or Sender/TargetLocationID[142/143] will be defined if needed

2.6 Utilization of the FIX Protocol

Only one session is established for both trading and market data streaming. FIX messages can be categorized into system messages used for administrative purpose and business messages used to communicate business relevant actions.

2.6.1 System Messages

The following administrative system messages are supported as prescribed by the FIX standard. The supported message types are:

- Logon [A]
- Heartbeat [0] (interval configured to 30 seconds on 360T side)
- Test Request [1]
- Resend Request [2]
- Reject [3]
- Sequence Reset [4]
- Logout [5]

2.6.2 Business Messages

The business messages are used as prescribed by the FIX standard and interpreted in a way that all business relevant actions for SuperSonic can be communicated. The supported message types are:

- Market Data Request [V]
- Market Data – Snapshot/Full Refresh [W]
- Market Data Reject [Y]
- New Order Single [D]
- Execution Report [8]
- Business Message Reject [j]

2.7 Data provided by360T

The following information will be needed by the bank to be integrated into 360T SuperSonic as market maker:

- Connection information: The target IP and port to connect to will be provided by 360T.
- FIX user credentials: 360T will provide the values for the fields SenderCompID<49> and TargetCompID<56>.
- Customer information: In New Order Single messages the fields Account<1> and Username<551> will be populated with the name of the customer's 360T legal entity and 360T username. 360T will provide these data for new customers to the bank.

2.8 General Workflow

When a session is established, 360T requests market data by sending a Market Data Request message for a symbol to the bank. The bank can stream market data until another Market Data Request message is sent to cancel the request. If the bank can't stream the requested market data, it can respond with a Market Data Reject message. When a customer hits on a published price, 360T sends a New Order Single message to the bank and expects to get an Execution Report message within the next 3 seconds.

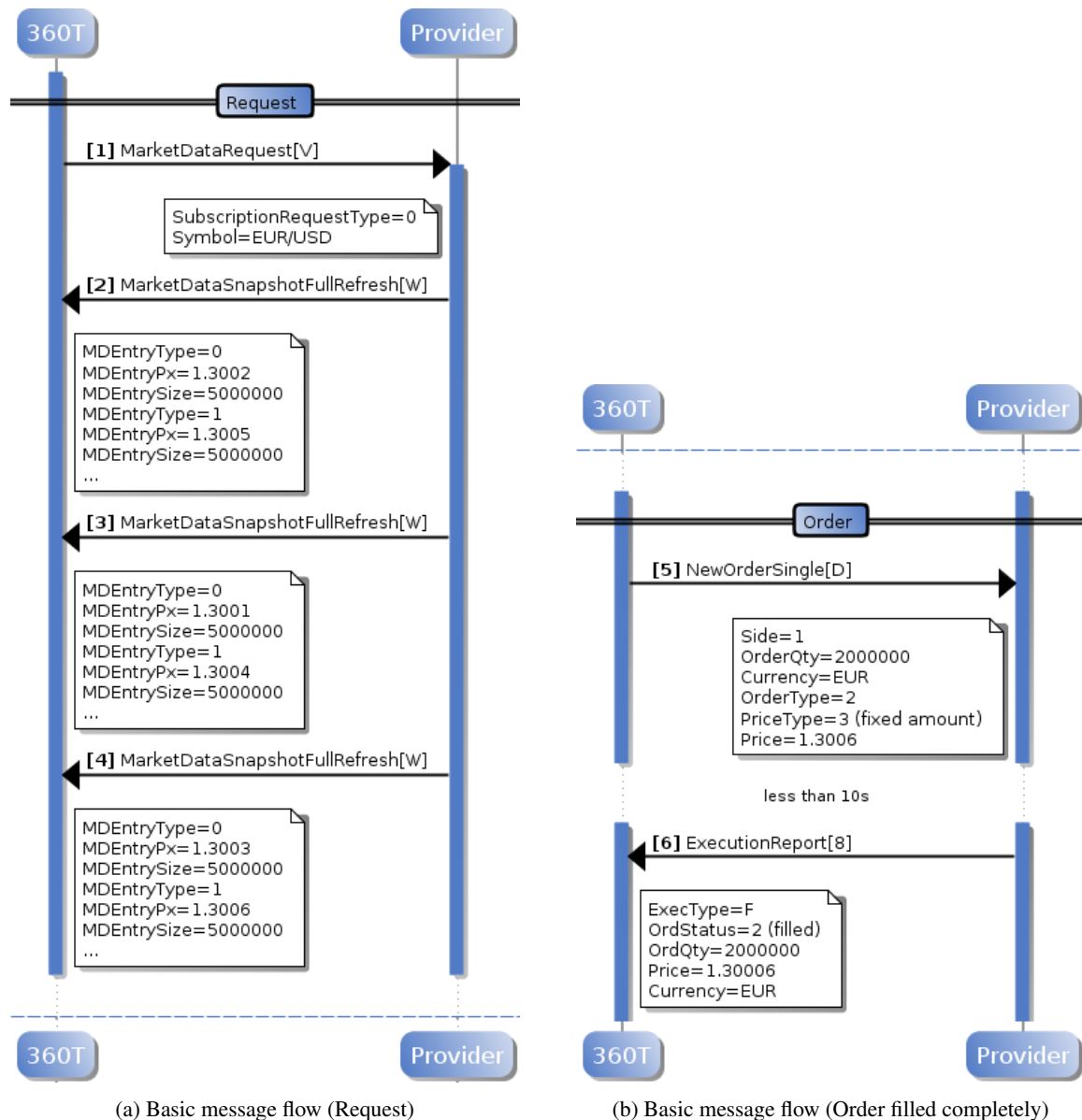


Figure 2.1: Workflow for completely filled orders

2.8.1 Withdrawing Market Data Streams

A Market Data Snapshot Full Refresh message with an empty update can be sent to withdraw a stream (e.g. the stream turned stale). An update is considered empty in one of the following two scenarios:

