CHI-X FIX 4.2 Application Notes

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Version: 1.30

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System response times may vary for a number of reasons including market conditions, trading volumes and system performance.

Revision History

Version	Description	Date
Version 1.11	Made tag 6774 – BrokerNumber required on new order	2008-03-07
Version 1.12	Added tag 198 – SecondaryOrderID on execution reports Removed comment: "order quantity can be revised down only." Quantity can be revised up or down	2008-03-24
Version 1.13	Added Smart Routing destinations, CSO, Peg Offset and Cross	2008-04-04
Version 1.14	Added tag 6776 and 6777 in Trade Report and identify hidden order value	2008-05-16
Version 1.15	Removed "PT" value from tag 6750 UMIRAccountType Added 59=N for "Bypass" order	2008-07-16
Version 1.16	Added values to tag 76 in Trade Report messages Added tag 110 in New Order	2008-07-18 2008-10-08
Version 1.17	Added 59=P for "Post-Only" order Added tag 8020 in New Order	2008-07-18 2008-10-08
Version 1.18	Modified "Bypass" order implementation from 59=N to 6791=Y	2009-05-05
Version 1.19	Added additional value possibilities for tag 76 (ALPH, MATCH)	2009-06-17
Version 1.20	Removed Principal and Wash trade markers from new order	2009-07-29
Version 1.21	Added tag 21 in Cross Order	2010-09-14
Version 1.22	Changed tag 21 to modified if value other than 1	2010-09-27
Version 1.23	Added tag 6761, anonymous	2010-11-18
Version 1.24	Clean up Removed references to alternate symbology	2011-02-18
Version 1.25	Removed 6761 from execution	2011-05-09
Version 1.26	Added TMXS as a valid execbroker for TMX Select transactions	2011-07-07
Version 1.27	Added tag 7729 SME for future use, tag 20050 Facilitation Qty, additional cross types (C,V,B), and bypass cross order. Added NoTradeFeat (7713) and NoTradeKey (7714)	2012-06-28
Version 1.28	Added CSO to cross order type	2012-08-09
Version 1.29	Added tag 6763 to Order Cancel/Replace Request and Trade Report. Added tag 8114 (RepriceReason) to Acknowledgement messages.	2012-09-14
Version 1.30	Incorporated CX2 changes. Added tag 8115 (BrokerPrefEligible) and 8116 (BrokerPref). Modified tag 6761 (Anonymous) and added CX2 value for tags 57, 100, 128 and 129. Added CX2 as a valid ExecBroker for CX2 transactions.	2012-10-22

Table of Contents

1 INTRODUCTION

This document describes specifically what functionality is available through CHI-X's version FIX 4.2-based interface. It also describes how CHI-X uses the FIX protocol to achieve this functionality.

This document is intended to supplement the FIX Protocol Specification (www.fixprotocol.org), by describing:

- Where there are multiple ways to achieve a desired outcome with the protocol, this document describes which one(s) CHI-X supports.
- Where the protocol does not define the exact meaning or content of various fields, this document provides as much detail as possible to describe CHI-X's chosen implementation.
- Where there are possible alternative interpretations, this document describes which interpretation CHI-X has selected.

What is FIX?
FIX Connectivity enables the easy integration of the CHI-X trading system into your workflow and makes it easier for you to trade by reducing your keystrokes. FIX stands for the Financial Information eXchange Protocol. The FIX protocol is a 'language' created by a group of institutional clients and brokers to standardize the delivery of relevant pre-trade and trade information. It is a public-domain specification owned and maintained by the FIX Protocol Organization. CHI-X offers many options for you to easily integrate CHI-X into your workflow using a FIX connection.

Send orders or lists to CHI-X directly from your trade blotter
With a FIX connection between your system and CHI-X, you can easily send orders to CHI-X automatically from your trade blotter, providing instant access to Canadian trading opportunities and liquidity.

1.1 Documentation Methodology

FIX messages and fields are reprinted in this document, only if their content or usage differs from the original FIX specification (www.fixprotocol.org). **FIX messages** are quoted in **boldface** (e.g. **Resend Request, Logon**); *FIX fields* are quoted in *italics* (e.g. *PossResend, SenderSubID).*

2 CHI-X'S FIX INTERFACE

Since CHI-X is not a multi-day trading system, it does not support multi-day orders. When the system is brought down for nightly maintenance, all orders residing on the system will be cancelled, and FIX sequence numbers will be reset. When the system comes back up, it is considered the next trading day.

