Japannext PTS
FIX Drop Copy Specification
for Equities

Version 1.11
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1. Introduction

This document explains access to the equities drop copy services of Japannext PTS via the FIX protocol. It describes the service's configuration and specifies the messages that can be received via subscription. For further information and inquiries regarding drop copy services or for questions concerning connectivity please contact Japannext PTS Technical Support via email to: ito@japannext.co.jp.

2. Overview

The drop copy service is designed to deliver real-time information about trading activity taking place at Japannext PTS and can be configured to send a message any time an order is entered, modified, canceled or executed. The service can be integrated for straight through processing (STP) into a client's risk management and settlement systems (see Figure 1).
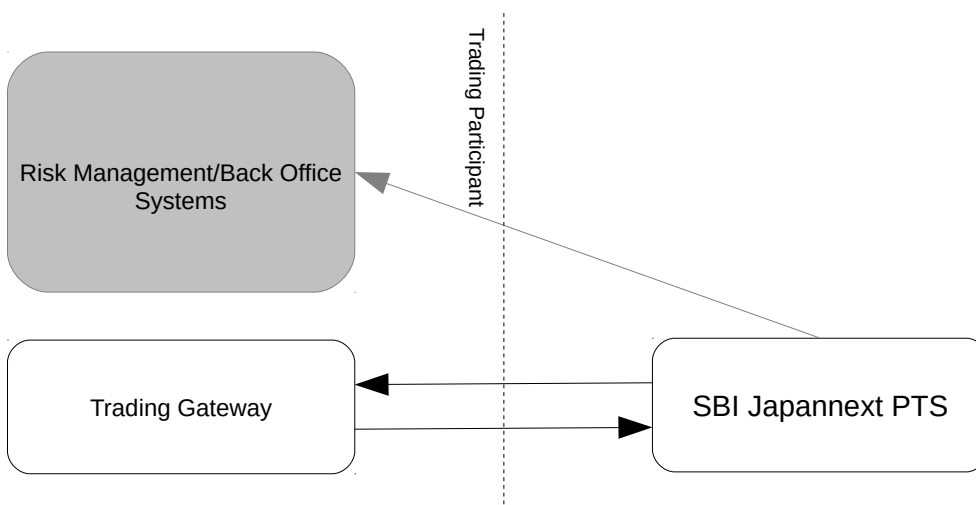
Figure 1: Drop copy integration

The TCP/IP protocol is used for the point-to-point transport layer.

3. Service Configuration

The drop copy service can be configured to deliver copies of transactions based on a combination of order entry port identifier, security group identifier and client reference.

Two subscription types are available:

- Reconciliation, consisting of only trade-related transactions.
- Full, consisting of both order and trade-related transactions.

The ClientID field can be configured to indicate the origin of an order with the following information:

- Order entry port identifier.
- Trade group identifier to which the order entry port belongs.
- Both of the above.

As an example, consider an institution with a trading facility which uses two order entry ports providing access to Japannext PTS for three trade groups (see Figure 2).