- NoMDEntries[268]=0
- All the market data entries have their QuoteCondition[276] field set to 'Non-Firm'['I']

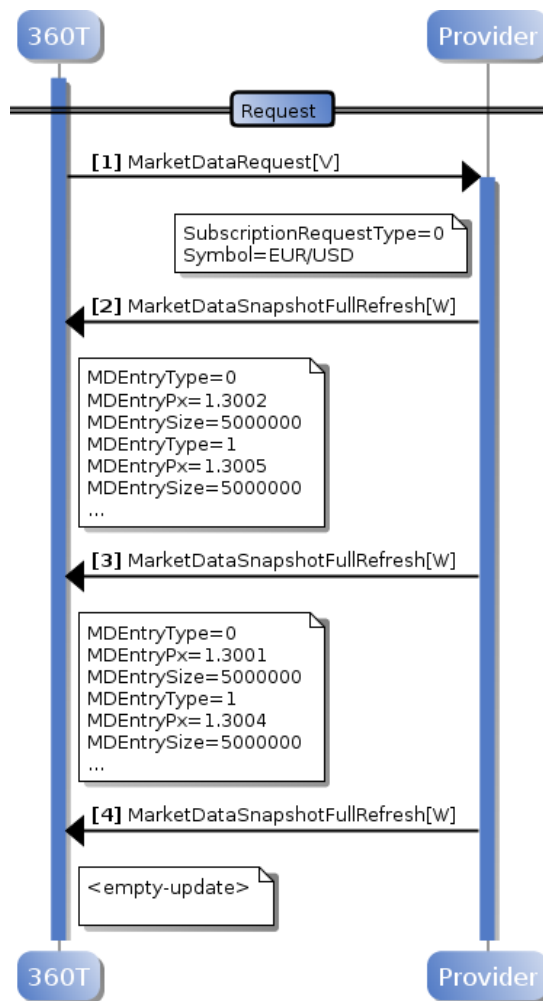


Figure 2.2: Workflow for withdrawing Streams

2.9 Availability

The 360T Production environment is available between Sunday 6 pm America/New York and Friday 5 pm America/New York. Every day during the week the environment can be not available during the maintenance time frame between 5 and 6 pm America/New York.

3 System Messages

3.1 Logon

The customer starts the communication by sending a Login message. 360T checks the supplied credentials and answers with a Logon reply if successful.

Tag	Name	Type	Req	Description
<MessageHeader>			Y	MsgType <35> = A
98	EncryptMethod	int	Y	0 = 'always unencrypted'
108	HeartBtInt	int	Y	should be set to 30
141	ResetSeqNumFlag	Boolean	Y	should be set to 'Y'
<MessageFooter>			Y	

Table 3.1: Logon message definition

3.2 Heartbeat [0]

The Heartbeat monitors the status of the communication link and identifies when the last of a string of messages was not received.

When either end of a FIX connection has not sent any data for HeartBtInt <108> seconds, it will transmit a Heartbeat message. When either end of the connection has not received any data for (HeartBtInt <108> + "some reasonable transmission time") seconds, it will transmit a Test Request message. If there is still no Heartbeat message received after (HeartBtInt <108> + "some reasonable transmission time") seconds then the connection is considered lost.

Tag	Name	Type	Req	Description
<MessageHeader>			Y	MsgType <35> = 0
112	TestReqID	String	C	Required if the Heartbeat is a response to a TestRequest [1] message.
<MessageFooter>			Y	

Table 3.2: Heartbeat message definition

3.3 TestRequest [1]

The Test Request message forces a heartbeat from the opposing application. The Test Request message checks sequence numbers or verifies communication line status. The opposite application responds to the Test Request with a Heartbeat containing the TestReqID <112>.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = 1
112	TestReqID	String	Y	Identifier that must be used in the reply.
	<MessageFooter>		Y	

Table 3.3: TestRequest message definition

3.4 ResendRequest [2]

The resend request is sent by the receiving application to initiate the retransmission of messages. This function is utilized if a sequence number gap is detected, if the receiving application lost a message, or as a function of the initialization process.

360T does not persist messages and therefore will not resend messages if a ResendRequest is received.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = 1
7	BeginSeqNo	int	Y	
16	EndSeqNo	int	Y	
	<MessageFooter>		Y	

Table 3.4: TestRequest message definition

- To request a single message: BeginSeqNo <7> = EndSeqNo <16>
- To request a range of messages: BeginSeqNo <7> = first message of range, EndSeqNo <16> = last message of range
- To request all messages subsequent to a particular message: BeginSeqNo <7> = first message of range, EndSeqNo <16> = 0 (represents infinity) .

