CHX FIX Link Specification

Version 1.32, Revised 12/01/2015

Revision History

Date	Initials	Revision
02/28/06 v 1.00	YT	Initial release
5/15/06 v 1.01	RJG	Added ISO and additional order types
6/2/06 v 1.02	YT	Added LastMkt on execution reports.
6/3/06 v 1.03	YT	Modifications to the cross with satisfy order type
6/5/06 v 1.04	RGG & YT	Modifications for cross orders and updated the cross with satisfy examples
8/8/06 v 1.05	YT	Stated that the *MaxFloor* must be a round lot value and less than the *OrderQty*.
9/9/06 v 1.06	YT	Deleted the value "Primary and post-primary sessions" (3) of the TradingSessionID field.
10/07/06 v 1.07	YT	Modifications for Reg NMS
02/14/07 v 1.08	YT	Add *ContraBroker* to execution report
2/15/07 v 1.08	RJG	Specify order type availability and add *ExecBroker* to execution report
03/02/07 v 1.09	YT	Add *LastLiquidityInd* to Execution Report.
6/05/07 v 1.10	RJG	Document update.
7/09/07 v 1.11	RJG	Changed Rule80A to optional
10/05/07 v 1.12	RGG	Added Account to new order and execution report. Added AnonymityFlag to new order. Removed Sell Short Exempt and Cross Short Exempt as valid sides for new orders.
10/10/07 v 1.13	RJG	Removed Appendix A - Tag 47 definitions
01/02/08 v 1.14	YT	Added the Stock-Option execution instruction to the inbound New Order message and removed the Opening Cross order type from the spec.
06/10/08 v 1.15	JAC	Changed default value of RefreshThreshold from 0 to MaxFloor for CHX Matching System orders.
08/07/08 v 1.16	JAC	Added ExecClearingFirm to Execution Report.
09/16/08 v 1.17	JAC	ExecBroker is required field on Exec Reports received for CHX Outbound orders.
07/15/09 v 1.18	JAC	Added Post only and Always Quote to New Order ExecInst. Added new trading sessions to New Order TradingSessionID.
07/27/09 v 1.19	JAC	Always Quote has been approved by SEC.
09/24/09 v 1.20	JAC	New trading sessions approved by SEC. Changed names to conform to rule filing.
10/21/2010 v 1.21	JAC	Restored Sell Short Exempt and Cross Short Exempt as valid sides.

Date	Initials	Revision
02/03/11 v 1.22	JAC	Added CHXOnly to New Order. Added WorkPx to Execution Report.
02/07/11 v 1.23	YT	FIX 4.2
06/16/11 v 1,24	DAS	Remove the Outbound ISO, Cross with Yield and Cross with Satisfy order types and all references/fields associated with them.
01/27/12 V 1.25	DAS	Add the Text and ClientID fields to the Inbound Order message. Also added the Account, Text and ClientID fields to the Outbound Order Message.
08/22/13 V 1.26	YT	Updates for MTP. Note: The implementation of Match Trade Prevention functionality is subject to SEC approval. The tentative implementation date is 12/2/2013.
11/21/2013 v 1.27	JAC	Match Trade Prevention (MTP) has been approved by the SEC with an implementation date of 12/2/2013.
09/24/2014 v 1.28	JAC	Revised Rule80A (Tag 47) comments.
01/23/2015 v 1.29	JAC	Added MERoutingInst to New Order.
05/21/2015 v 1.30	JAC	Updates for SNAP^{sm} Auctions on New Order, Execution Report and Cancel/Replace Request. Revised ExecInst, LastLiquidityInd, OrdType and TimeInForce. Added PegDiff, CancelOnAuctionCode, SNAPMinExecRequiredFlag, SNAPConvertToAOOFlag and AOOOneAndDoneFlag. Removed reference to Cross with Satisfy and Outbound ISO Removed tags 7382, 7383, 7384, 7385 and 7386
11/11/2015 v 1.31	JAC	Added custom tag 7400 to define SNAP^{sm} and SNAP^{sm} AOO orders on New Order and Execution Report. Deprecated OrdType and TimeInForce values which previously defined SNAP^{sm} and AOO orders on New Order and Execution Report.
12/01/2015 v 1.32	JAC	Added custom tag 7400 to Cancel/Replace Request.

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1. Introduction

This document is intended for firms who would like to connect to the CHX Matching System and CHXConnect with the FIX protocol.

CHX supports **FIX 4.0, 4.1** and **4.2**. This document describes functionality that is proprietary, optional, different or possibly unclear in the original specifications. The standard FIX specifications can be accessed at www.fixprotocol.org. Please note that any fields denoted in the message tables as "**For FIX 4.1**" and "**For FIX 4.2**" are included in the message for FIX 4.1 and FIX 4.2 respectively, and are excluded from the message for FIX 4.0 unless otherwise specified.

2. FIX Session

The firm will connect to the CHX system at a pre-arranged IP address and port number.

CHX's CompID (*TargetCompID* or *SenderCompID*) is always "CHX". The firm's CompID will be determined during initial configuration and has a maximum length of 12 characters.

2.1 Message Header

Each administrative or application message is preceded by a standard header.

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.0 FIX 4.1 or FIX 4.2
9	BodyLength	Y	Must be second field in message
35	MsgType	Y	Must be third field in message
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	A maximum four-character field used to identify firm originating message.
116	OnBehalfOfSubID	N	Sub ID of the *OnBehalfOfCompID*
128	DeliverToCompID	N	A four-alphabetic character field agreed upon by the recipient and CHX used to identify the destination targeted to receive the message. Possible destinations include: • CHX's Matching System ('ECHX'); • Off exchange market-makers via CHXConnect; • Institutional Brokers; and • CHX supported routing vendors. Individual destinations will be identified with a four alphabetic character symbol. The symbol for CHX's Matching System is 'ECHX'. CHX does not support cancel/replace to different DeliverToCompIDs.
129	DeliverToSubID	N	Sub ID of the *DeliverToCompID*
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.

Tag	Field Name	Req'd	Comments
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.
34	MsgSeqNum	Y	
52	SendingTime	Y	Expressed in GMT.

Order sending firms can specify the destination for an order. Currently, the following destination types are supported by the CHX:

- **CHX Matching System**– Route the order directly to the Matching System (*DeliverToCompID* symbol 'ECHX');

- **Routing Vendor** – Route the order to the designated order routing vendor that interfaces with CHX's network.

- **Institutional Brokers** – Route the order to a specified CHX Institutional Broker.

- **Off Exchange Market Maker** – Route the order to a specified off exchange market maker .

The firm can specify the destination in the *DeliverToCompID* (tag 128) field. For examples of order messages with specified order routing destinations, please refer to the *FIX Message Examples* section. A list of CHX supported off exchange market makers, Institutional Brokers, vendor destinations and corresponding symbols may be obtained from CHX.

Order cancel, cancel/replace or status requests do not need to supply the same order routing information as in the original order. The CHX will route these messages to the same destination as the original order. If the order routing information is supplied on the cancel, cancel/replace and status request messages, the order routing information will be ignored.

2.2 Logon Message

While data encryption is supported within the FIX specification, CHX does not support this feature. CHX only establishes connections to order sending firms via a dedicated circuit.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = A*
98	EncryptMethod	Y	Always 0 (None).
108	HeartBtInt	Y	Pre-arranged between CHX and the broker. CHX will adjust to this value (received from the firm) and put it in the confirmation Logon message (sent to the firm)
141	ResetSeqNumFlag	N	CHX doesn't support 24-hour connectivity so if a firm sends a logon with ResetSeqNumFlag=Y, it will reject the logon message. **For FIX 4.1/4.2**

The fields *RawDatalength* and *RawData* are not supported

2.3 Email

The CHX has the ability to send and receive **Email** messages.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = C*

Tag	Field Name	Req'd	Comments
94	EmailType	Y	Valid values: 0 = New 1 = Reply 2 = Admin Reply
164	EmailThreadId	Y	Unique identifier (for the day) for an email thread (new and chain of replies). Positive numeric. **For FIX 4.1/4.2**
55	Symbol	N	Stock symbol
65	SymbolSfx	N	
147	Subject	Y	**For FIX 4.1/4.2**
33	LinesOfText	Y	
58	→ Text	Y	The total maximum length of Text(s) is 80 characters.

2.4 Other Session Control Messages

All other administrative messages for session control – **Heartbeat, Test Request, Resend Request, Reject, Sequence Reset and Logout** – are supported as described in the FIX Protocol Specification which can be accessed at www.fixprotocol.org.

3. Inbound Order (to CHX) Messages

The specifications in this section are intended for firms who would like to send orders to the CHX Matching System or CHXConnect.

3.1 New Order

Cross orders, which are indicated by the *Side* equal to Cross (8), Cross Short (9) or Cross Short Exempt (A), cannot be canceled or canceled/replaced. Cross orders must have the *BuyerFirm* and *SellerFirm* specified. CHX Market Makers cannot submit cross orders.