Figure 2: Trading flow

There are two typical use cases of the drop copy service, back office processing and risk management.
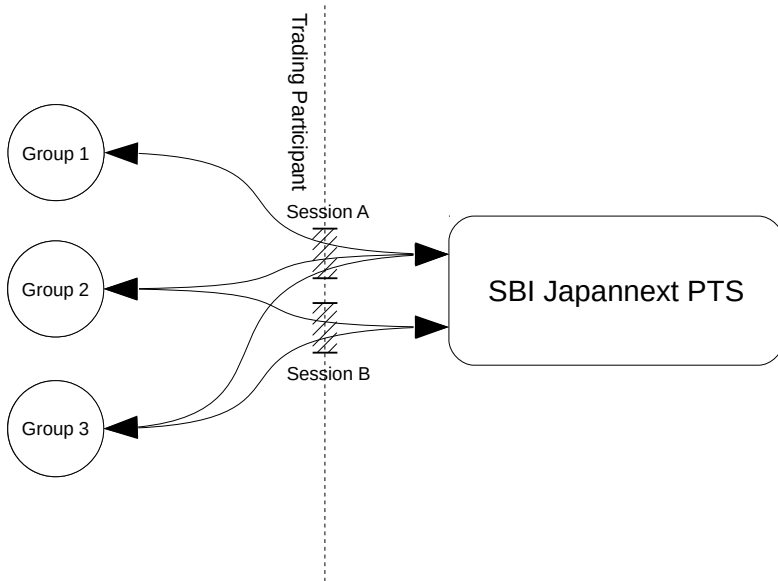
Usually a back office specific configuration includes copies of all trade reports for all trade groups (see Figure 3).
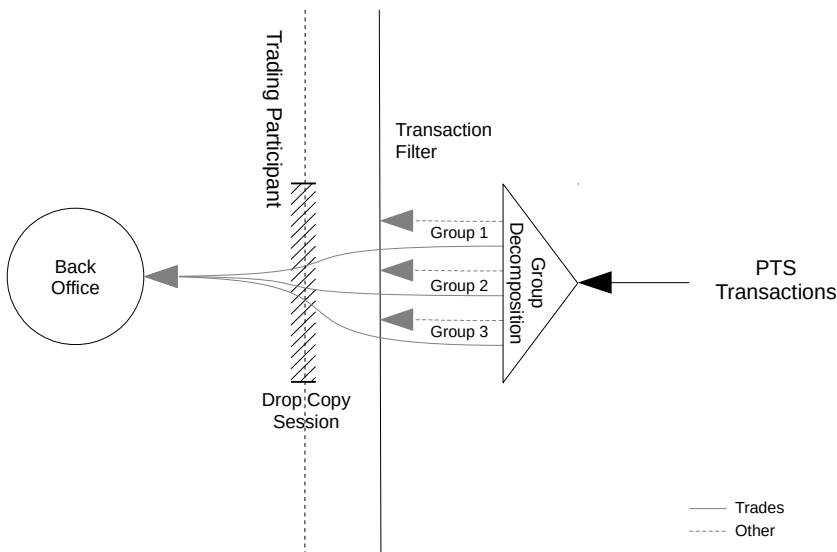
Figure 3: Back office specific flow

Whereas a risk management's scope of interest is more narrow, focusing only on particular trade groups, however is more detailed in that it includes all transactions (see Figure 4).
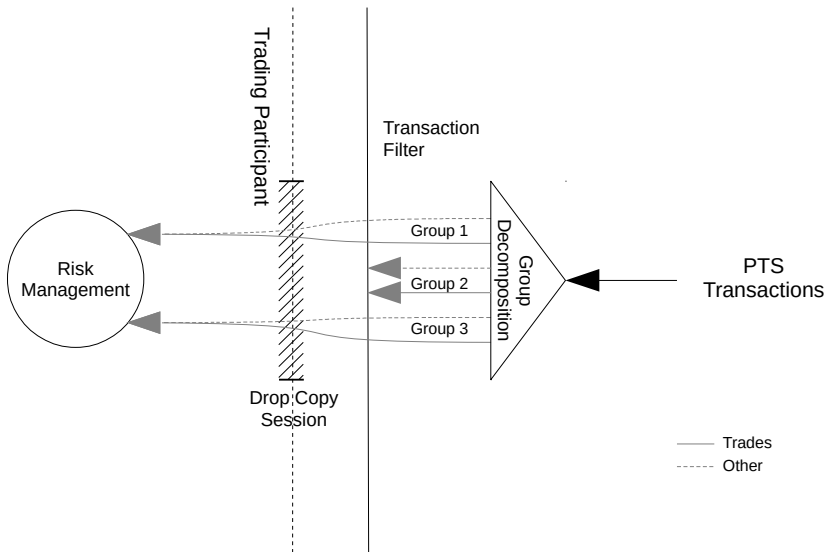
Figure 4: Risk management specific flow

4. FIX Protocol

The messaging described in this specification complies to the standard FIX 4.2 protocol. For details please refer to http://www.fixprotocol.org/specifications/FIX.4.2.