3.5 Reject [3]

The Reject message is issued when a message is received but cannot be properly processed due to a session-level rule violation. An example of when a reject may be appropriate would be the receipt of a message with invalid basic data which successfully passes de-encryption, CheckSum <10> and BodyLength <9> checks.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = 1
45	RefSeqNum	int	Y	MsgSeqNum <34> of the rejected message
58	Text	String	N	Reason why the message can't be processed
	<MessageFooter>		Y	

Table 3.5: TestRequest message definition

3.6 SequenceReset [4]

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = 1
36	NewSeqNo	int	Y	Sequence number which is expected to be sent in the next message
	<MessageFooter>		Y	

Table 3.6: TestRequest message definition

3.7 Logout [5]

The Logout message initiates or confirms the termination of a FIX session. Disconnection without the exchange of Logout messages should be interpreted as an abnormal condition.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = 1
58	Text	String	N	This field is used in confirmations only to specify why the message could not be processed.
	<MessageFooter>		Y	

Table 3.7: TestRequest message definition

4 Business Messages

4.1 Grouping

Some banks support customer groups to send different streams to their customers according to their group membership. 360T utilizes the message SenderSubID<50> in the header of MarketDataRequest and NewOrderSingle messages to support this concept. If no special groups are defined, the field SenderSubID is always populated with the value 'DEFAULT'. If the request is for an agreed group, the field contains the agreed name of the group.

4.2 Market Data Request

(360T → Bank)

The Market Data Request message is sent by 360T to the bank. It is intended to request a shared stream for all customers that are currently logged in to 360T SuperSonic and request that stream. 360T always requests the full book, so banks can send market data for multiple streams. Depending on the value for the SubscriptionRequestType <263> the message is intended to request a new stream or to cancel a current stream request.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = V
50	SenderSubID	String	Y	Contains the name of the group of the request. This value is agreed between bank and 360T. If no groups are defined, the field always has the value 'DEFAULT'
262	MDReqID	String	Y	Unique ID defined by 360T. New value, if SubscriptionRequestType is 1. Otherwise it has to be the ID of request that has to be cancelled
263	SubscriptionRequestType	char	Y	Indicates whether 360T subscribes or unsubscribes for a stream of market data snapshots. Possible values: <ul style="list-style-type: none"> '0' = Subscribe '2' = Unsubscribe
64	SettlDate	LocalMktDate	C	Settlement date for the requested market data. For Swaps and NDS it denotes the date of the near leg. Mandatory for Spot, Swap and NDS. Not required for FX Futures
193	SettlDate2	LocalMktDate	C	Settlement date for the far leg of a Swap or NDS
541	MaturityDate	LocalMktDate	C	Defines the Fixing Date for an NDF and NDS. For NDS defines the near leg Fixing Date. For FX Futures it defines the Security-Maturity.
7541	MaturityDate2	LocalMktDate	C	Fixing date of the far leg of an NDS
264	MarketDepth	char	Y	Depth of market for Book Snapshot. Is always set to: '0' = Full Book

Continued on next page

4.2

Tag	Name	Type	Req	Description
265	MDUpdateType	char	Y	Always set to: '0' = Full Refresh
267	NoMDEntryTypes	int	Y	Number of MDEntryType being requested. Is always set to: '2' (bid and offer)
→269	MDEntryType	char	Y	Type of market data that is requested. Possible values: <ul style="list-style-type: none"> • '0' = Bid • '1' = Offer see 4.2.1
146	NoRelatedSym	int	Y	Number of symbols (instruments) requested. Is always 1
→55	Symbol	String	Y	Contains the requested currency pair in the format: CC1/CC2
→48	SecurityID	String	C	Required for FX Futures. EUREX Security ID
→22	SecurityIDSource	String	C	Required for FX Futures. Will always be 8 = Exchange Symbol
→167	SecurityType	String	C	Required for FX Futures. Will always be 'FUT'
14001	SpotRatePrecision	int	N	Supported precision for Spot.
14002	ForwardRatePrecision	int	N	Supported precision for Forward and NDF.
<MessageFooter>			Y	

Table 4.1: MarketDataRequest message definition

4.2.1 Bid/Offer

The value for MDEntryType <269> always relates to the specified Symbol <55> from the customer's point of view and defines whether the customer wants to sell (Bid) or buy (Offer) the base currency.

For example if the symbol is EUR/USD and the client wants to sell the base currency (EUR) and buy USD the value '0' (Bid) is set. If he wants to buy the base currency and sell USD the value '1' (Offer) is set.

For Swaps and NDS the side always refers to the far leg of the Swap or NDS

4.3 Market Data – Snapshot/Full Refresh

(360T ← Bank)