The following is the schedule for nightly maintenance (please note that times are approximate):

- Monday thru Friday 6 pm to 6 am EST time

Please also note that nightly maintenance will occur during Holidays.

Upon request, our CHI-X Support staff will provide you with access to the FIX test server. An appointment is required for certification purposes.

While using the test connection, the client will receive approximately the same traffic as from the production connection. Please note, that not all trades or orders will be the same on the test server as they are on the production server.

3 Configuration Information

3.1 Client

3.1.1 SenderCompID

Clients must identify the session in the *SenderCompID (49)* field. CHI-X must approve this value. CHI-X's software is case sensitive and the maximum size of the *SenderCompID (49)* field is **32** characters.

3.1.2 TargetCompID

TargetCompID must identify CHI-X as the receiving firm.

3.1.3 Encryption

CHI-X does not support encryption of FIX messages.

3.2 CHI-X Configuration

3.2.1 SenderCompID

The value the client will receive in the *SenderCompID* field from CHI-X will be the value originally supplied to CHI-X in the *TargetCompID* field in the logon message.

3.2.2 TargetCompID

The value the client will receive in the *TargetCompID* field from CHI-X will be the value originally supplied to CHI-X in the *SenderCompID* field in the logon message.

3.2.3 IP Addresses

CHI-X will provide clients the appropriate IP addresses for the production and test environments.

4 Session Management

This section describes session-level FIX messages sent between CHI-X and the client.

The production servers consist of a primary and a standby server. If the session to the primary server fails, retry this connection after 30 seconds. If reconnection fails, establish a session with the standby server. The secondary session will continue where the primary session left off. Once a session is reestablished, CHI-X will immediately begin sending execution reports that were not successfully delivered in the previous FIX session for the same trade date.

4.1 Message header format to CHI-X

CHI-X processes only the following fields in the message header and ignores all others:

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.2
9	BodyLength	Y	Must be the second field in the message.
34	MsgSeqNum	Y	See standard FIX explanation.
35	MsgType	Y	Must be the third field in the message.
43	PossDupFlag	N	Always required for retransmissions, whether prompted by the sending system or as the result of a resend request.
49	SenderCompID	Y	The value used must be recognized and agreed to by CHI-X.
50	SenderSubID	N	This can be used to indicate a specific CHI-X account or client. CHI-X ignores this tag.
52	SendingTime	Y	Indicates the time the message was sent by the client.
56	TargetCompID	Y	Identifies CHI-X as the receiving firm
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.

4.2 Message header format to Client

CHI-X processes only the following fields in the message header and ignores all others:

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.2
9	BodyLength	Y	Will be the second field in the message.
34	MsgSeqNum	Y	See standard FIX explanation.
35	MsgType	Y	Will be the third field in the message.
43	PossDupFlag	N	Always required for retransmissions, whether prompted by the sending system or as the result of a resend request.
49	SenderCompID	Y	The value originally supplied to CHI-X in the *TargetCompID* field in the logon message from the Client.
52	SendingTime	Y	Indicates the time the message was sent by CHI-X.
56	TargetCompID	Y	The value originally supplied to CHI-X in the *SenderCompID* field in the logon message from the Client.
57	TargetSubID	N	The value originally supplied to CHI-X in the *SenderSubID* field in related application messages from the Client, if specified.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.

4.3 Message trailer format

CHI-X processes only the following fields in the message trailer and ignores all others:

Tag	Field Name	Req'd	Comments
10	CheckSum	Y	(Always unencrypted, always last field in message)

4.4 Logon

4.4.1 Client logon

The first expected message CHI-X will receive from a client is a **Logon** message. The following are the logon parameters:

- The sequence number, on the initial logon for each trading day, must be set to "1".
- The heartbeat interval must be greater than zero.
- The *SenderCompID (49)* must be recognized by CHI-X (see section titled Configuration Information).
- The client must set the *TargetCompID (56)*.
- **If a client receives a sequence number less than expected, the client must terminate their session immediately, and should then contact CHI-X to correct the problem, as per the FIX protocol.**

4.4.2 CHI-X logon

Once CHI-X receives a **Logon** request, it will validate the *SenderCompID* and perform a recovery process (see section titled *Recovery*). **No** messages should be sent to CHI-X until a **Logon** message is received in reply from CHI-X.