The Benchmark order type is temporarily available only through BrokerPlex.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = D*
1	Account	N	Account as specified by the order sender. The Account is limited to 20 characters. This value will be returned on any execution report for the order. **In the case of Side = 8 (Cross), 9 (Cross Short) or A (Cross Short Exempt) it contains the IDB.**
11	ClOrdID	Y	This field must at a minimum be unique for the current day. For multi-day, the firm must assure uniqueness of this field across days. Embedding a date with the *ClOrdID* would be one solution.
21	HandlInst	Y	1 = Automated execution order, private, no Broker intervention. 2 = Automated execution order, public, Broker intervention O.K. 3 = Manual Order, best execution.

Tag	Field Name	Req'd	Comments
55	Symbol	Y	
54	Side	Y	1 = Buy 2 = Sell 3 = Buy minus 4 = Sell plus 5 = Sell short 6 = Sell short exempt 8 = Cross 9 = Cross short A = Cross short exempt
38	OrderQty	Y	Maximum quantity accepted by the Matching System is 99,999,999
111	MaxFloor	N	Maximum number of shares within an order to be displayed at any given time. See Section 7. Valid values and fields for the CHX Matching System.
7369	RefreshThreshold	N	User-defined field. See Section 7. Valid values and fields for the CHX Matching System.
40	OrdType	Y	1 = Market 2 = Limit 3 = Stop 4 = Stop limit 5 = Market on close 6 = With or without 7 = Limit or better B = Limit on close The following are user-defined values: P = Peg Q = Midpoint Cross Cross orders must have the *BuyerFirm* and *SellerFirm* specified. Any Midpoint Cross (Q) order must not have the *Price* (#44). Otherwise, it will be rejected.
63	SettlmntTyp	N	0 = Regular 1 = Cash 2 = Next Day (T+1) 3 = T+2 4 = T+3 5 = T+4 6 = Future 7 = When And If Issued 8 = Sellers Option 9 = T+5
64	FutSettDate	N	Required when *SettlmntTyp* = 6 (Future) or 8 (Sellers Option).

Tag	Field Name	Req'd	Comments
18	ExecInst	N	CHX accepts only: 1 = Not held 5 = Held E = Do not increase - DNI F = Do not reduce - DNR G = All or none – AON K = Cancel on Trading Halt X = Trade Along The following Peg modifiers are only allowed on SNAP^{sm} AOO (Auction Only Order) (see Time in Force below): P = Market Peg – Buy pegged to offer; Sell to bid R = Primary Peg – Buy pegged to bid; Sell to offer M = Midpoint Peg f = Inter-market Sweep Order (ISO) The following are custom values: p = Post only q = Always quote v = Stock-Option (for cross orders only)
7387	ISOType	N	Custom field, ISO type. Applicable for ISO orders (Tag 18 *ExecInst* = *f*). Absence of this field is interpreted as 0 (Price-penetrating ISO). 0 = Price-penetrating ISO (default) 1 = BBO ISO (may rest in book if TimeInForce not '3' (IOC))
7388	TradeThroughExemptType	N	Custom field. Indicates trade-through exemption type. Applicable for cross orders that have no ISO execution type (i.e., Tag 18 *ExecInst* <> *f*) and Tag 54 *Side = 8, 9 or A* (Cross, Cross short or cross short exempt)). 1 = Benchmark [When available] 2 = Qualified Contingent Trade
65	SymbolSfx	N	
44	Price	N	Maximum price accepted by the Matching System is 9,999,999.99
99	StopPx	N	
47	Rule80A (aka OrderCapacity)	N	A Participant must definitively indicate its capacity on every order and may do so using the following means: Proprietary: Tag 47="P" Riskless Principal: Tag 47 ="R" Agency: Tag 47="A" OR Tag 47 omitted
59	TimeInForce	N	0 = Day 1 = Good Till Cancel 2 = At the Opening 3 = Immediate or Cancel 4 = Fill or Kill 5 = Good Till Crossing 6 = Good Till Date A = Good For Seconds (GFS; # of seconds) [Available in later releases.]
126	ExpireTime	N	Required if *TimeInForce* = GTD.

Tag	Field Name	Req'd	Comments
7368	GFSSeconds	N	Populated when TimeInForce = GFS. [Available in later releases.]
439	ClearingFirm	N	Clearing firm account symbol that is going to clear the trade.
7365	BuyerFirm	N	Required if *Side* = 8 (Cross) or 9 (Cross Short). 4 alphanumeric.
7366	SellerFirm	N	Required if *Side* = 8 (Cross) or 9 (Cross Short).4 alphanumeric.
7374	RoutingInst	N	User-defined field. Routing instruction. Absence of this field is interpreted as Normal (0) 0 = Normal – If the order cannot be sent to the destination the order is eligible for routing. 1 = 'Do not route' If the order cannot be sent to the specified destination, reject the order back to the sender.
7393	MERoutingInst	N	Instructs the ME to either route the order to satisfy Reg. NMS Rule 610 & 611 requirements or reject the order back to the sender. 0 – External routing allowed. 1 – External routing not allowed. ME only order.
336	TradingSessionID	N	Indicates the trading session(s) the order is eligible to be traded in. Absence of this field indicates valid to all sessions. 1 = Primary trading session 2 = Late Crossing session – Only cross (except Midpoint Cross) orders accepted. 4 = Late trading session 5 = Early trading session 6 = Early and Primary trading sessions 7 = Early, Primary, and Late trading sessions
7391	AnonymityFlag	N	Flag to determine whether the order sender is to remain anonymous. N = Order sender will NOT be anonymous and will be displayed on the CHX Book Feed, as ContraBroker on execution reports and in clearing transactions. Y = Order sender will be anonymous in the CHX Book Feed, as ContraBroker on executions and within clearing transactions. Note: If this tag is omitted, the order will not be anonymous. Instead of using this tag, the firm can request that all orders to the CHX remain anonymous by contacting Customer Service.
7394	CHXOnly	N	Indicates CHX Only order type. N = Do not process as CHX Only order. S = CHX Only order. Price will slide to avoid locking/crossing NBBO. L = CHX Only order if price locks NBBO; reject order if price crosses NBBO. Note: If this tag is omitted, the CHX Only order type will default to N (Do not process as CHX Only). Firms can contact Customer Service to set an alternative default value.
60	TransactTime	Y	**For FIX 4.2**

Tag	Field Name	Req'd	Comments
58	Text	N	In the case of Side = 8 (Cross), 9 (Cross Short) or A (Cross Short Exempt) it contains the Options ID.
109	ClientID	N	In the case of Side = 8 (Cross), 9 (Cross Short) or A (Cross Short Exempt) it contains the Order Originator.
7928	MatchTradePrevention	N	Used to prevent the order from trading against other orders from the same trading group. 2 characters (not space separated): 1st character – MTP Action: I = No MTP Action (Inactivate the trading account default MTP action, if any) N = Cancel Newest (or incoming order) O = Cancel Oldest (or resting order) B = Cancel Both 2nd character – MTP Sub Level (optional): Member specified alphanumeric value 0-9, A-Z, or a-z. When MTP is triggered (preventing a match), the MTP Action (1st character) of the inbound order will always be honored (the MTP Action of the resting order is irrelevant). If specified on the incoming order, the MTP Sub Level (2nd character) of both orders must match to prevent a trade. Absence of this field indicates No MTP Action by default. However, Firms can contact Customer Service to set an alternative default value.

Tag	Field Name	Req'd	Comments
211	PegDiff	N	Must be expressed as the number of ticks for the given instrument. A SNAP^{sm} AOO Market Peg buy order can be pegged to the offer with a positive or negative value; a positive value would make the order more competitive, a negative value would make the order less competitive. SNAP^{sm} AOO Market Peg sell order can be pegged to the bid with a positive or negative value; a positive value would make the order less competitive, a negative value would make the order more competitive. SNAP^{sm} AOO Primary Peg buy order can be pegged to the bid with a positive or negative value; a positive value would make the order more competitive while a negative value would make the order less competitive. SNAP^{sm} AOO Primary Peg sell order can be pegged to the offer with a positive or negative value; a positive value would make the order less competitive while a negative value would make the order more competitive. The value must be in the range -9999 to 9999. Depending on the tick size of the instrument and the price of the order, this would translate to -0.9999 to 0.9999 below 1.00, -99.99 to 99.99 above 1.00 for an instrument with a tick size of 0.01, -999.90 to 999.90 for an instrument with a tick size of 0.10, etc. For more details, see "Section 6: FIX message examples".
7396	CancelOnSNAPAuctionFlag	N	Determines if order participates in SNAP^{sm} Auctions. 'Y' –When a SNAP^{sm} Auction is invoked, the order will be canceled, it will not participate in the SNAP^{sm} Auction. 'N' –When a SNAP^{sm} Auction is invoked, the order will not be canceled, it will participate in the SNAP^{sm} Auction. Note: If this tag is omitted, the CancelOnSNAPAuctionFlag will default to 'N'. Firms can contact Customer Service to set an alternative default value.