The bank sends Market Data – Snapshot/Full Refresh messages to 360T. One message contains the full book of market data that is currently valid for a request. A Market Data – Snapshot/Full Refresh message invalidates any market data information that has been recently published for the same MarketDataRequest.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = W
262	MDReqID	String	Y	Contains the MDReqID of the MarketDataRequest message it refers to.
55	Symbol	String	C	Contains the delivered currency pair in the format: CC1/CC2. Mandatory for all products except FX Futures
→48	SecurityID	String	C	Required for FX Futures. EUREX Security ID
→22	SecurityIDSource	String	C	Required for FX Futures. Will always be 8 = Exchange Symbol
62	ValidUntilTime	UTCTimestamp	N	Maximum validity time of the market data
268	NoMDEntries	int	Y	Number of entries following.
→269	MDEntryType	char	Y	Type of market data that is requested. Possible values: <ul style="list-style-type: none"> • '0' = Bid • '1' = Offer see 4.2.1
→270	MDEntryPx	Price	N	The price of the market data entry. For Swaps/NDS defines the near leg price.
→271	MDEntrySize	Qty	N	Notional amount of market data entry.
→272	MDEntryDate	UTCDateOnly	N	The value date of this market data entry. For Swaps/NDS it defines the near leg date. Can be sent for validation purposes.
→276	QuoteCondition	char	Y	Type of market data update action. Possible values: <ul style="list-style-type: none"> • 'A' = Active (i.e. new valid entry of market data) • 'I' = Non-Firm (i.e. cancel the currently published market data for this entry)
→7700	MDEntryDate2	UTCDateOnly	N	For Swaps/NDS it defines the far leg date. Can be sent for validation purposes.
→7701	MDEntryPx2	Price	C	Mandatory for Swaps/NDS. Defines the far leg price.
→7702	MDEntrySpotRate	Price	C	Mandatory for Swaps/NDS. Defines the reference spot rate.
→7703	MDEntryMidPx	Price	N	Mid rate for the near leg of a Swap/NDS.
→7704	MDEntryMidPx2	Price	N	Mid rate for the far leg of a Swap/NDS.
→7705	MDEntryMidSpotRate	Price	N	Mid spot rate for a Swap/NDS.
Continued on next page				

Tag	Name	Type	Req	Description
7070	RefSpotDate	LocalMktDate	N	If supplied, then 360T will validate this against the spot date as calculated on 360T side. Applies to Forwards, NDF, Swaps and NDS.
<MessageFooter>			Y	

Table 4.2: MarketDataSnapshot Full Refresh message definition

4.3.1 Stream aggregation

Banks can provide different types of multi-band prices that differ in the way how orders are created and how prices are calculated.

Two main variants are supported:

4.3.1.1 Streams not aggregated

The bank may offer different prices at different amounts as visualized in figure 4.1.

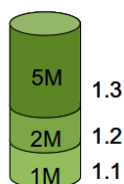


Figure 4.1: Streams not aggregated

If this variant is chosen, the different entries in one MarketData Snapshot cannot be aggregated by 360T. Only one order can be initiated based on the MarketData Snapshot. An order up to 1 million for 1.1, up to 2 millions for 1.2 and up to 5 millions for 1.3.

If – for example – a client asks for 3 millions, the order will be initiated at a price of 1.3 since only orders up to 2 millions are priced at 1.2

4.3.1.2 Aggregated Streams

On the other hand, banks may offer prices for several buckets of amounts. In this example the bank offers 1 million for 1.1, another million for 1.2 and a bucket of 3 millions for 1.3.

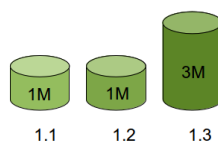


Figure 4.2: Aggregated Streams

Orders will be created using the best-priced buckets until the full amount is fulfilled. Therefore, multiple orders might be created.

If – in this example – a client asks for 3 millions, three orders will be created: one for 1 million at 1.1, another one for 1 million at 1.2 and a third one for the remaining million at 1.3 from the rightmost bucket.

4.3

The configuration which mode is used can only be changed / set by 360T (server side) and a change requires a restart of the adapter. Please inform 360T up front which mode you are going to use.

4.4 Market Data Request Reject

(360T ← Bank)

If a bank does not provide streams for the requested stream (e.g. because the currency pair is not supported), it can send a Market Data Reject to notify 360T about the reason, why the stream is not supported.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = Y
262	MDReqID	String	Y	Contains the MDReqID of the MarketDataRequest message it refers to.
281	MDReqRejReason	String	N	Reason for reject. Possible values: <ul style="list-style-type: none"> '0' = Unknown Symbol (i.e. permanent reason, no further MarketDataRequests will be sent for the rest of the session) '2' = Insufficient Bandwidth (i.e. temporary reason, 360T will continue sending MarketDataRequests at intervals) If this field is not set, 360T considers the reason to be temporary and continues re-subscribing.
58	Text	String	N	Reason why no market data can be delivered
	<MessageFooter>		Y	

Table 4.3: MarketDataRequestReject message definition

4.5 New Order Single

(360T → Bank)