In some cases, some time will elapse before a response is sent from CHI-X. Once the positive response is returned, the client's heartbeat interval timer should begin. The session is signed on and both parties can begin exchanging messages. The negative response to a **Logon** request is a **Logout**.

4.5 Administrative messages

This section describes the minimum requirements to keep the session alive and synchronized.

CHI-X must receive a message from the client at least **once** in the heartbeat interval defined in the logon. CHI-X will assume the session is not alive if a message is not received in **two** heartbeat intervals, will send a **Logout** message to the client and then disconnect the session as per the FIX protocol.

CHI-X will send a message at least once in the heartbeat interval. In addition, CHI-X handles the following session level messages: **Resend Request**, **Sequence Reset** and **Test Request** messages and ignores the *OrigSendingTime (122)* in all messages.

4.6 Logout

This section concerns normal and abnormal termination of a session by either party.

4.6.1 Client

A Client's FIX session should remain established throughout the trading day. CHI-X will logout client sessions before the start of the maintenance window. Abnormal session termination is treated as though the client had logged out from CHI-X. The following are considered abnormal session terminations:

- Network level disconnection
- Failure to send a message after two heartbeat intervals (see section titled "Administrative Messages")

4.6.2 CHI-X Nightly Maintenance

When CHI-X shuts down for nightly maintenance, any live sessions will be terminated. All remaining open orders will be cancelled and a new trade date will begin. No **Execution Reports** will be sent for orders sent on previous trading days.

4.7 Reject messages

Reject messages sent by CHI-X will include the sequence number of the rejected message and an explanation of the nature of the error, in the *text* field, whenever possible.

If CHI-X receives a message with a sequence number ***less*** than expected during normal session processing, and it does not contain the *PossDupFlag* field, the message is discarded and a **Reject** message is sent to the client.

4.8 Recovery

When a client reconnects after a break in the session during the same trading day, CHI-X begins the following recovery sequence:

- **If CHI-X receives a sequence number less than expected the session will be terminated immediately without sending a logoff. The client should contact CHI-X to correct the problem.**
- CHI-X will transmit any unsent execution reports on receipt of a **Resend Request** from the client for the missing sequence numbers. If trades occur while the FIX session is down, CHI-X's outgoing sequence number will be higher than expected by the client.

The client is responsible for detecting message gaps for messages transmitted by CHI-X that may have been lost in the previous session, as per the FIX protocol. CHI-X will retransmit those messages when requested to do so by the client.

5 Application Messages

This section discusses the application-level FIX messages sent and accepted by CHI-X.

5.1 Symbology

CHI-X supports only the Local/ exchange stock naming identifier in FIX messages.

5.2 Order Entry

5.2.1 Client

CHI-X currently supports the **New Order Single**, **Order Cancel Request, Order/Cancel Replace Request** FIX messages.

5.2.1.1 New Order Single

In addition to the standard header, trailer, and CHI-X-accepted symbol definition fields, CHI-X processes only the following fields in a **New Order Single** message, and ignores all others:

Tag	Field Name	Req'd	Comments
1	Account	N	Identifies the trading account.
11	ClOrdID	Y	Must be unique for each order throughout the trading day, across all stocks and sides from the same FIX Session ID.

18	ExecInst	N	Values supported by CHI-X (may be combined and must each be separated by a space):
			G = All or None (AON)
			Pegging options (mutually exclusive)
			P = Market Peg
			R = Primary Peg
			M = Mid-price Peg
			f = CSO

21	HandlInst	Y	Instructions for order handling on CHI-X's trading system. Value supported by CHI-X: 1 = Automated execution order, private, no Broker intervention **NOTE**: Values other than 1 will cause the order to be modified to 1.
38	OrderQty	Y	Quantity of order.

Tag	Field Name	Req'd	Comments
40	OrdType	Y	Values supported by CHI-X: 1 = Market 2 = Limit P =Pegged (requires ExecInst = M or R or P)
44	Price	N	Required for limit orders. If included in a Market order, the order will be rejected.
54	Side	Y	Values supported by CHI-X: 1 = Buy 2 = Sell 5 = Sell short 6 = Sell short exempt
55	Symbol	Y	Local/ exchange symbol only
57	TargetSubid	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
59	TimeInForce	N	Absence of this field indicates a day order. Values supported by CHI-X: 0 = Day 3 = Immediate or Cancel – As much of the order as possible must be executed immediately. Any part of the order that is not executed immediately gets canceled. 4 = Fill Or Kill (FOK) – Fill the order in its entirety or cancel it immediately. 6 = Good Till Date (GTD) – Date must be today's trading date. This field must be used in conjunction with field ExpireTime (Field ID 126). P = Post-Only Order Day orders are in effect until the client cancels the order, or until the CHI-X trading system is shut down for CHI-X Nightly Maintenance.
60	TransactTime	Y	Time this order request was initiated by client.