Tag	Field Name	Req'd	Comments
7397	SNAPMinExecRequiredFlag	N	Only relevant on a SNAP[sm] order. Flag determines if the SNAP[sm] order requires a minimum number of shares to be projected to execute in the SNAP[sm] Auction before invoking the SNAP[sm] Auction, otherwise if the minimum participation shares are not projected to execute during the SNAP[sm] Auction, the SNAP[sm] order will be canceled without invoking the SNAP[sm] Auction. Note: Although SNAP[sm] orders initiate the SNAP[sm] Auction, there is no guarantee the SNAP[sm] order will participate. 'Y = Minimum SNAP[sm] threshold required. 'N' = Minimum SNAP[sm] threshold not required. Absence of this field indicates the minimum SNAP threshold is not required.
7398	SNAPConvertToAOOFlag	N	Only relevant on a SNAP[sm] order. 'Y' = If this SNAP[sm] order received after SNAP[sm] Auction already invoked by another SNAP[sm] order, this SNAP[sm] order will be converted to SNAP[sm] AOO One and Done, as long as it meets the SNAP[sm] AOO requirements. 'N' = If this SNAP order received after SNAP[sm] Auction already invoked by another SNAP[sm] order, this SNAP[sm] order will be canceled. Absence of this field indicates SNAP[sm] order can be converted to SNAP[sm] AOO.
7399	AOOOneAndDoneFlag	N	Only relevant on an SNAP[sm] AOO. Flag determines if SNAP[sm] AOO will participate in one or more SNAP[sm] Auctions. 'Y' = SNAP[sm] AOO will only participate in one SNAP[sm] Auction, then it will be canceled. 'N' = SNAP[sm] AOO will participate in every available SNAP[sm] Auction until either the order is cancelled by the sender, the order is executed in its entirety or the primary trading session ends and the remainder of the order is canceled. Absence of this field indicates SNAP[sm] AOO will participate in every SNAP[sm] Auction.
7400	CHXOrdType	N	s = SNAP[sm] Auction Order 9 = SNAP[sm] Auction Only Order (AOO) If CHXOrdType = s (SNAP[sm] Auction Order), OrdType must be 2 (Limit). May also be qualified with either tag 7397 (SNAP[sm] Minimum Execution Required) or tag 7398 (SNAP[sm] Convert to AOO) If CHXOrdType = 9 (AOO), OrdType must be 2 (Limit) or P (Peg). If specified, TimeInForce must be 0 = Day.

3.2 Order Cancel Request

This message is used to request the cancellation of all of the remaining quantity of an existing order. In order to partially cancel (reduce) an order, use the **Cancel/Replace Request** message.

FIX 4.0: After the CHX receives a **Order Cancel Request** message from the broker, the CHX will immediately acknowledge that cancel with an **Execution Report** message referencing the *ClOrdId* (**not *OrigClOrdId***) with *OrdStatus* = 0 (New).

FIX 4.1/4.2: After the CHX receives a **Order Cancel Request** message from the broker, the CHX will immediately acknowledge that cancel with an **Execution Report** message referencing the *ClOrdId* (**not *OrigClOrdId***) with *ExecType* and *OrdStatus* = 6 (Pending Cancel/Replace).

FIX 4.0: If the cancel request is successful, the CHX will send an **Execution Report** referencing the *OrigClOrdID* (**not *ClOrdID***) with *OrderStatus* = 4 (Cancelled).

FIX 4.1/4.2: If the requested cancel is successful, the CHX will send an **Execution Report** referencing the *ClOrdID* (**not *OrigClOrdID***) with *ExecType* and *OrderStatus* = 4 (Cancelled).

Please note that cross orders cannot be cancelled or cancelled/replaced electronically by order senders. Cross orders either execute or reject. If a processing problem occurs, order sending firms should contact Customer Service to resolve the issue.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = F*
41	OrigClOrdID	Y	Order ID of the order being cancelled.
11	ClOrdID	Y	Must be unique for the current day.
125	CxlType	Y	CHX accepts only: F = Full remaining quantity. **This field is only used in FIX 4.0 only.** **Field #125, CxlType is no longer a field in this message in FIX 4.1/4.2**
55	Symbol	Y	
54	Side	Y	
38	OrderQty	Y	Original *OrderQty*.
65	SymbolSfx	N	
60	TransactTime	Y	**For FIX 4.2**

3.3 Cancel/Replace Request

Do not use this message to cancel the remaining quantity of an outstanding order; use the **Order Cancel Request** message instead.

FIX 4.0: After the CHX receives a **Cancel/Replace Request** message from the broker, the CHX will immediately acknowledge that cancel/replace with an **Execution Report** message referencing the *OrigClOrdId* (**not *ClOrdId***) with *OrdStatus* = 6 (Pending Cancel/Replace).

FIX 4.1/4.2: After the CHX receives a **Cancel/Replace Request** message from the broker, the CHX will immediately acknowledge that cancel/replace with an "**Execution Report**" message referencing the *ClOrdId* (**not *OrigClOrdId***) with *ExecType* and *OrdStatus* = 6 (Pending Cancel/Replace).

FIX 4.0: If the request is successful, the CHX will send an **Execution Report** referencing the *ClOrdID* (**not *OrigClOrdID***) with *OrderStatus* = 0 (New) for fully open order or *OrderStatus* = 1 (Partially filled) for partially filled order. From that point on, the broker must reference the *replacement* order with the *ClOrdID*.

FIX 4.1/4.2: If the request is successful, the CHX will send an **Execution Report** referencing the *ClOrdID* (**not OrigClOrdID**) with *ExecType* = 5 (Replaced) and *OrderStatus* = 5 (Replaced) for fully open order or *OrderStatus* = 1 (Partially filled) for partially filled order. From that point on, the broker must reference the *replacement* order with the *ClOrdID*.

Please note that cross orders cannot be cancelled/replaced electronically by order senders. Cross orders either execute or reject. If a processing problem occurs, order sending firms should contact Customer Service to resolve the issue.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = G*
41	OrigClOrdID	Y	Order ID of the order being replaced.
11	ClOrdID	Y	Unique identifier of **replacement order** as assigned by institution. This field must at a minimum be unique for the current day. For multi-day, the firm must assure uniqueness of this field across days. Embedding a date with the *ClOrdID* would be one solution.
21	HandlInst	Y	Must match the original order. Otherwise it will get rejected.
55	Symbol	Y	Must match the original order.
54	Side	Y	Changeable but only: Buy <-> Buy Minus Sell <-> Sell Plus Sell Short Exempt -> Sell Short Sell Short <-> Sell
38	OrderQty	Y	Changeable but this quantity has to include any partial executions previously received on the original order(s).
111	MaxFloor	N	Changeable
7369	RefreshThreshold	N	The amount to refresh once the display quantity has been exhausted
40	OrdType	Y	Changeable.
63	SettlmntTyp	N	Changeable.
64	FultSettDate	N	Changeable.
18	ExecInst	N	Changeable, except cancel/replace to ExecInst = f.
65	SymbolSfx	N	Must match the original order.
44	Price	N	Changeable.
99	StopPx	N	Changeable.
59	TimeInForce	N	Changeable.
126	ExpireTime	N	Changeable.
7368	GFSSeconds	N	Populated when TimeInForce = GFS.
336	TradingSessionID	N	
439	ClearingFirm	N	Clearing firm account symbol that is going to clear the trade.
60	TransactTime	Y	**For FIX 4.2**
211	PegDiff	N	Changeable.
7400	CHXOrdType	N	Must match the original order.

3.4 Order Status Request

Upon receiving an **Order Status Request** message, the CHX will respond with an **Execution Report** with *ExecTransType* = 3 (Status).

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = H*

Tag	Field Name	Req'd	Comments
11	ClOrdID	Y	
55	Symbol	Y	
54	Side	Y	
37	OrderID	N	
65	SymbolSfx	N	

3.5 Execution Report

If an order is rejected, CHX will send an **Execution Report** message with *OrdStatus* = 8 (Rejected) with *OrdRejReason* OR *Text,* but not both.

If an order is canceled by the CHX (unsolicited cancel), the CHX will notify the broker by sending an **Execution Report** referencing *ClOrdID* of the canceled order with *OrdStatus* = 4 (Canceled).

If an order is cancel replaced by the CHX (unsolicited), the CHX will notify the broker by an **Execution Report** referencing *ClOrdID* of the canceled/replaced order with *OrdStatus* = 5 (Replaced) and *Text* describing the cancellation reason.

If a trade is busted, the CHX will send an **Execution Report** referencing the original order in *ExeRefID* with *ExecTransType* = 1 (Trade Cancel).

If a trade is corrected, the CHX will send an **Execution Report** referencing the original order in *ExeRefID* with *ExecTransType* = 2 (Trade Correction).

If an order is stopped (or guaranteed - UR STPD), the CHX will inform the firm with an **Execution Report** referencing *ClOrdID* of the stopped order with *OrdStatus* = 7 (Stopped) and *Text* showing the guaranteed price.

The CHX may send an **Execution Report** message with *OrdStatus* = 3 (Done for day), indicating there will be no more trades today for the order.