This specification follows the standard FIX specification as much as possible. However in limited cases fields and field values have been extended by backporting from the FIX 4.4 specification.

4.1 Data Types and Required Fields

Field data types in this specification are the same as those defined in the standard FIX specification. However, in certain places this specification further restricts field values from those specified in the standard. All field values will be stated in the message specification details.

All fields that are marked as required in the standard FIX specification are also marked as required in this specification (denoted 'Y' in the message definitions). Additionally this specification requires some fields which are not required by the FIX standard (denoted 'R').

4.2 Limitations

This specification applies limitations on particular field lengths.

Tag	Field Name	Comments
1	Account	Limited to 16 characters.
6	AvgPx	Limited to 8 whole number digits and 4 decimal places.
11	ClOrdID	Limited to 32 characters.
14	CumQty	Limited to 9 whole number digits.
17	ExecID	Limited to 30 characters.
31	LastPx	Limited to 8 whole number digits and 1 decimal place.
32	LastShares	Limited to 9 whole number digits.

Tag	Field Name	Comments
37	OrderID	Limited to 20 characters.
38	OrderQty	Limited to 9 whole number digits.
41	OrigClOrdID	Limited to 32 characters.
44	Price	Limited to 8 whole number digits and 1 decimal place.
50	SenderSubID	Limited to 10 characters.
55	Symbol	Limited to 4 characters.
57	TargetSubID	Limited to 10 characters.
109	ClientID	Limited to 20 characters.
110	MinQty	Limited to 9 whole number digits.
111	MaxFloor	Limited to 9 whole number digits.
151	LeavesQty	Limited to 9 whole number digits.

5. Protocol Mappings

This section defines mappings from the order entry protocols used in the trading services of Japannext PTS to the drop copy protocol.

5.1 FIX Order Entry

Fields in the drop copy messages match the originals in the trading messages with the exception of the ClientID field, where the firm identifier (MPID) in the original message is replaced with the order entry port and/or trade group identifiers.

5.2 OUCH Order Entry

OUCH Name	Tag	Field Name	Comments
Order Token	11	ClOrdID	Token in ASCII format.
Replacement Order Token			
Client Reference	1	Account	
Buy/Sell Indicator	54	Side	
Shares	38	OrderQty	Whole number in ASCII format.
Security Id	55	Symbol	Identifier in ASCII format.
Group	50	SenderSubID	
Price	44	Price	Decimal number in ASCII format.
Time in Force	59	TimeInForce	
Firm	109	ClientID	Replaced with the order entry port and/or trade group identifiers.
Capacity	47	Rule80A	
Order Reference Number	37	OrderID	In YYYYMMDD-<Order Reference Number> format.
Minimum Quantity	110	MinQty	Whole number in ASCII format.
Previous Order Token	41	OrigClOrdID	Token in ASCII format.
Canceled Order Reason	378	ExecRestatementReason	

OUCH Name	Tag	Field Name	Comments
Executed Shares	32	LastShares	Whole number in ASCII format.
Execution Price	31	LastPx	Decimal number in ASCII format.
Liquidity Indicator	851	LastLiquidityInd	
Match Number	880	TrdMatchID	In YYYYMMDD-<Match Number> format.

5.3 Order and Trade Identifiers

The ClOrdID, OrderID and TrdMatchID fields in the drop copy messages are the same as those in the corresponding messages on order entry ports.

Since a drop copy session can deliver messages aggregated from multiple order entry ports, the subscriber should not rely solely on the ClOrdID field to uniquely identify orders. Augmenting the ClOrdID with an appropriately configured ClientID can be used for this purpose.

The ExecID assigned to a drop copy message will differ from that of the original message. Uniqueness of this field is only guaranteed per individual drop copy session, however if the buy and sell sides of a trade are delivered over the same drop copy session they will have the same ExecID.