Tag	Field Name	Req'd	Comments
100	ExDestination	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
110	MinQty	N	Minimum Quantity of the order to be executed.
111	MaxFloor	N	Reserve size order. Must be equal to or multiple of STU (Standard Trading Unit) Hidden Order: A value of 0 hides the order Any other value supplied by the client will cause the order to be rejected.
126	ExpireTime	N	Time/Date of order expiration in GMT. Only valid when TimeInForce (59) = 6 (Good Till Date). Date must be today's Trading Date. Incorrect data results in a rejected order.
128	DeliverToCompid	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
129	DeliverToSubID	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
211	PegDifference	N	Amount in dollars added to the price of the peg. Positive values are more aggressive, negative values more passive.

Tag	Field Name	Req'd	Comments

6750	UMIRAccountType	Y	Required for Canadian regulatory reporting.
			CL=Client (Default)
			NC=Non-Client
			ST=Specialist
			IN=Inventory
			OF = Options firm account
			OT = Options market maker
			Note: If unspecified, Default is applied

6751	UMIRUserID	Y	Required for Canadian regulatory reporting, the trading system's user ID for the trader.
6754	BasketTrade	N	Identification for order as part of a basket trade: N=No (Default) 1*5Digit=Basket Number

6755	ProgramTrade	N	An order that is part of a basket trade comprised of Index securities to offset a futures or options position.
			Y=Yes
			N=No (Default)

6757	Jitney	N	To mark an order as being executed on behalf of another broker: BrokerNumber

6761	Anonymous	N	Chi-X Canada:
			Whether the execution should hide the TSX Broker Number. TSX Broker Number always hidden on the order book.
			Y=Yes (Default)
			N=No
			CX2:
			Whether the TSX Broker Number should be hidden on the order book and execution.
			Y=Yes
			N=No (Default)

6763	UMIRRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

6774	BrokerNumber	Y	TSX Broker Number, 3 digit numeric.

Tag	Field Name	Req'd	Comments
6791	Bypass	N	Order marker that indicates the order should only trade with displayed volumes, i.e. ignore any hidden quantities. These orders are treated as IOC. "Y"|"N"; default is "N"
7713	NoTradeFeat	N	Defines the behaviour of self-trade prevention when using NoTradeKey. 2 characters (not space separated): 1st character: N=Cancel newest order (the active order is cancelled) (Default) O=Cancel oldest order (the resting order is cancelled and the new order is allowed to book) D=Decrement and Cancel (the quantity of the larger order will be reduced, and the smaller order(s) are cancelled) 2nd character: M=Self-trade prevention at marketplace level (order will not match regardless of broker number) B=Self-trade prevention at broker level (only orders with the same broker number will be prevented from matching) (Default) The NoTradeFeat of the incoming order will take precedence.
7714	NoTradeKey	N	This participant generated key prevents the order from trading against orders with the same key value. 6*AlphaNumeric, no default
7729	ShortMarkingExempt	N	For future use when SME marker becomes regulatory requirement for certain participants. 0=SME

8115	BrokerPrefEligible	N	Whether the order should be eligible for broker preferencing functionality. (CX2 Only)
			Y=Yes(Default)
			N=No

8020	DisplayRange	N	Quantity assigned to max floor orders indicating the range in which the displayed quantity will randomly increase or decrease

5.2.1.2 Order Cancel Request

CHI-X processes a Cancel Request quantity as the full remaining quantity. CHI-X does not support partial cancels.

In addition to the standard header, trailer, and CHI-X-accepted symbol definition fields, CHI-X processes only the following fields in an **Order Cancel Request** message, and ignores all others:

Tag	Field Name	Req'd	Comments
11	ClOrdID	Y	Unique ID of cancel request assigned by the client.
38	OrderQty	Y	Required by the FIX protocol, ignored by CHI-X. All cancel requests are for full remaining quantity.
41	OrigClOrdID	Y	Unique ID of original order to be cancelled as assigned by client.
54	Side	Y	
55	Symbol	Y	
60	TransactTime	Y	Time this order request was initiated by client.