The CHX may send an **Execution Report** message with *OrdStatus* = C (Expired) after the market is closed, indicating the order has been expired.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = 8*
1	Account	N	Account specified by order sender when order was entered. Maximum length of 20 characters.
37	OrderID	Y	Unique identifier for order as assigned by CHX.
17	ExecID	Y	Unique identifier of execution message (not trade; CHX doesn't provide the trade ID.) as assigned by CHX. This field will always be "0" if *ExecTransType* = 3 (Status).
20	ExecTransType	Y	
39	OrdStatus	Y	The CHX supports the following status values: 0 = New 1 = Partially filled 2 = Filled 3 = Done for day 4 = Canceled 5 = Replaced 6 = Pending Cancel/Replace (renamed to Pending Cancel in **FIX 4.2**) 7 = Stopped 8 = Rejected C = Expired E = Pending Replace (**For FIX 4.2**)

Tag	Field Name	Req'd	Comments
55	Symbol	Y	
54	Side	Y	
38	OrderQty	Y	
32	LastShares	Y	Quantity of shares bought/sold; otherwise 0. With MTP, the number of shares that would have matched on an MTP triggered cancel. Firms must contact Customer Service to receive this information.
31	LastPx	Y	Price of *LastShares*. With MTP, the price at which LastShares would have matched on an MTP triggered cancel. Firms must contact Customer Service to receive this information.
198	SecondaryOrderID	N	With MTP, OrderID of the contra side that prevented match on an MTP triggered cancel. Firms must contact Customer Service to receive this information. **For FIX 4.1/4.2**
30	LastMkt	N	Market of execution for last fill. CHX expects ISO 10383 Market Identifier Code (MIC); however, this field is not validated. Please refer to the FIX 4.4 specification for more information about the MIC.
76	ExecBroker	N	This field will not be populated for Matching System executions; however, if populated by other destinations such as off-Exchange market makers, CHX will include that data as sent by the away market. As of December 2009, CHX will require that this field contain the number NSCC ID of the entity participating on the trade in the away market for orders initiate by CHX institutional brokers.
375	ContraBroker	N	Identifies contra broker. A four- character field identifying the CHX account ID for the contra-broker. This tag will be present on all executions that occur in the CHX matching system. If the ContraBroker has specified that orders are to remain anonymous, then this field will contain the value 'ANON'.
14	CumQty	Y	For all reports on cross type orders, the value will be set to 0 (zero). The *BuyCumQty* and *SellCumQty* fields will be used instead.
151	LeavesQty	Y	For all reports on cross type orders, the value will be set to 0 (zero)., The *BuyLeavesQty* and *SellLeavesQty* fields will be used instead. **For FIX 4.1/4.2**
6	AvgPx	Y	For all reports on cross type orders, this value will be set to 0 (zero).

Tag	Field Name	Req'd	Comments
150	ExecType	Y	The CHX supports the following status values: 0 = New 1 = Partially fill 2 = Fill 4 = Canceled 5 = Replace 6 = Pending Cancel/Replace (renamed to Pending Cancel in **FIX 4.2**) 8 = Rejected C = Expired D = Restated (ExecutionRpt sent unsolicited by the CHX, with *ExecRestatementReason* set, used for unsolicited change) (**For FIX 4.2)** E = Pending Replace (**For FIX 4.2)** **For FIX 4.1/4.2**
378	ExecRestatementReason	N	Code to identify reason for an ExecutionRpt message sent with *ExecType*=Restated or used when communicating an unsolicited cancel. **For FIX 4.2**
11	ClOrdID	N	Always populated.
41	OrigClOrdID	N	Conditionally populated for PendingCancel, Replaced, Canceled *ExecType* values. *ClOrdID* of the previous order (NOT the initial order of the day) when canceling or replacing and order. **For FIX 4.1/4.2**
65	SymbolSfx	N	
40	OrdType	N	Always populated.
44	Price	N	Populated only when *OrdStatus* = 5 (Replaced).
99	StopPx	N	Populated only when *OrdStatus* = 5 (Replaced).
111	MaxFloor	N	
7369	RefreshThreshold	N	
18	ExecInst	N	Populated only when *OrdStatus* = 5 (Replaced). For supported values, see **New Order**
7387	ISOType	N	
7388	TradeThroughExemptType	N	
59	TimeInForce	N	
126	ExpireTime	N	Populated when *TimeInForce* = GTD.
7368	GFSSeconds	N	Populated when TimeInForce = GFS. [Available in later releases.]
19	ExecRefID	N	Populated when *ExecTransType* = 1 (Cancel) or 2 (Correct).
103	OrdRejReason	N	Populated when *OrdStatus* = 8 (Rejected) and there is a matched code (rejected reason) in the FIX specification. If there is no matched code, CHX will populate *Text* instead.
60	TransactTime	N	
336	TradingSessionID	N	Indicates the trading session(s) the order is eligible to be traded in. If *ExecType* = 1 (Partially fill) or 2 (Filled), this will indicated the session the trade occurred. Absence of this field indicates Primary session (1).

Tag	Field Name	Req'd	Comments
851	LastLiquidityInd	N	Indicator to identify whether this fill was a result of a liquidity provider providing or liquidity taker taking the liquidity. Applicable only for trades (partial fill (1) or fill (2)) or trade cancels/corrections. Valid values: 1 - Added Liquidity 2 - Removed Liquidity 3 - Liquidity Routed Out 4 - Auction
58	Text	N	Used as follows: In the case of *OrdStatus* = 8 and there is no matched *OrdRejReason*, this field will describe why CHX rejected the order.
7395	WorkPx	N	If the order was inserted into book with a price which was adjusted to avoid locking/crossing the NBBO, the initial working price will be provided in this tag.
211	PegDiff	N	Must be expressed as the number of ticks for the given instrument. A SNAP[sm] AOO Market Peg buy order can be pegged to the offer with a positive or negative value; a positive value would make the order more competitive, a negative value would make the order less competitive. SNAP[sm] AOO Market Peg sell order can be pegged to the bid with a positive or negative value; a positive value would make the order less competitive, a negative value would make the order more competitive. SNAP[sm] AOO Primary Peg buy order can be pegged to the bid with a positive or negative value; a positive value would make the order more competitive while a negative value would make the order less competitive. SNAP[sm] AOO Primary Peg sell order can be pegged to the offer with a positive or negative value; a positive value would make the order less competitive while a negative value would make the order more competitive. The value must be in the range -9999 to 9999. Depending on the tick size of the instrument and the price of the order, this would translate to -0.0999 to 0.0999 below 1.00, -99.99 to 99.99 above 1.00 for an instrument with a tick size of 0.01, -999.90 to 999.90 for an instrument with a tick size of 0.10, etc. For more details, see "Section 5: FIX message examples".

Tag	Field Name	Req'd	Comments
7396	CancelOnSNAPAuctionFlag	N	Determines if order participates in SNAP^{sm} Auctions. 'Y' –When a SNAP^{sm} Auction is invoked, the order will be canceled, it will not participate in the SNAP^{sm} Auction. 'N' –When a SNAP^{sm} Auction is invoked, the order will not be canceled, it will participate in the SNAP^{sm} Auction. Note: If this tag is omitted, the CancelOnSNAPAuctionFlag will default to 'N'. Firms can contact Customer Service to set an alternative default value.
7397	SNAPMinExecRequiredFlag	N	Only relevant on a SNAP^{sm} order. Flag determines if the SNAP^{sm} order requires a minimum number of shares to be projected to execute in the SNAP^{sm} Auction before invoking the SNAP^{sm} Auction, otherwise if the minimum participation shares are not projected to execute during the SNAP^{sm} Auction, the SNAP^{sm} order will be canceled without invoking the SNAP^{sm} Auction. Note: Although SNAP^{sm} orders initiate the SNAP^{sm} Auction, there is no guarantee the SNAP^{sm} order will participate. 'Y = Minimum SNAP^{sm} threshold required. 'N' = Minimum SNAP^{sm} threshold not required. Absence of this field indicates the minimum SNAP threshold is not required.
7398	SNAPConvertToAOOFlag	N	Only relevant on a SNAP^{sm} order. 'Y' = If this SNAP^{sm} order received after SNAP^{sm} Auction already invoked by another SNAP^{sm} order, this SNAP^{sm} order will be converted to SNAP^{sm} AOO One and Done, as long as it meets the SNAP^{sm} AOO requirements. 'N' = If this SNAP order received after SNAP^{sm} Auction already invoked by another SNAP^{sm} order, this SNAP^{sm} order will be canceled. Absence of this field indicates SNAP^{sm} order can be converted to SNAP^{sm} AOO.

Tag	Field Name	Req'd	Comments
7399	AOOOneAndDoneFlag	N	Only relevant on an SNAP^{sm} AOO.
			Flag determines if SNAP^{sm} AOO will participate in one or more SNAP^{sm} Auctions.
			'Y' = SNAP^{sm} AOO will only participate in one SNAP^{sm} Auction, then it will be canceled.
			'N' = SNAP^{sm} AOO will participate in every available SNAP^{sm} Auction until either the order is cancelled by the sender, the order is executed in its entirety or the primary trading session ends and the remainder of the order is canceled.
			Absence of this field indicates SNAP^{sm} AOO will participate in every SNAP^{sm} Auction.
7400	CHXOrdType	N	s = SNAP^{sm} Auction Order 9 = SNAP^{sm} Auction Only Order (AOO)
			If CHXOrdType = s (SNAP^{sm} Auction Order), OrdType must be 2 (Limit). May also be qualified with either tag 7397 (SNAP^{sm} Minimum Execution Required) or tag 7398 (SNAP^{sm} Convert to AOO)
			If CHXOrdType = 9 (AOO), OrdType must be 2 (Limit) or P (Peg).
			If specified, TimeInForce must be 0 = Day.