6. FIX Session Management

FIX sessions are uniquely defined by the SenderCompID and TargetCompID. Any attempt to establish an additional FIX session using the same CompIDs will be rejected.

At log on clients are identified by their SenderCompID.

Clients are required to log on to the service using the log on message. Once logged on, clients will need to send heartbeat messages to keep the session active.

In case of connection loss clients are required to again log on using the next transmitted sequence numbers while also taking care of any potential message loss in a FIX protocol compliant manner.

IP addresses, port numbers and CompIDs to use are issued upon application completion.

7. FIX Messages

7.1 Standard Header – Incoming Messages

Tag	Field Name	Req'd	Comments
8	BeginString	Y	Identifies beginning of new message and protocol version. Value is FIX.4.2.
9	BodyLength	Y	Message length, in bytes, forward to the CheckSum field.
34	MsgSeqNum	Y	Integer message sequence number.
35	MsgType	Y	Defines message type.
43	PossDupFlag		Indicates possible retransmission of message with this sequence number.
49	SenderCompID	Y	Used to identify firm sending message. As assigned by Japannext PTS.
50	SenderSubID		Assigned value used to identify specific message originator.
52	SendingTime	Y	Time of message transmission (always expressed in UTC).
56	TargetCompID	Y	Used to identify receiving firm. As assigned by Japannext PTS.
122	OrigSendingTime		Original time of message transmission (always expressed in UTC).

7.2 Standard Header – Outgoing Messages

Tag	Field Name	Req'd	Comments
8	BeginString	Y	Identifies beginning of new message and protocol version. Value is FIX.4.2.
9	BodyLength	Y	Message length, in bytes, forward to the CheckSum field.
34	MsgSeqNum	Y	Integer message sequence number.
35	MsgType	Y	Defines message type.
49	SenderCompID	Y	Used to identify firm sending message. As assigned by Japannext PTS.
50	SenderSubID		Assigned value used to identify specific message originator. Values: DAY = Daytime market DAYX = Daytime X-market DAYU = Daytime U-market NGHT = Nighttime market
52	SendingTime	Y	Time of message transmission (always expressed in UTC).
56	TargetCompID	Y	Used to identify receiving firm. As assigned by Japannext PTS.
122	OrigSendingTime		Original time of message transmission (always expressed in UTC).

7.3 Standard Trailer

Tag	Field Name	Req'd	Comments
10	CheckSum	Y	Three byte, simple checksum.

7.4 Administrative Messages

7.4.1 Logon

Tag	Field Name	Req'd	Comments
Standard header			MsgType=A
98	EncryptMethod	Y	Method of encryption. Not supported. Values: 0=None / other
108	HeartBtInt	Y	Heartbeat interval (seconds). Recommended value is 30 seconds.
141	ResetSeqNumFlag		Indicates that both sides of the FIX session should reset sequence numbers.
553	Username		Userid. As assigned by Japannext PTS.
554	Password		Password or passphrase. As assigned by Japannext PTS.
Standard trailer			

7.4.2 Heartbeat

Tag	Field Name	Req'd	Comments
Standard header			MsgType=0
112	TestReqID		Required when the heartbeat is the result of a Test Request message.
Standard trailer			

7.4.3 Test Request

Tag	Field Name	Req'd	Comments
Standard header			MsgType=1
112	TestReqID	Y	Identifier to be returned in resulting Heartbeat.
Standard trailer			

7.4.4 Resend Request

Tag	Field Name	Req'd	Comments
Standard header			MsgType=2
7	BeginSeqNo	Y	Message sequence number of first message in range to be resent.
16	EndSeqNo	Y	Message sequence number of last message in range to be resent.
Standard trailer			