360T sends a NewOrderSingle message, when a customer tries to execute on a published stream. A New Order Single message is always sent out as Limit Order. The bank must respond to a New Order Single message with exactly one Execution Report message to inform about the final status of the order.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = D
50	SenderSubID	String	Y	Contains the name of the group which was sent in the Market-DataRequest message.
11	CLOrdID	String	Y	Unique identifier assigned by 360T.
1	Account	String	Y	Defines the 360T legal entity on behalf of that the order is sent.
553	Username	String	Y	Defines the 360T username of the user that initiated the order.
64	SettlDate	LocalMktDate	C	Settlement Date of the order. For Swaps/NDS it denotes the near leg date. Not required for FX Futures
15	Currency	Currency	Y	Currency, in which the notional amount is defined.
54	Side	char	Y	Defines if the client wants to buy or sell the given symbol. Possible values: <ul style="list-style-type: none"> • '1' = Buy • '2' = Sell
38	OrderQty	Qty	Y	Defines the amount in the notional currency, for which the customer wants to execute.
60	TransactTime	UTCTimestamp	Y	Time this order request was initiated/released by the trader, trading system, or intermediary.
40	OrdType	char	Y	Defines type of order. Possible values: <ul style="list-style-type: none"> • '2' = Limit Order
423	PriceType	char	N	Defines if the order has to be executed for the complete amount or if partial filling is allowed. Possible values: <ul style="list-style-type: none"> • '1' = Percentage (i.e. Partial filling allowed) • '3' = Fixed Amount (i.e. No partial execution allowed) Fixed amount is the default if this field is not sent. Please see section 4.6.1 about how 360T handles partial fillings.
44	Price	Price	C	Defines the limit price of the order or the price of the near leg of a Swap or NDS. Required for Limit Orders. (OrdType = '2').
55	Symbol	String	Y	Contains the delivered currency pair in the format: CC1/CC2.
→48	SecurityID	String	C	Required for FX Futures. EUREX Security ID
→22	SecurityIDSource	String	C	Required for FX Futures. Will always be 8 = Exchange Symbol

Continued on next page

4.5

Tag	Name	Type	Req	Description
21	HandlInst	char	N	Instructions for order handling on broker trading floor. This will always be '1' = 'Automated execution order, private, no broker intervention'
59	TimeInForce	char	N	Specifies how long the order remains in effect. This value depends on the PriceType<423> field: <ul style="list-style-type: none"> '4' = 'Fill or Kill' (PriceType '3') '3' = 'Immediate or Cancel' (PriceType '1')
193	SettlDate2	LocalMktDate	C	Settlement Date of the far leg of a Swaps/NDS order
541	MaturityDate	LocalMktDate	C	Defines the Fixing Date for an NDF and NDS. For NDS defines the near leg Fixing Date. For FX Futures it defines the Security-Maturity.
640	Price2	Price	C	Defines the limit price of the far leg of a Swap/NDS order. Required for Swap/NDS Limit Orders. (OrdType = '2').
7541	MaturityDate2	LocalMktDate	N	Fixing date of the far leg of an NDS.
9550	Margin	Price	C	The margin amount for Spot orders. Generated by 360T
7611	ExecutionVenueType	char	Y	For NDF on SEF, the values is 1 (SEF), 2 (OFF_FACILITY) otherwise.
7612	ExecutionVenue	String	C	Required only for NDF on SEF. MIC code. Always set to "U360"
7613	IsLargeTrade	Boolean	C	Required only for NDF on SEF. Always set to false.
7614	RequiredTransaction	Boolean	C	Required only for NDF on SEF. Always set to false.
7615	ReportingParty	String	C	Required only for NDF on SEF. The value is either the legal entity of the requester or the provider.
7616	SwapDataRepository	String	C	Required only for NDF on SEF. The value is always "DTCC".
7617	ClearingExempted	Boolean	C	Required only for NDF on SEF. The value is always set to true.
7619	PersonStatus	char	Y	For NDF on SEF, the value is 1 (US), 2 (NON_US) otherwise.
7620	OriginatingLEI	String	C	Required only for NDF on SEF. The value is the LEI of the requester's legal entity.
7621	ProviderLEI	String	C	Required only for NDF on SEF. The value is the LEI of the provider.
7626	ReportingPartyLEI	String	N	Required only for NDF on SEF. The value is the LEI of the reporting party.
7653	UTIID	String	N	Unique Trade Identifier (near leg for Swaps/NDS).
<MessageFooter>			Y	

Table 4.4: NewOrderSingle message definition

4.6 Execution Report

(360T ← Bank)

The bank must respond to a NewOrderSingle message with an ExecutionReport message with one of the ExecTypes/OrdStatus values specified below within 3 seconds to inform about the final status of the execution. OrdStatus '0' (New) and 'A' (PendingNew) can be used, but these messages are ignored on 360T side. They are especially not considered a valid reply to fulfil the 3-second-rule.

4.6.1 Note about partial fillings

If the order had the Partial Filling Allowed flag set (PriceType<423>='1'), the provider can execute just a part of the requested amount. OrderQty<38> has then to be filled with this partial amount. 360T does not accept multiple partially filled execution reports for a single request.

Tag	Name	Type	Req	Description
	<MessageHeader>		Y	MsgType <35> = 8
11	ClOrdID	String	Y	Must be identical to the ClOrdID of the NewOrderSingle message it refers to.
37	OrderID	String	Y	Unique identifier assigned by market maker.
17	ExecID	String	Y	Unique identifier assigned by the bank.
150	ExecType	char	Y	Describes the purpose of the execution report: <ul style="list-style-type: none"> 'F' = 'Trade (partial fill or fill)' '4' = 'Canceled' (i.e. rejected due to market movement) '8' = 'Rejected' (i.e. rejected due to a customer based reason)
39	OrdStatus	char	Y	Describes the current state of the order: <ul style="list-style-type: none"> '1' = Partially filled '2' = Filled '4' = Canceled (i.e. rejected due to market movement) '8' = Rejected (i.e. rejected due to a customer based reason)
1	Account	String	Y	Must be identical to the value of the Account field in the NewOrderSingle message it refers to.
64	SettleDate	LocalMktDate	N	Specific date of trade settlement in YYYYMMDD format. Even though it is not mandatory, 360T strongly suggests this field to be filled to make sure both sides refer to the same value date. For Swap/NDF trades it denotes the settlement of the near leg. Not required for FX Futures.
553	Username	String	N	Must be identical to the value of the Username field in the NewOrderSingle message it refers to.
Continued on next page				