3.6 Order Cancel Reject

If the CHX is unable to honor an **Order Cancel Request** or **Order Cancel/Replace Request** message submitted by the firm, the CHX will send an **Order Cancel Reject** message back to the sender.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = 9*
11	ClOrdID	Y	Unique order ID of **Order Cancel Request** or **Order Cancel/Replace Request**.
37	OrderID	Y	Can be "" (no branch code and sequence number), indicating that CHX assigned no order ID because it was rejected.
39	OrdStatus	Y	**For FIX 4.1/4.2**
41	OrigClOrdId	Y	**For FIX 4.1/4.2**
102	CxlRejReason	N	Populated, if there is a matched code (reject reason) in the FIX spec. If not, Text is used instead.
58	Text	N	Used as follows: "Invalid Price" or "Invalid StopPx".
60	TransactTime	N	**For FIX 4.2**
434	CxlRejResponseTo	Y	Identifies the type of request that a Cancel Reject is in response to. Valid values: 1 - Order Cancel Request 2 - Order Cancel/Replace Request **For FIX 4.2**

3.7 Don't Know Trade (DK)

The **Don't Know Trade (DK)** message notifies a trading partner that an electronically received execution has been rejected. This message can be thought of as an execution reject message.

Tag	Field Name	Req'd	CHX Req'd	Comments
	Standard Header	Y	Y	*MsgType = Q*
127	DKReason	Y		
55	Symbol	Y		
54	Side	Y		
38	OrderQty	Y		
32	LastShares	Y		
31	LastPx	Y		
37	OrderID	N		Required **for FIX 4.2**
17	ExecID	N		Required **for FIX 4.2**
65	SymbolSfx	N		Not FIX standard
58	Text	N		

4. Outbound Order (from CHX) Messages

The specifications in this section are intended for order-senders directing orders through CHX's network to destinations other than CHX such as CHX supported order routing vendors.

4.1 New Order

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = D*
11	ClOrdID	Y	This field must at a minimum be unique for the current day. For multi-day, the CHX will assure uniqueness of this field across days.
526	SecondaryClOrdID	N	The ClOrdID of the order the CHX received from the order sending firm.
21	HandlInst	Y	1 = Automated execution order, private, no Broker intervention. 2 = Automated execution order, public, Broker intervention O.K. 3 = Manual Order, best execution.
55	Symbol	Y	
54	Side	Y	1 = Buy 2 = Sell 3 = Buy minus 4 = Sell plus 5 = Sell short 6 = Sell short exempt
38	OrderQty	Y	Maximum allowable is 99,999,999
111	MaxFloor	N	Maximum number of shares within an order to be displayed at any given time.
7369	RefreshThreshold	N	User-defined field.

Tag	Field Name	Req'd	Comments
40	OrdType	Y	1 = Market 2 = Limit 3 = Stop 4 = Stop limit 5 = Market on close 6 = With or without 7 = Limit or better B = Limit on close
63	SettlmntTyp	N	0 = Regular 1 = Cash 2 = Next Day 6 = Future 8 = Sellers Option
64	FutSettDate	N	Required when *SettlmntTyp* = 6 (Future) or 8 (Sellers Option).
18	ExecInst	N	1 = Not held 5 = Held E = Do not increase - DNI F = Do not reduce - DNR G = All or none – AON K = Cancel on Trading Halt X = Trade Along f = Inter-market Sweep Order (ISO)
65	SymbolSfx	N	
44	Price	N	
99	StopPx	N	
47	Rule80A (aka OrderCapacity)	N	A Participant must definitively indicate its capacity on every order and may do so using the following means: Proprietary: Tag 47="P" Riskless Principal: Tag 47 ="R" Agency: Tag 47="A" OR Tag 47 omitted
59	TimeInForce	N	0 = Day 1 = Good Till Cancel 2 = At the Opening 3 = Immediate or Cancel 4 = Fill or Kill 5 = Good Till Crossing 6 = Good Till Date
126	ExpireTime	N	Required if *TimeInForce* = GTD.
1	Account	N	In the case of Side = 8 (Cross), 9 (Cross Short) or A (Cross Short Exempt) it contains the IDB.
58	Text	N	In the case of Side = 8 (Cross), 9 (Cross Short) or A (Cross Short Exempt) it contains the Options ID.
109	ClientID	N	In the case of Side = 8 (Cross), 9 (Cross Short) or A (Cross Short Exempt) it contains the Order Originator.

4.2 Order Cancel Request

This message is used to request the cancellation of all of the remaining quantity of an existing order. In order to partially cancel (reduce) an order, the CHX will use the **Cancel/Replace Request** message.

FIX 4.0: After the firm receives a **Order Cancel Request** message from the CHX, the CHX expects to receive an **Execution Report** message referencing the *ClOrdId* (**not *OrigClOrdId***) with *OrdStatus* = 0 (New).

FIX 4.1: After the firm receives a **Order Cancel Request** message from the CHX, the CHX expects to receive an **Execution Report** message referencing the *ClOrdId* (**not *OrigClOrdId***) with *ExecType* and *OrdStatus* = 6 (Pending Cancel/Replace).

FIX 4.0: If the cancel request is successful, the CHX expects to receive an **Execution Report** referencing the *OrigClOrdID* (**not *ClOrdID***) with *OrderStatus* = 4 (Cancelled).

FIX 4.1: If the requested cancel is successful, the CHX expects to receive an **Execution Report** referencing the *ClOrdID* (**not *OrigClOrdID***) with *ExecType* and *OrderStatus* = 4 (Cancelled).

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = F*
41	OrigClOrdID	Y	Order ID of the order being cancelled.
11	ClOrdID	Y	Must be unique for the current day.
526	SecondaryClOrdID	N	The ClOrdID of the order cancel request the CHX received from the order sending firm.
125	CxlType	Y	F = Full remaining quantity. **This field is only used in FIX 4.0 only.** **Field #125, CxlType is no longer a field in this message in FIX 4.1**
55	Symbol	Y	
54	Side	Y	
38	OrderQty	Y	Original *OrderQty*.
65	SymbolSfx	N	

4.3 Cancel/Replace Request

The CHX will never send this message to cancel the remaining quantity of an outstanding order. The CHX will use the **Order Cancel Request** message instead.

FIX 4.0: After the CHX sends a **Cancel/Replace Request** message to the firm, the CHX expects to receive an **Execution Report** message referencing the *OrigClOrdId* (**not *ClOrdId***) with *OrdStatus* = 6 (Pending Cancel/Replace).

FIX 4.1: After the CHX sends a **Cancel/Replace Request** message to the firm, the CHX expects to receive an "**Execution Report"** message referencing the *ClOrdId* (**not *OrigClOrdId***) with *ExecType* and *OrdStatus* = 6 (Pending Cancel/Replace).

FIX 4.0: If the request is successful, the CHX expects to receive an **Execution Report** referencing the *ClOrdID* (**not *OrigClOrdID***) with *OrderStatus* = 0 (New) for fully open order or *OrderStatus* = 1 (Partially filled) for partially filled order.

FIX 4.1: If the request is successful, the CHX expects to receive an **Execution Report** referencing the *ClOrdID* (**not *OrigClOrdID***) with *ExecType* = 5 (Replaced) and *OrderStatus* = 5 (Replaced) for fully open order or *OrderStatus* = 1 (Partially filled) for partially filled order.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = G*
41	OrigClOrdID	Y	Order ID of the order being replaced.
11	ClOrdID	Y	Unique identifier of ***replacement order*** as assigned by CHX. This field must at a minimum be unique for the current day.
526	SecondaryClOrdID	N	The ClOrdID of the cancel/replace request the CHX received from the order sending firm.

Tag	Field Name	Req'd	Comments
21	HandlInst	Y	Must match the original order. Otherwise it will get rejected.
55	Symbol	Y	Must match the original order.
54	Side	Y	Changeable but only: Buy <-> Buy Minus Sell <-> Sell Plus Sell Short Exempt -> Sell Short Sell Short <-> Sell
38	OrderQty	Y	Changeable but this quantity has to include any partial executions previously received on the original order(s).
111	MaxFloor	N	Changeable
7369	RefreshThreshold	N	The amount to refresh once the display quantity has been exhausted
40	OrdType	Y	Changeable.
63	SettlmntTyp	N	Changeable.
64	FultSettDate	N	Changeable.
18	ExecInst	N	Changeable.
65	SymbolSfx	N	Must match the original order.
44	Price	N	Changeable.
99	StopPx	N	Changeable.
59	TimeInForce	N	Changeable.
126	ExpireTime	N	Changeable.

4.4 Order Status Request

The CHX can send the **Order Status Request** message to the firm and expects to receive the **Execution** Report message with *ExecTransType* = 3 (Status).