7.4.5 Reject

Tag	Field Name	Req'd	Comments
Standard header			MsgType=3
45	RefSeqNum	Y	The MsgSeqNum of the FIX message being referenced.
58	Text		Text message explaining reject reason.
371	RefTagID		The tag number of the FIX field being referenced.
372	RefMsgType		The MsgType of the FIX message being referenced.
373	SessionRejectReason		Code to identify reason for a session-level Reject message. Values: 0=Invalid tag number 1=Required tag missing 2=Tag not defined for this message type 3=Undefined tag 4=Tag specified without a value 5=Value is incorrect (out of range) for this tag 6=Incorrect data format for value 9=CompID problem 10=SendingTime accuracy problem 11=Invalid MsgType
Standard trailer			

7.4.6 Sequence Reset

Tag	Field Name	Req'd	Comments
Standard header			MsgType=4
36	NewSeqNo	Y	New sequence number.
123	GapFillFlag		Indicates replacing administrative or application messages which will not be resent.
Standard Trailer			

7.4.7 Logout

Tag	Field Name	Req'd	Comments
Standard header			MsgType=5
58	Text		Text message explaining logout reason.

Tag	Field Name	Req'd	Comments
Standard trailer			

7.5 Application Messages

7.5.1 Execution Report – Order Accepted

Tag	Field Name	Req'd	Comments
Standard header			MsgType=8
1	Account		Account mnemonic as agreed between the institution and Japannext PTS.
6	AvgPx	Y	Calculated average price of all fills on this order. Value is 0.
11	ClOrdID		Unique identifier for the order as assigned by the institution.
14	CumQty	Y	Total number of shares filled. Value is 0.
17	ExecID	Y	Unique identifier of execution message as assigned by Japannext PTS.
20	ExecTransType	Y	Identifies transaction type. Values: 0=New
37	OrderID	Y	Unique identifier for order as assigned by Japannext PTS.
38	OrderQty	R	Quantity accepted.
39	OrdStatus	Y	Identifies current status of this order. Values: 0=New
40	OrdType	R	Order type. Values: 2=Limit
44	Price	R	Price per share.
47	Rule80A		Designates the capacity of the firm placing the order. Values: A=Agency P=Principal
54	Side	Y	Side of order. Values: 1=Buy 2=Sell 5=Sell short 6=Sell short exempt
55	Symbol	Y	Ticker symbol. Value is 4 digit Quick code.
59	TimeInForce		Specifies how long the order remains in effect. Values: 0=Day 3=Immediate or Cancel (IOC) 4=Fill or Kill (FOK)
60	TransactTime	R	Time of order creation (expressed in UTC).
109	ClientID		Order entry port and/or trade group identifiers as assigned by Japannext PTS.
110	MinQty		Minimum quantity of an order to be executed.
111	MaxFloor		Maximum number of shares within an order to be shown on the exchange floor at any given time.

Tag	Field Name	Req'd	Comments
150	ExecType	Y	Describes the specific Execution Report. Values: 0=New
151	LeavesQty	Y	Amount of shares open for further execution. Value is the same as that of OrderQty.
797	CopyMsgIndicator	R	Indicates whether or not this message is a drop copy of another message. Value is Y.
Standard trailer			

7.5.2 Execution Report – Order Replaced

Tag	Field Name	Req'd	Comments
Standard header			MsgType=8
1	Account		Account mnemonic as agreed between the institution and Japannext PTS.
6	AvgPx	Y	Calculated average price of all fills on this order.
11	ClOrdID		Unique identifier for the order as assigned by the institution.
14	CumQty	Y	Total number of shares filled.
17	ExecID	Y	Unique identifier of execution message as assigned by Japannext PTS.
20	ExecTransType	Y	Identifies transaction type. Values: 0=New
37	OrderID	Y	Unique identifier for order as assigned by Japannext PTS.
38	OrderQty	R	Quantity accepted.
39	OrdStatus	Y	Identifies current status of this order. Values: 1=Partially filled 2=Filled 5=Replaced
40	OrdType	R	Order type. Values: 2=Limit
41	OrigClOrdID		ClOrdID of the previous order (not the initial order) as assigned by the institution.
44	Price	R	Price per share.
47	Rule80A		Designates the capacity of the firm placing the order. Values: A=Agency P=Principal
54	Side	Y	Side of order. Values: 1=Buy 2=Sell 5=Sell short 6=Sell short exempt
55	Symbol	Y	Ticker symbol. Value is 4 digit Quick code.
59	TimeInForce		Specifies how long the order remains in effect. Values: 0=Day 3=Immediate or Cancel (IOC) 4=Fill or Kill (FOK)