5.2.1.3 Order Cancel/Replace Request

Cancel/Replace requests will be handled as per the FIX protocol. Cancel/Replace requests that cannot be processed will be rejected using the **Cancel Reject** message; If CHI-X rejects the Cancel/Replace request, the *ClOrdID* of the replacement order will be inserted in the *ClOrdID* field of the Cancel Reject message for identification purposes.

In addition to the standard header, trailer, and CHI-X-accepted symbol definition fields, CHI-X processes only the following fields in an **Order Cancel/Replace Request** message, and ignores all others.

Tag	Field Name	Req'd	Comments
11	ClOrdID	Y	Unique ID of replacement order as assigned by the client.
18	ExecInst	N	For a replacement order, this field must be populated anew (i.e. original order values will not be brought forward to replacement order unless redefined within this message).
21	HandlInst	Y	
38	OrdQty	Y	Note: The quantity in the Cancel/Replace message is the total order quantity, as defined by the FIX protocol and total order quantity semantics. Please refer to Appendix A for more information.
40	OrdType	Y	New Order Type for the request. Values supported: 1 = Market 2 = Limit P = Pegged (must include value in ExecInst)
41	OrigClOrdID	Y	Unique ID of order to be replaced as assigned by client.

Tag	Field Name	Req'd	Comments
44	Price	N	Required for Limit orders
54	Side	Y	
55	Symbol	Y	
59	TimeInForce	N	Absence indicates a Day order
60	TransactTime	Y	Time this order request was initiated by client.
110	MinQty	N	See New Order Single section.
111	MaxFloor	N	See New Order Single section.
126	ExpireTime	N	If the client attempts to revise the expiration time to a time prior than the current time, the Cancel/Replace Request will be rejected.

6763	UMIRRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

8020	DisplayRange	N	Quantity assigned to max floor orders indicating the range in which the displayed quantity will randomly increase or decrease.

5.2.2 CHI-X Order Entry Messages

5.2.2.1 New Order Single Response

In addition to the standard header, trailer and CHI-X-accepted symbol definition fields, CHI-X will provide the following fields in an **Execution Report** message in response to a New Order Single request.

Tag	Field Name	Req'd	Comments
6	AvgPx	Y	The average price of all shares traded. Defaulted to 0 for order acknowledgements.
11	ClOrdID	N	CHI-X will always populate this field with the original value assigned by client in the **New Order Single** message.
14	CumQty	Y	The total shares traded against the original order quantity. Defaulted to 0 for order acknowledgements.
15	Currency	N	Currency associated with symbol in Symbol (55) field
17	ExecID	Y	A unique identifier of execution message as assigned by CHI-X.
20	ExecTransType	Y	0 = New
31	LastPx	Y	Defaulted to 0 for order acknowledgements.
32	LastShares	Y	Defaulted to 0 for order acknowledgements.
35	MsgType	Y	8 = Execution Report
37	OrderID	Y	CHI-X order reference number.
38	OrderQty	Y	Quantity of original order.

Tag	Field Name	Req'd	Comments
39	OrdStatus	Y	0 = New 5 = Replaced 8 = Rejected
40	OrdType	N	Values supported by CHI-X: 1 = Market 2 = Limit P = Pegged (requires ExecInst of M or R)
44	Price	N	Limit Price Required for limit orders only.
54	Side	Y	Values supported by CHI-X: 1 = Buy 2 = Sell 5 = Sell short 6 = Sell short exempt
55	Symbol	Y	Local/ exchange symbol
59	TimeInForce	N	Will be returned if supplied in original New Order Single message.
103	OrdRejReason	N	Used with OrdStatus = 8 (Rejected) if reason is definable.
150	ExecType	Y	0 = New 5 = Replaced 8 = Rejected
151	LeavesQty	Y	Amount of shares open for further execution.
198	SecondaryOrderID	N	When present, CHI-X order number as reported in the market data feed (CHIXMD) otherwise use tag 37.