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = H*
11	ClOrdID	Y	
55	Symbol	Y	
54	Side	Y	
37	OrderID	N	
65	SymbolSfx	N	

4.5 Execution Report

The CHX expects to receive the **Execution Report** message as follows:

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = 8*
37	OrderID	Y	Unique identifier for order as assigned by the firm.
17	ExecID	Y	Unique identifier of execution message (not trade) as assigned by the firm. This field will always be "0" if *ExecTransType* = 3 (Status).
20	ExecTransType	Y	

Tag	Field Name	Req'd	Comments
39	OrdStatus	Y	0 = New 1 = Partially filled 2 = Filled 3 = Done for day 4 = Canceled 5 = Replaced 7 = Stopped 8 = Rejected C = Expired
55	Symbol	Y	
54	Side	Y	
38	OrderQty	Y	
32	LastShares	Y	Quantity of shares bought/sold; otherwise 0.
31	LastPx	Y	Price of *LastShares*.
30	LastMkt	N	Market of execution for last fill. CHX expects ISO 10383 Market Identifier Code (MIC); however, this field is not validated. Please refer to the FIX 4.4 specification for more information about the MIC.
76	ExecBroker	Y	This field will not be populated for Matching System executions; however, if populated by other destinations, CHX will include that data as sent by the away market.
14	CumQty	Y	
6	AvgPx	Y	
150	ExecType	Y	**For FIX 4.1**
151	LeavesQty	Y	**For FIX 4.1**
11	ClOrdID	N	Always populated.
41	OrigClOrdID	N	Conditionally populated for PendingCancel, Replaced, Canceled *ExecType* values. *ClOrdID* of the previous order (NOT the initial order of the day) when canceling or replacing and order. **For FIX 4.1**.
65	SymbolSfx	N	
40	OrdType	N	Always populated.
44	Price	N	Populated only when *OrdStatus* = 5 (Replaced).
99	StopPx	N	Populated only when *OrdStatus* = 5 (Replaced).
111	MaxFloor	N	
7369	RefreshThreshold	N	
18	ExecInst	N	Populated only when *OrdStatus* = 5 (Replaced). For supported values, see **New Order**
59	TimeInForce	N	0 = Day 1 = Good Till Cancel 2 = At the Opening 3 = Immediate or Cancel 4 = Fill or Kill 5 = Good Till Crossing 6 = Good Till Date
126	ExpireTime	N	Populated when *TimeInForce* = GTD.
7368	GFSSeconds	N	Populated when TimeInForce = GFS.
19	ExecRefID	N	Populated when *ExecTransType* = 1 (Cancel) or 2 (Correct).

Tag	Field Name	Req'd	Comments
103	OrdRejReason	N	Populated when *OrdStatus* = 8 (Rejected) and there is a matched code (rejected reason) in the FIX specification. If there is no matched code, CHX expects *Text* instead.
60	TransactTime	N	
58	Text	N	Used as follows: In the case of *ExecTransType* = 2 (Trade correction), it shows the corrected price: "NOT *price*". In the case of *OrdStatus* = 5 (Replaced) and this change was unsolicited and caused by Ex-dividend, it shows "EX-DIVD ORDER CHANGE: *Ex-divd information*". In the case of *OrdStatus* = 5 (Replaced) and this change was unsolicited and not caused by Ex-dividend, it shows "ORDER CHANGE". In the case of *OrdStatus* = 8 and there is no matched *OrdRejReason*, this field will describe why the firm rejected the order.
7392	ExecClearingFirm	N	Populated when the order routing vendor has made arrangements for away market executions to be included in the CHX RIO Clearing. ExecClearingFirm will be used as the contra party on the Clearing transaction.

4.6 Order Cancel Reject

If the firm is unable to honor an **Order Cancel Request** or **Order Cancel/Replace Request** message submitted by the CHX, the firm will send an **Order Cancel Reject** message back to the CHX.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	*MsgType = 9*
11	ClOrdID	Y	Unique order ID of **Order Cancel Request** or **Order Cancel/Replace Request**.
37	OrderID	Y	
39	OrdStatus	Y	**For FIX 4.1**
41	OrigClOrdId	Y	**For FIX 4.1**
102	CxlRejReason	N	Populated, if there is a matched code (reject reason) in the FIX spec. If not, Text is used instead.
58	Text	N	

4.7 Don't Know Trade (DK)

The **Don't Know Trade (DK)** message notifies a trading partner that an electronically received execution has been rejected. This message can be thought of as an execution reject message.

Tag	Field Name	Req'd	CHX Req'd	Comments
	Standard Header	Y	Y	*MsgType = Q*

Tag	Field Name	Req'd	CHX Req'd	Comments
127	DKReason	Y		
55	Symbol	Y		
54	Side	Y		
38	OrderQty	Y		
32	LastShares	Y		
31	LastPx	Y		
37	OrderID	N		
17	ExecID	N		
65	SymbolSfx	N		Not FIX standard
58	Text	N		

5. User- defined Fields

Tag	Field Name	Req'd	Description
7365	BuyerFirm	N	Required if *Side* = 8 (Cross) or 9 (Cross Short) - 4 alphanumeric.
7366	SellerFirm	N	Required if *Side* = 8 (Cross) or 9 (Cross Short) - 4 alphanumeric.
7368	GFSSeconds	N	Populated when TimeInForce = GFS.
7369	RefreshThreshold	N	User-defined field. For a reserve order, the field acts as a low water mark for the current display quantity. That is, when the current displayed quantity becomes less than or equal to this field, it should be reset to the original display quantity. Absence of this field means *RefreshThreshold* = *MaxFloor*.
7374	RoutingInst	N	User-defined field. Routing instruction. Absence of this field is interpreted as Normal (0) 0 = Normal – If the order cannot be routed to the destination the order is eligible for routing. 1 = 'Do not route' - If the order cannot be sent to the specified destination, reject the order back to the sender.
7387	ISOType	N	ISO type. Applicable for ISO orders (Tag 18 *ExecInst* = *f*). Absence of this field is interpreted as 0 (Price-penetrating ISO). 0 = Price-penetrating ISO (default) 1 = BBO ISO (may rest in book if TimeInForce not '3' (IOC))
7388	TradeThroughExemptType	N	Indicates trade-through exemption type. Applicable for cross orders that have no ISO execution type (i.e., Tag 18 *ExecInst* <> *f*) and Tag 54 *Side = 8 or 9* (Cross or Cross)). 1 = Benchmark 2 = Qualified Contingent Trade

Tag	Field Name	Req'd	Description
7391	AnonymityFlag	N	Flag to determine whether the order sender is to remain anonymous. N = Order sender will NOT be anonymous and will be displayed on the CHX Book Feed, as ContraBroker on execution reports and in clearing transactions. Y = Order sender will be anonymous in the CHX Book Feed, as ContraBroker on executions and within clearing transactions. Note: If this tag is omitted, the order will not be anonymous. Instead of using this tag, the firm can request that all orders to the CHX remain anonymous by contacting Customer Service.
7393	MERoutingInst	N	Instructs the ME to either route the order to satisfy Reg. NMS Rule 610 & 611 requirements or reject the order back to the sender. 0 – External routing allowed. 1 – External routing not allowed. ME only order.
7394	CHXOnly	N	Indicates CHX Only order type. N = Do not process as CHX Only order. S = CHX Only order. Price will slide to avoid locking/crossing NBBO. L = CHX Only order if price locks NBBO; reject order if price crosses NBBO. Note: If this tag is omitted, the CHX Only order type will default to S (CHX Only) unless the firm has contacted Customer Service to set an alternative default value.
7395	WorkPx	N	If the order was inserted into book with a price which was adjusted to avoid locking/crossing the NBBO, the working price will be provided in this tag.
7396	CancelOnSNAPAuctionFlag	N	Determines if order participates in SNAP^{sm} Auctions. 'Y' –When a SNAP^{sm} Auction is invoked, the order will be canceled, it will not participate in the SNAP^{sm} Auction. 'N' –When a SNAP^{sm} Auction is invoked, the order will not be canceled, it will participate in the SNAP^{sm} Auction. Note: If this tag is omitted, the CancelOnSNAPAuctionFlag will default to 'N'. Firms can contact Customer Service to set an alternative default value.

Tag	Field Name	Req'd	Description
7397	SNAPMinExecRequiredFlag	N	Only relevant on a SNAP^{sm} order. Flag determines if the SNAP^{sm} order requires a minimum number of shares to be projected to execute in the SNAP^{sm} Auction before invoking the SNAP^{sm} Auction, otherwise if the minimum participation shares are not projected to execute during the SNAP^{sm} Auction, the SNAP^{sm} order will be canceled without invoking the SNAP^{sm} Auction. Note: Although SNAP^{sm} orders initiate the SNAP^{sm} Auction, there is no guarantee the SNAP^{sm} order will participate. 'Y = Minimum SNAP^{sm} threshold required. 'N' = Minimum SNAP^{sm} threshold not required. Absence of this field indicates the minimum SNAP threshold is not required.
7398	SNAPConvertToAOOFlag	N	Only relevant on a SNAP^{sm} order. 'Y' = If this SNAP^{sm} order received after SNAP^{sm} Auction already invoked by another SNAP^{sm} order, this SNAP^{sm} order will be converted to SNAP^{sm} AOO, as long as it meets the SNAP^{sm} AOO requirements. 'N' = If this SNAP order received after SNAP^{sm} Auction already invoked by another SNAP^{sm} order, this SNAP^{sm} order will be canceled. Absence of this field indicates SNAP^{sm} order can be converted to SNAP^{sm} AOO.
7399	AOOOneAndDoneFlag	N	Only relevant on an SNAP^{sm} AOO. Flag determines if SNAP^{sm} AOO will participate in one or more SNAP^{sm} Auctions. 'Y' = SNAP^{sm} AOO will only participate in one SNAP^{sm} Auction, then it will be canceled. 'N' = SNAP^{sm} AOO will participate in every available SNAP^{sm} Auction until either the order is cancelled by the sender, the order is executed in its entirety or the primary trading session ends and the remainder of the order is canceled. Absence of this field indicates SNAP^{sm} AOO will participate in every SNAP^{sm} Auction.
7400	CHXOrdType	N	s = SNAP^{sm} Auction Order 9 = SNAP^{sm} Auction Only Order (AOO) If CHXOrdType = s (SNAP^{sm} Auction Order), OrdType must be 2 (Limit). May also be qualified with either tag 7397 (SNAP^{sm} Minimum Execution Required) or tag 7398 (SNAP^{sm} Convert to AOO) If CHXOrdType = 9 (AOO), OrdType must be 2 (Limit) or P (Peg). If specified, TimeInForce must be 0 = Day.