4.6

Tag	Name	Type	Req	Description
54	Side	char	Y	Defines the direction of the trade based on the given symbol. Possible values: <ul style="list-style-type: none"> • '1' = Buy • '2' = Sell
38	OrderQty	Qty	Y	Defines the notional amount in the notional currency, for which the order has been filled. If the order has been rejected, it has the value '0'. If the order has been sent without the option 'Allow Partial Filling' and the transaction has been successful, the value must be identical to the OrderQty from the New Order Single message. If 'Allow Partial Filling' has been activated, the value can be less than the one from the New Order Single message.
44	Price	Price	N	Defines the price for which the order has been executed. The field is mandatory for filled orders. For filled Swap/NDS orders it refers to the near leg.
15	Currency	Currency	Y	Notional currency, in which the executed amount is defined.
55	Symbol	String	Y	Contains the delivered currency pair in the format: CC1/CC2.
→48	SecurityID	String	C	Required for FX Futures. EUREX Security ID
→22	SecurityIDSource	String	C	Required for FX Futures. Will always be 8 = Exchange Symbol
151	LeavesQty	Qty	Y	Always '0', because 360T does not evaluate this field.
14	CumQty	Qty	Y	Always '0', because 360T does not evaluate this field.
6	AvgPx	Price	Y	Always '0', because 360T does not evaluate this field.
58	Text	String	N	Describes the reason for a rejected order. This field is mandatory, if ExecType is '4' or '8'. The text is not shown to the requester but is only used internally. For other ExecTypes, this value is ignored.
193	SettlDate2	LocalMktDate	N	Settlement Date of the far leg of a Swaps/NDS order
194	LastSpotRate	Price	C	Reference spot rate. Mandatory for Forwards/NDF and Swaps/NDS
541	MaturityDate	LocalMktDate	N	Defines the Fixing Date for an NDF and NDS. For NDS defines the near leg Fixing Date. For FX Futures it defines the Security-Maturity.
640	Price2	Price	C	Defines the limit price of the far leg of a Swap/NDS order. Required for Swap/NDS Limit Orders
7541	MaturityDate2	LocalMktDate	N	Fixing date of the far leg of an NDS.
631	MDEntryMidPx	Price	N	Mid rate for the near leg of a Swap/NDS.
7650	MidSpotRate	Price	N	Mid spot rate for a Swap/NDS.
7651	MidPx2	Price	N	Mid rate for the far leg of a Swap/NDS.
<MessageFooter>			Y	

Table 4.5: ExecutionReport message definition

4.7 Business Message Reject

(360T ↔ Bank)

A Business Message Reject can be sent from 360T to the bank to inform that a received message was syntactically not correct and therefore couldn't get processed.

Business Message Reject messages sent from the bank lead to a timeout if the rejected message was a NewOrderSingle. This will be picked up by our technical support for clarification. If the reject message was a MarketDataRequest, it has the same effect as a MarketDataRequestReject with no MDReqRejReason given.

Tag	Name	Type	Req	Description
<MessageHeader>			Y	MsgType <35> = j
45	RefSeqNum	int	Y	MsgSeqNum of rejected message.
372	RefMsgType	String	Y	The MsgType of the FIX message being referenced.
380	BusinessReject-Reason	char	Y	Code to identify reason for a BusinessMessageReject message: <ul style="list-style-type: none"> • '0' = Other • '3' = Unsupported Message Type • '5' = Conditionally Required Field Missing
58	Text	String	N	Reason why business message can't be processed
<MessageFooter>			Y	

Table 4.6: BusinessMessageReject message definition

clearpage

4.8 Execution Acknowledgement

(360T ↔ Bank)

An Execution Acknowledgement can be sent from 360T to the bank to inform that an Execution Report containing a partial or a complete fill has been booked or rejected respectively. If the 360T is configured to send the Execution Ack message, it will send the message to accept or reject the trade, after receiving the Execution Report message from the bank. Note that only Execution Reports that describe a fill (i.e. having a 39:OrdStatus='1'[Partially Filled] or 39:OrdStatus='2'[Filled]) will be acknowledged; cancels, rejects and new order confirmation messages will not be acknowledged.

Tag	Name	Type	Req	Description
<MessageHeader>			Y	MsgType <35> = BN
37	OrderID	int	Y	Will match the OrderID field from the execution report.
11	ClOrdID	String	Y	Will match the ClOrdID field from the execution report.
Continued on next page				

4.8

Tag	Name	Type	Req	Description
1036	ExecAckStatus	char	Y	Reports the status of the execution <ul style="list-style-type: none"> • '1' = Accepted • '2' = Rejected
17	ExecID	String	Y	Will match the ExecID field from the execution report.
55	Symbol	String	Y	Will match the Symbol field from the execution report.
54	Side	String	Y	Will match the Side field from the execution report.
38	OrderQty	String	N	Would match the OrderQty field from the execution report.
31	LastPx	String	N	Would match the LastPx field from the execution report.
<MessageFooter>			Y	

Table 4.7: ExecutionAcknowledgement message definition

5 Firewall configuration

For the connections we use the following IP addresses. The ports will be provided by 360T.