Tag	Field Name	Req'd	Comments
60	TransactTime	R	Time of order modification (expressed in UTC).
109	ClientID		Order entry port and/or trade group identifiers as assigned by Japannext PTS.
110	MinQty		Minimum quantity of an order to be executed.
111	MaxFloor		Maximum number of shares within an order to be shown on the exchange floor at any given time.
150	ExecType	Y	Describes the specific Execution Report. Values: 5=Replaced
151	LeavesQty	Y	Amount of shares open for further execution.
378	ExecRestatementReason		Code to identify reason for unsolicited cancel. Values: 100 = Trade prevention
797	CopyMsgIndicator	R	Indicates whether or not this message is a drop copy of another message. Value is Y.
Standard trailer			

7.5.3 Execution Report – Order Canceled

Tag	Field Name	Req'd	Comments
Standard header			MsgType=8
1	Account		Account mnemonic as agreed between the institution and Japannext PTS.
6	AvgPx	Y	Calculated average price of all fills on this order.
11	ClOrdID		Unique identifier for the order as assigned by the institution.
14	CumQty	Y	Total number of shares filled.
17	ExecID	Y	Unique identifier of execution message as assigned by Japannext PTS.
20	ExecTransType	Y	Identifies transaction type. Values: 0=New
37	OrderID	Y	Unique identifier for order as assigned by Japannext PTS..
38	OrderQty	R	Quantity accepted.
39	OrdStatus	Y	Identifies current status of this order. Values: 4=Canceled
40	OrdType	R	Order type. Values: 2=Limit
41	OrigClOrdID		ClOrdID of the previous order (not the initial order) as assigned by the institution.
44	Price	R	Price per share.
47	Rule80A		Designates the capacity of the firm placing the order. Values: A=Agency P=Principal
54	Side	Y	Side of order. Values: 1=Buy 2=Sell 5=Sell short 6=Sell short exempt

Tag	Field Name	Req'd	Comments
55	Symbol	Y	Ticker symbol. Value is 4 digit Quick code.
59	TimeInForce		Specifies how long the order remains in effect. Values: 0=Day 3=Immediate or Cancel (IOC) 4=Fill or Kill (FOK)
60	TransactTime	R	Time of order cancellation (expressed in UTC).
109	ClientID		Order entry port and/or trade group identifiers as assigned by Japannext PTS.
110	MinQty		Minimum quantity of an order to be executed.
111	MaxFloor		Maximum number of shares within an order to be shown on the exchange floor at any given time.
150	ExecType	Y	Describes the specific Execution Report. Values: 4=Canceled
151	LeavesQty	Y	Amount of shares open for further execution. Value is 0.
378	ExecRestatementReason		Code to identify reason for unsolicited cancel. Values: 2 = Verbal change 12 = Cancel on connection loss 99 = Other 100 = Trade prevention
797	CopyMsgIndicator	R	Indicates whether or not this message is a drop copy of another message. Value is Y.
Standard trailer			

7.5.4 Execution Report – Trade

Tag	Field Name	Req'd	Comments
Standard header			MsgType=8
1	Account		Account mnemonic as agreed between the institution and Japannext PTS.
6	AvgPx	Y	Calculated average price of all fills on this order.
11	ClOrdID		Unique identifier for the order as assigned by the institution.
14	CumQty	Y	Total number of shares filled.
17	ExecID	Y	Unique identifier of execution message as assigned by Japannext PTS.
20	ExecTransType	Y	Identifies transaction type. Values: 0=New
31	LastPx	R	Price of this (last) fill.
32	LastShares	R	Number of shares bought/sold on this (last) fill.
37	OrderID	Y	Unique identifier for order as assigned by Japannext PTS.
38	OrderQty	R	Quantity accepted.
39	OrdStatus	Y	Identifies current status of this order. Values: 1=Partially filled 2=Filled