Tag	Field Name	Req'd	Description
7928	MatchTradePrevention	N	Used to prevent the order from trading against other orders from the same trading group. 2 characters (not space separated): 1st character – MTP Action: I = No MTP Action (Inactivate the trading account default MTP action, if any) N = Cancel Newest (or incoming order) O = Cancel Oldest (or resting order) B = Cancel Both 2nd character – MTP Sub Level (optional): Member specified alphanumeric value 0-9, A-Z, or a-z. When MTP is triggered (preventing a match), the MTP Action (1st character) of the inbound order will always be honored (the MTP Action of the resting order is irrelevant). If specified on the incoming order, the MTP Sub Level (2nd character) of both orders must match to prevent a trade. Absence of this field indicates No MTP Action by default. However, Firms can contact Customer Service to set an alternative default value.

6. FIX Message Examples

Off exchange market maker, Institutional Broker and order routing vendor *DeliverToCompID* symbols can be obtained from CHX. The below symbols are samples for illustrative purposes only and are not necessarily valid.

Please note that some common fields in the example messages below can be omitted.

6.1 Orders without and with Routing Instructions

6.1.1 Order without Routing Information

The order has no routing instructions. The CHX will route the order based on the order routing instructions established with the CHX by the order sending firm using CHX's order default routing. For more information on default routing, see *Routing User Guide.*

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00

6.1.2 Order Specifying Routing to the Matching System (ECHX)

The *DeliverToCompID* field specifies routing to the CHX Matching System. If the order is rejected by the specified destination then the order is returned to the sender. For more information see *Routing User Guide*.

Tag	Field Name	Value
128	DeliverToCompID	ECHX
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00

6.1.3 Order Specifying Routing to Vendor 'VEND'

Tag	Field Name	Value
128	DeliverToCompID	VEND
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00

6.1.4 Order Specifying Routing to Off Exchange Market Maker 'MMXY'

Tag	Field Name	Value
128	DeliverToCompID	MMXY
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00

6.2 Correspondent Order

Order senders have the ability to send correspondent orders to the CHX, which will clear using the specified symbol as shown in the example below.

Tag	Field Name	Value
439	ClearingFirm	CLFM
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00

6.3 Cross Orders

6.3.1 Normal Cross Order

Tag	Field Name	Value
11	ClOrdID	CROSS-ID-1
54	Side	8 (Cross)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
7365	BuyerFirm	ABCD
7366	SellerFirm	WXYZ

6.3.2 Midpoint Cross Order

Tag	Field Name	Value
54	Side	8 (Cross)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	Q (Cross at Midpoint)
7365	BuyerFirm	ABCD
7366	SellerFirm	WXYZ

6.4 Display Orders

6.4.1 Reserve Order with RefreshThreshold

The following example shows a 20000 share order with a display size of 2000 and a refresh value of 500. When the order is entered into the book, only 2000 shares will display in the CHX quote. With each partial execution of the order, the display amount will be decreased by the execution amount. Once the display volume drops to 500 or less, the display volume will be refreshed to 2000.

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	20000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
111	MaxFloor	2000
7369	RefreshThreshold	500

6.4.2 Reserve Order without Refresh Threshold

The following example show a 20000 share order with a display size of 2000 with no refresh value specified. This order will behave the same as the previous example, with the exception that the display volume will not be refreshed until the display volume reaches 2000 (MaxFloor).

Tag	Field Name	Value
54	Side	1 (Buy)

Tag	Field Name	Value
38	OrderQty	20000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
111	MaxFloor	2000

6.4.3 Do not Display Order

The display volume is specified as zero (0).

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	20000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
111	MaxFloor	0

6.5 Reg NMS Orders

6.5.1 Price-Penetrating ISO

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
18	ExecInst	f (ISO)

6.5.2 BBO ISO

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
18	ExecInst	f (ISO)
7387	ISOType	1 (BBO ISO)
59	TimeInForce	3 (IOC)

6.5.3 ISO Cross

Tag	Field Name	Value
11	ClOrdID	CROSS-ID-1

Tag	Field Name	Value
54	Side	8 (Cross)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
7365	BuyerFirm	ABCD
7366	SellerFirm	WXYZ
18	ExecInst	f (ISO)

6.5.4 Benchmark

Tag	Field Name	Value
11	ClOrdID	CROSS-ID-1
54	Side	8 (Cross)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
7365	BuyerFirm	ABCD
7366	SellerFirm	WXYZ
7388	TradeThroughExemptType	1 (Benchmark)

6.5.5 Qualified Contingent Trade

Tag	Field Name	Value
11	ClOrdID	CROSS-ID-1
54	Side	8 (Cross)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
7365	BuyerFirm	ABCD
7366	SellerFirm	WXYZ
7388	TradeThroughExemptType	2 (Qualified Contingent Trade)

6.6 SNAP^{sm} Auction Orders

6.6.1 Buy Order – Cancel on SNAP^{sm} Auction

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00

Tag	Field Name	Value
7396	CancelOnSNAPAuctionFlag	Y (Cancel on SNAP^{sm} Auction)

6.6.2 SNAP^{sm} – Do Not Convert to SNAP^{sm} AOO

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	100000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
7398	SNAPConvertToAOO Flag	N (Do Not Convert to SNAP^{sm} AOO)
7400	CHXOrdType	s (SNAP^{sm} order)

6.6.3 SNAP^{sm} – Minimum Threshold Required

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	100000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
7397	SNAPMinExecRequiredFlag	Y (Minimum participation threshold required)
7400	CHXOrdType	s (SNAP^{sm} order)

6.6.4 SNAP^{sm} AOO – One and Done

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	2 (Limit)
44	Price	80.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
7399	AOOOneAndDoneFlag	Y (Only participate in one SNAP Auction)
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

6.6.5 SNAP^{sm} AOO – Buy Market Peg – Limit - Positive PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
44	Price	80.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	P (Market Peg)

Tag	Field Name	Value
211	PegDiff	2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
79.95 – 79.97, this order will be priced at 79.99   (79.97 + 2 ticks = 79.99)
80.00 – 80.02, this order will be priced at 80.00   (80.02 + 2 ticks = 80.04), default to 80.00 limit
80.04 – 80.06, this order will be priced at 80.00   (80.06 + 2 ticks = 80.08), default to 80.00 limit

6.6.6 SNAP^{sm} AOO – Buy Market Peg – Limit - Positive PegDiff – ADGE tick size is .01

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	ADGE
40	OrdType	P (Peg)
44	Price	.9999
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	P (Market Peg)
211	PegDiff	4
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
.9990 - .9995 this order will be priced at .9999   (.9995 + 4 ticks = .9999)
.9995 – .9997, this order will be priced at .9999   (.9997 + 4 ticks = 1.01), default to .9999 limit
1.00 – 1.01, this order will be priced at .9999   (1.01 + 4 ticks = 1.05), default to .9999 limit

6.6.7 SNAP^{sm} AOO – Buy Market Peg – Limit - Negative PegDiff – ADGE tick size is .01

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	ADGE
40	OrdType	P (Peg)
44	Price	1.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	P (Market Peg)
211	PegDiff	-4
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
.9990 - .9995 this order will be priced at .9991   (.9995 – 4 ticks = .9991)
.9995 – .9997, this order will be priced at .9993   (.9997 – 4 ticks = .9993)
1.00 – 1.01, this order will be priced at .9997   (1.01 – 4 ticks = .9997)

6.6.8 SNAP^sm AOO – Buy Market Peg – Limit - Positive PegDiff – BRK.A tick size is .10

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	BRK.A
40	OrdType	P (Peg)
44	Price	219,820.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	P (Market Peg)
211	PegDiff	105
7400	CHXOrdType	9 (SNAP^sm Auction Only Order)

If the NBBO used to price the SNAP^sm auction is:

219,580.30 – 219,720.00,
this order will be priced at 219,730.50 (219,720.00 + 105 ticks = 219,730.50)

219,650.50 – 219,819.20,
this order will be priced at 219,820.00 (219,819.20 + 105 ticks = 219,829.70), default to 219,820.00 limit

220,590.30 – 220,820.60,
this order will be priced at 219,820.00 (219,820.60 + 105 ticks = 220,831.10), default to 219,820.00 limit

6.6.9 SNAP^sm AOO – Sell Market Peg – No Limit - Positive PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	2 (Sell)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	P (Market Peg)
211	PegDiff	2
7400	CHXOrdType	9 (SNAP^sm Auction Only Order)

If the NBBO used to price the SNAP^sm auction is:
79.96 – 79.98, this order will be priced at 79.98   (79.96 + 2 ticks = 79.98)
80.00 – 80.02, this order will be priced at 80.02   (80.00 + 2 ticks = 80.02)
80.04 – 80.06, this order will be priced at 80.06   (80.04 + 2 ticks = 80.06)

6.6.10 SNAP^sm AOO – Buy Market Peg – No Limit - Negative PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
59	TimeInForce	If specified, 0 = Day is only allowable value.