Connection \ Environment	Production	Integration
Internet (plain)	193.29.38.145	193.29.38.80
Stunnel	193.29.38.145	193.29.38.80
Radianz	155.195.208.113	206.60.147.162

Table 5.1: 360T IP addresses

6 FIX Session Reset

By default, a FIX session reset is performed according to the schedule defined in the following table.

Setting	Description	Default Value
Timezone	Time zone to be used for the session schedule.	America/New York
Start Time	Time of day that this FIX session becomes activated.	17:01:00
End Time	Time of day that this FIX session becomes deactivated.	17:00:00
Start Day	Starting day of week for the session.	Saturday
End Day	Ending day of week for the session.	Saturday
Reset On Logon	Sequence number is reset when receiving a logon request.	Yes
Reset On Logout	Sequence number is reset to 1 after normal logout termination.	Yes
Reset On Disconnect	Sequence number is reset to 1 after abnormal termination.	Yes

Table 6.1: 360T FIX Session

7 Example Messages

On the following pages you will find messages to illustrate the most important workflows:

- Logon on page 29
- Test Request on page 29
- Market Data Request on page 30
- Market Data Snapshot/Full Refresh on page 30
- New Order on page 29
- Execution Report (Filled) on page 32
- Execution Report (Cancelled) on page 33
- Execution Report (Rejected) on page 34

7.1 Admin Messages

7.1.1 Logon[A] message - Request

(customer → 360T)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = A
98	EncryptMethod	NONE_OTHER ['0']
108	HeartBtInt	30
141	ResetSeqNumFlag	Y
<MessageFooter>		

Table 7.1: Logon[A] message

7.1.2 Logon[A] message

(360T → customer)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = A
98	EncryptMethod	NONE_OTHER ['0']
108	HeartBtInt	30
141	ResetSeqNumFlag	Y
<MessageFooter>		

Table 7.2: Logon[A] message

7.1.3 TestRequest[1] message

(360T → customer)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = 1
112	TestReqID	SmartFIX_100
<MessageFooter>		

Table 7.3: Test Request[1] message

7.2 Market Data

7.2.1 MarketDataRequest[V] message

(360T → customer)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = V
64	SettlDate	20190124
262	MDReqID	Q5mexBO-N6wkS
263	SubscriptionRequestType	2
264	MarketDepth	FULL_BOOK ['0']
265	MDUpdateType	FULL_REFRESH ['0']
146	NoRelatedSym	1
55	Symbol	USD/INR
267	NoMDEntryTypes	2
269	MDEntryType	0
269	MDEntryType	1
<MessageFooter>		

Table 7.4: MarketDataRequest[V] message

7.2.2 MarketDataSnapshotFullRefresh[W] message

(customer → 360T)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = W
262	MDReqID	qpehgf-f4rfm
55	Symbol	EUR/USD
268	NoMDEntries	6
269	MDEntryType	BID ['0']
270	MDEntryPx	1.13562
271	MDEntrySize	1000000
276	QuoteCondition	OPEN_ACTIVE ['A']
269	MDEntryType	BID ['0']
270	MDEntryPx	1.1356
271	MDEntrySize	3000000
Continued on next page		

7.2

Tag	Attribute	Value
276	QuoteCondition	OPEN_ACTIVE ['A']
269	MDEntryType	BID ['0']
270	MDEntryPx	1.1356
271	MDEntrySize	5000000
276	QuoteCondition	OPEN_ACTIVE ['A']
269	MDEntryType	OFFER ['1']
270	MDEntryPx	1.1357
271	MDEntrySize	1000000
276	QuoteCondition	OPEN_ACTIVE ['A']
269	MDEntryType	OFFER ['1']
270	MDEntryPx	1.13572
271	MDEntrySize	3000000
276	QuoteCondition	OPEN_ACTIVE ['A']
269	MDEntryType	OFFER ['1']
270	MDEntryPx	1.13573
271	MDEntrySize	5000000
276	QuoteCondition	OPEN_ACTIVE ['A']
<MessageFooter>		

Table 7.5: MarketDataSnapshotFullRefresh[W] message

7.3 Orders

7.3.1 NewOrderSingle[D] message

(360T → customer)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = D
1	Account	Test1
11	ClOrdID	SO-12063932
15	Currency	GBP
21	HandlInst	AUTOMATED_EXECUTION_ORDER_PRIVATE ['1']
38	OrderQty	5555
40	OrdType	LIMIT ['2']
44	Price	1.31004
54	Side	BUY ['1']
55	Symbol	GBP/USD
59	TimeInForce	FILL_OR_KILL ['4']
60	TransactTime	20190201-17:02:29.461
64	SettlDate	20190205
423	PriceType	FIXED_AMOUNT ['3']
553	Username	CLIENT.Treasurer
<MessageFooter>		

Table 7.6: NewOrderSingle[D] message

7.3.2 ExecutionReport[8] message - Filled

(customer → 360T)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = 8
52	SendingTime	20190201-17:02:01.275
55	Symbol	GBP/USD
64	SettlDate	20190205
11	ClOrdID	SO-12063930
37	OrderID	O20190201hold1000000123
17	ExecID	E20190201hold1000000456
Continued on next page		