Tag	Field Name	Req'd	Comments
40	OrdType	R	Order type. Values: 2=Limit
44	Price	R	Price per share.
47	Rule80A		Designates the capacity of the firm placing the order. Values: A=Agency P=Principal
54	Side	Y	Side of order. Values: 1=Buy 2=Sell 5=Sell short 6=Sell short exempt
55	Symbol	Y	Ticker symbol. Value is 4 digit Quick code.
59	TimeInForce		Specifies how long the order remains in effect. Values: 0=Day 3=Immediate or Cancel (IOC) 4=Fill or Kill (FOK)
60	TransactTime	R	Time of execution (expressed in UTC).
109	ClientID		Order entry port and/or trade group identifiers as assigned by Japannext PTS.
110	MinQty		Minimum quantity of an order to be executed.
111	MaxFloor		Maximum number of shares within an order to be shown on the exchange floor at any given time.
150	ExecType	Y	Describes the specific Execution Report. Values: 1=Partial fill 2=Fill
151	LeavesQty	Y	Amount of shares open for further execution.
797	CopyMsgIndicator	R	Indicates whether or not this message is a drop copy of another message. Value is Y.
851	LastLiquidityInd	R	Indicator to identify whether this fill was a result of a liquidity provider providing or liquidity taker taking the liquidity. Values: 1 = Added liquidity 2 = Removed liquidity
880	TrdMatchID	R	Identifier assigned to a trade by a matching system.
Standard trailer			

7.5.5 Business Message Reject

Tag	Field Name	Req'd	Comments
Standard header			MsgType=j
45	RefSeqNum		The MsgSeqNum of the FIX message being referenced.
58	Text		Text message explaining reject reason.
372	RefMsgType	Y	The MsgType of the FIX message being referenced.

Tag	Field Name	Req'd	Comments
380	BusinessRejectReason	Y	Code to identify reason for a Business Message Reject message. Values: 0 = Other 3 = Unsupported Message Type
Standard trailer			

Revision History

Date	Version	Changes
2011-02-25	1.0	Initial revision.
2011-07-13	1.1	Added Username (553) and Password (554) fields to Logon message.
2011-12-16	1.2	Correct PTS name used.
2012-04-06	1.3	ClOrdID (11) limit updated.
2012-04-18	1.4	Fixed typo in the Username (553) tag number. Minor rephrasing of the Overview and System Configuration sections. Incoming and outgoing messages now defined from the exchange point of view.
2012-05-11	1.5	Added LastLiquidityInd (851) field to Execution Report – Trade. Added list of values for PTS side SubIDs. Added MinQty (110) field to Execution Report messages. Added MaxFloor (111) field to Execution Report messages. Updated comment for OrderID (37) field to denote that it is not required to be preserved within the order chain.
2012-09-24	1.6	Added OrigClOrdID (41) field to Execution Report – Replaced and Execution Report – Canceled.
2012-12-26	1.7	Added TrdMatchID (880) field to Execution Report – Trade. Added Protocol Mappings section. Reworded descriptions for Account (1), TimeInForce (59) and Rule80A (47) fields.
2014-01-22	1.8	Added ExecRestatementReason (378) field to Execution Report – Order Replaced and Execution Report – Order Canceled. Removed PossResend (97) field from standard header.
2015-01-22	1.9	Mentioned the U-market.
2015-06-25	1.10	Removed Text (58) filed from all non-reject messages.
2016-09-23	1.11	Fixed requirement for OrigClOrdID (41) field in Execution Report – Order Replaced. Changed to not required. Fixed values for OrdStatus (39) field in Execution Report – Trade. Removed Pending Cancel (6) and Pending Replace (E). Removed TradeDate (75) field from Execution Report – Trade.