Tag	Field Name	Value
18	ExecInst	P (Market Peg)
211	PegDiff	-2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
  79.96 – 79.98, this order will be priced at 79.96   (79.98 - 2 ticks = 79.96)
  80.00 – 80.02, this order will be priced at 80.00   (80.02 – 2 ticks = 80.00)
  80.04 – 80.06, this order will be priced at 80.04   (80.06 – 2 ticks = 80.04)

6.6.11 SNAP^{sm} AOO – Sell Market Peg – Limit - Negative PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	2 (Sell)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
44	Price	80.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	P (Market Peg)
211	PegDiff	-2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
  79.96 – 79.98, this order will be priced at 80.00   (79.96 – 2 ticks = 79.94), default to 80.00 limit
  80.00 – 80.02, this order will be priced at 80.00   (80.00 – 2 ticks = 79.98), default to 80.00 limit
  80.04 – 80.06, this order will be priced at 80.02   (80.04 – 2 ticks = 80.02)

6.6.12 SNAP^{sm} AOO – Buy Primary Peg – No Limit - Positive PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	R (Primary Peg)
211	PegDiff	2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
  79.96 – 79.98, this order will be priced at 79.98   (79.96 + 2 ticks = 79.98)
  80.00 – 80.02, this order will be priced at 80.02   (80.00 + 2 ticks = 80.02)
  80.04 – 80.06, this order will be priced at 80.06   (80.04 + 2 ticks = 80.06)

6.6.13 SNAP^{sm} AOO – Sell Primary Peg – Limit - Positive PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	2 (Sell)

Tag	Field Name	Value
38	OrderQty	1000
55	Symbol	IBM
40	OrdType	P (Peg)
44	Price	80.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	R (Primary Peg)
211	PegDiff	2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
  79.95 – 79.97, this order will be priced at 80.00   (79.97 + 2 ticks = 79.99), default to 80.00 limit
  80.00 – 80.02, this order will be priced at 80.04   (80.02 + 2 ticks = 80.04)
  80.04 – 80.06, this order will be priced at 80.08   (80.06 + 2 ticks = 80.08)

6.6.14 SNAP^{sm} AOO – Buy Primary Peg – Limit - Negative PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
44	Price	80.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	R (Primary Peg)
211	PegDiff	-2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
  79.96 – 79.98, this order will be priced at 79.94   (79.96 – 2 ticks = 79.94)
  80.00 – 80.02, this order will be priced at 79.98   (80.00 – 2 ticks = 79.98)
  80.04 – 80.06, this order will be priced at 80.00   (80.04 – 2 ticks = 80.02), default to 80.00 limit

6.6.15 SNAP^{sm} AOO – Sell Primary Peg – No Limit - Negative PegDiff – IBM tick size is .01

Tag	Field Name	Value
54	Side	2 (Sell)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	R (Primary Peg)
211	PegDiff	-2
7400	CHXOrdType	9 (SNAP^{sm} Auction Only Order)

If the NBBO used to price the SNAP^{sm} auction is:
  79.96 – 79.98, this order will be priced at 79.96   (79.98 – 2 ticks = 79.96)
  80.00 – 80.02, this order will be priced at 80.00   (80.02 – 2 ticks = 80.00)
  80.04 – 80.06, this order will be priced at 80.04   (80.06 – 2 ticks = 80.04)

6.6.16 SNAP℠ AOO – Buy Midpoint Peg - Limit

Tag	Field Name	Value
54	Side	1 (Buy)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
44	Price	80.00
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	M (Midpoint Peg)
7400	CHXOrdType	9 (SNAP℠ Auction Only Order)

If the NBBO used to price the SNAP℠ auction is:
  79.96 – 79.98, this order will be priced at 79.97   (79.96 + 79.98)/2 = 79.97
  79.96 – 79.97, this order will be priced at 79.965   (79.96 + 79.97)/2 = 79.965
  80.00 – 80.01, this order will be priced at 80.00   (80.00 + 80.01)/2 = 80.005, default to 80.00 limit

6.6.17 SNAP℠ AOO – Sell Midpoint Peg – No Limit

Tag	Field Name	Value
54	Side	2 (Sell)
38	OrderQty	10000
55	Symbol	IBM
40	OrdType	P (Peg)
59	TimeInForce	If specified, 0 = Day is only allowable value.
18	ExecInst	M (Midpoint Peg)
7400	CHXOrdType	9 (SNAP℠ Auction Only Order)

If the NBBO used to price the SNAP℠ auction is:
  79.96 – 79.98, this order will be priced at 79.97   (79.96 + 79.98)/2 = 79.97
  79.96 – 79.97, this order will be priced at 79.965   (79.96 + 79.97)/2 = 79.965
  80.00 – 80.01, this order will be priced at 80.005   (80.00 + 80.01)/2 = 80.005

7. Valid values and fields for CHX Matching System

The CHX Matching System will accept a subset of the valid values and fields accepted by the CHX FIX engine. Below outlines which values are acceptable to the CHX Matching System. The list only includes those fields that will be validated differently than the CHX FIX Engine.

7.1 New Order

Tag	Field Name	Req'd	Comments
21	HandlInst	Y	Field is ignored

Tag	Field Name	Req'd	Comments
54	Side	Y	1 = Buy 2 = Sell 5 = Sell short 6 = Sell short exempt 8 = Cross 9 = Cross short A = Cross short exempt
40	OrdType	Y	1 = Market 2 = Limit 7 = Limit or better The following are user-defined values: Q = Midpoint Cross Cross orders must have the *BuyerFirm* and *SellerFirm* specified. Any Midpoint Cross (Q) order must not have the *Price* (#44). Otherwise, it will be rejected.
99	StopPx	N	Order rejected if this is included
59	TimeInForce	N	0 = Day 3 = Immediate or Cancel 4 = Fill or Kill 6 = Good Till Date [Must have expire date of today] A = Good For Seconds (GFS; # of seconds) [Available in later releases.]
44	Price	N	Valid values are 0.0001 to 9,999,999.99 Orders >= to 1.00 must be in 0.01 increments, Orders < 1.00 can be in 0.0001 increments. Orders in non-Nasdaq-listed securities not accepted in increments smaller than $.01 until NMS Linkage enabled to permit routing of sub penny orders. Crosses at any price can be in 0.000001 increments
63	SettlmntTyp	N	0 = Regular 1 = Cash 2 = Next Day (T+1) 3 = T+2 4 = T+3 5 = T+4 6 = Future 7 = When And If Issued 8 = Sellers Option 9 = T+5 Limit orders will only be accepted with a settle type of 0 (Regular) Crosses will be accepted with any of the above settlement types

Tag	Field Name	Req'd	Comments
111	MaxFloor	N	Maximum number of shares within an order to be displayed in the Matching System quote. If *MaxFloor* is not specified, the order will be displayed in its entirety assuming it would not lock or cross the NBBO. *MaxFloor* must be a round lot value and less than the *OrderQty*; otherwise the order will be rejected. If *MaxFloor* = 0, the order will be undisplayed (Do not Display). In the CHX Matching System the OrderQty of undisplayed orders must be equal to or greater than 1000 shares.
7369	RefreshThreshold	N	For a reserve order, the field acts as a low water mark for the current display quantity. That is, when the current displayed quantity becomes less than or equal to this field, it should be reset to the original display quantity as defined by MaxFloor. Absence of this field means *RefreshThreshold* =*MaxFloor*.

7.2 Cancel/Replace Request

Requests that change an order's display feature will be rejected. If an order is sent in originally with no reserve portion, the order cannot be changed to a reserve or a do not display order If an order was sent in as a reserve order, it cannot be changed to a do not display order or to a fully displayed order. If an order is sent in as a do not display order (MaxFloor = 0) the order cannot be changed to a reserve or a display order.

The order sender can change an order type from a limit order to a market order, but the change request must also be qualified with the TimeInForce of IOC, otherwise the order will be rejected.

Tag	Field Name	Req'd	Comments
54	Side	Y	Not modifiable
111	MaxFloor	N	Changeable, not to zero if it was previously non-zero
40	OrdType	Y	1 = Market 2 = Limit 7 = Limit or better These are the only acceptable changes. All cross orders are treated as IOC, the order will be executed or rejected when received. Cross orders cannot be cancel/replaced.
44	Price	N	Changeable within limits set out for a new single order.
99	StopPx	N	The order will reject if included
439	ClearingFirm	N	Will reject if modified from original clearing firm
63	SettlmntTyp	N	Not changeable
59	TimeInForce	N	Changeable within limits set out for a new single order.
18	ExecInst	N	Changeable, except to f (ISO.