Tag	Attribute	Value
150	ExecType	TRADE ['F']
39	OrdStatus	FILLED ['2']
1	Account	Test1
553	Username	CLIENT.Treasurer2
15	Currency	USD
54	Side	BUY ['1']
38	OrderQty	5555
44	Price	1.31001
151	LeavesQty	0
14	CumQty	0
6	AvgPx	0
<MessageFooter>		

Table 7.7: ExecutionReport[8] message

7.3.3 ExecutionReport[8] message - Cancelled

(customer → 360T)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = 8
55	Symbol	USD/HKD
64	SettlDate	20190208
11	ClOrdID	SO-12063899
37	OrderID	O20190201hold1000000182
17	ExecID	E20190201hold1000000172
150	ExecType	CANCELED ['4']
39	OrdStatus	CANCELED ['4']
1	Account	Test1
553	Username	CLIENT.Treasurer
15	Currency	USD
54	Side	BUY ['1']
38	OrderQty	3000
44	Price	7.84699
151	LeavesQty	0
14	CumQty	0
Continued on next page		

7.3

Tag	Attribute	Value
6	AvgPx	0
<MessageFooter>		

Table 7.8: ExecutionReport[8] message

7.3.4 ExecutionReport[8] message - Rejected

(customer → 360T)

Tag	Attribute	Value
	<MessageHeader>	MsgType <35> = 8
55	Symbol	EUR/USD
64	SettlDate	20190205
11	ClOrdID	SO-12063836
37	OrderID	O20190201hold1000000170
17	ExecID	E20190201hold1000000163
150	ExecType	REJECTED ['8']
39	OrdStatus	REJECTED ['8']
1	Account	Test1
553	Username	CLIENT.Treasurer1
15	Currency	USD
54	Side	BUY ['1']
38	OrderQty	50000
44	Price	1.14748
151	LeavesQty	0
14	CumQty	0
6	AvgPx	0
58	Text	REJ-RULE-Currency Pair / Size not enabled
<MessageFooter>		

Table 7.9: ExecutionReport[8] message

8 Version Log

Version	Date	Comments
0.9	2009-03-30	Initial Version
1.0	2009-08-17	Switched to MarketDataSnapshot/Full Refresh message type, added system message definitions, general refactoring
1.1	2010-07-12	Added support for multiple tiers
1.2	2010-07-21	Added group information in MessageHeader of MarketDataRequests
1.2.1	2010-08-09	Removed MDEntryID field
1.2.2	2010-08-23	Multiple changes: <ul style="list-style-type: none"> • Fixed field order in MarketDataSnapshot/Full Refresh • Added explanation of Bid/Offer values in MDEntryType • Removed Currency<15> from MarketData Snapshot/FullRefresh
1.2.3	2010-09-09	Multiple changes: <ul style="list-style-type: none"> • Added HandlInst and TimeInForce to NewOrderSingle • Updated values for Ordtype in ExecutionReport
1.2.4	2010-10-05	Fixed missing tag number for PriceType in NewOrderSingle
1.2.5	2010-12-09	Added optional ValidUntilTime to MarketData messages
1.2.6	2011-05-12	Added option to prevent further MarketDataRequest for the rest of the session (tag 281)
1.2.7	2011-07-26	Multiple changes: <ul style="list-style-type: none"> • Removed duplicate field in NewOrderSingle • Added clarification for PriceType • New document layout
1.2.8	2011-10-07	Added group name to NewOrderSingle
1.2.9	2011-10-13	Allow Partial Filling (NewOrderSingle, ExecutionReport)
1.2.10	2012-01-06	Clarified usage of Price field in ExecutionReport
1.2.11	2012-01-10	Added MDEntryDate to MarketDataSnapshotFullRefresh and SettlDate to Execution-Report
1.2.12	2012-06-20	Removed support for Market Orders
1.2.13	2012-10-26	Small fix in description of MarketDataSnapshotFullRefresh
1.3	2013-01-24	New versioning scheme and layout, added support for Swap streaming including USI and Mid rates
continued on next page		

8.0

Version	Date	Comments
1.3.1	2013-11-29	Note about partial fillings
1.3.2	2014-03-20	Added target IPs
1.3.3	2014-04-04	Clarifications for ResendRequest, MarketDataSnapshotFullRefresh, ExecutionReport, BusinessMessageReject
1.3.4	2014-09-25	Removed tag 7076 AggregateStreams for Market Data - Snapshot/Full Refresh messages
1.3.5	2015-04-23	Fixed referenced FIX version on the title page
1.4.0	2015-09-10	Added support for FX Forward and FX NDF streaming.
1.5.0	2016-05-18	Made rates and prices mandatory even for indicative quotes.
1.5.1	2016-07-21	Added Margin to NewOrderSingle
1.5.2	2017-09-04	Updated timeout specification (3s instead of 10s), remove section about partial filling
1.6.0	2018-05-08	Added support for FX Futures
1.6.1	2018-05-08	Multiple changes: <ul style="list-style-type: none"> • Added example messages • Added tag 14001 SpotRatePrecision for MarketDataRequest
1.7.0	2020-06-24	Added BN messages
1.8.0	2021-06-18	Added ForwardRatePrecision to MarketDataRequest for Forward and NDF
1.8.0	2021-06-18	Removed ReferenceSpotDate from MarketDataRequest for Forward and NDF
1.8.1	2022-02-11	Updated description for cross connect
1.9.0	2022-07-16	Added NDF SEF support (fields in NOS message).

Table 8.1: Version history