6761	Anonymous	N	Chi-X Canada:
			Whether the execution should hide the TSX Broker Number. TSX Broker Number always hidden on the order book.
			Y=Yes (Default)
			N=No
			CX2:
			Whether the TSX Broker Number should be hidden on the order book and execution.
			Y=Yes
			N=No (Default)

Tag	Field Name	Req'd	Comments

6763	UMIRRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

7729	ShortMarkingExempt	N	Will be returned if supplied in original New Order Single message.
8114	RepriceReason	N	Populated with a reason code if the order is repriced: 1=Repriced to prevent trade 2=Repriced to prevent lock 3=Repriced to prevent cross

8115	BrokerPrefEligible	N	Whether the order should be eligible for broker preferencing functionality. (CX2 Only)
			Y=Yes(Default)
			N=No

5.2.2.2 Order Cancel Acknowledgment

In addition to the standard header, trailer and CHI-X-accepted symbol definition fields, CHI-X will provide the following fields in an **Execution Report** message in response to an order cancel or cancel/replace request that is accepted by CHI-X.

Tag	Field Name	Req'd	Comments
6	AvgPx	Y	The average price of all shares traded.
11	ClOrdID	N	CHI-X will always populate this field with the original value assigned by client in the **New Order Single** message.
14	CumQty	Y	The total shares traded against the original order quantity.
15	Currency	N	Currency associated with symbol in Symbol (55) field.
17	ExecID	Y	A unique identifier of execution message as assigned by CHI-X.
20	ExecTransType	Y	0 = New
31	LastPx	Y	Defaulted to 0 for order cancel acknowledgements. Price at which the match would have occurred if not prevented when cancelled/replaced due to no-self trade.
32	LastShares	Y	Defaulted to 0 for order cancel acknowledgements. The quantity of shares that would have matched if not prevented when cancelled/replaced due to no-self trade.
35	MsgType	Y	8 = Execution Report
37	OrderID	Y	CHI-X order reference number.
38	OrderQty	Y	Quantity of original order.

Tag	Field Name	Req'd	Comments
39	OrdStatus	Y	4 = Cancelled
40	OrdType	N	Values supported by CHI-X: 1 = Market 2 = Limit P = Pegged (requires ExecInst of M or R)
41	OrigClOrdID	Y	Unique ID of original order to be cancelled as assigned by client.
44	Price	N	Limit Price
54	Side	Y	Values supported by CHI-X: 1 = Buy 2 = Sell 2 = Sell short 6 = Sell short exempt
55	Symbol	Y	Local/exchange symbol
59	TimeInForce	N	Will be returned if supplied in original New Order Single message.
150	ExecType	Y	4 = Cancelled
151	LeavesQty	Y	Amount of shares open for further execution.
6751	UMIRUserID	Y	Required for Canadian regulatory reporting, the trading system's user ID for the trader.

6763	UMIRRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

5.2.2.3 Order Cancel and Cancel/Replace Reject

In addition to the standard header, trailer and CHI-X accepted symbol definition fields, CHI-X will provide the following fields in a Cancel Reject message in response to an order cancel request that is rejected.

Tag	Field Name	Req'd	Comments
11	ClOrdID	Y	CHI-X will always populate this field with the original value assigned by client in the **New Order Single** message.
35	MsgType	Y	9 = Order Cancel Reject
37	OrderID	Y	CHI-X order reference number.
39	OrdStatus	Y	OrdStatus value after this cancel reject is applied.
41	OrigClOrdID	Y	ClOrdID that could not be canceled.
58	Text	N	The reason for the cancel reject.

Tag	Field Name	Req'd	Comments
66	ListID	N	Required for rejects against orders which were submitted as part of a list.
434	CxlRejResponseTo	Y	Type of request to which this is a response: 1=Order Cancel Request

5.2.2.4 Replace Response

Please refer to the section "New Order Single Response" for how CHI-X responds to Cancel/Replace requests as per the FIX protocol.

5.2.2.5 Trade Report

CHI-X sends your trade reports via the **Execution Report** message. The trade report provides relay fill information as orders trade, including: average price of shares traded; total shares traded against the original order quantity; transaction time; and trade date. Please note that this does not include settlement information such as commission or tax information.

NOTE: The *ExecID* is considered to be the unique identifier of an execution message by CHI-X, as per the FIX protocol. It is the client's responsibility to detect and appropriately process possible duplicate ExecIDs, regardless of whether the *PossResend* flag has been set on the message or not.

In addition to the standard header, trailer, and CHI-X-accepted symbol definition fields, CHI-X provides only the following fields in an **Execution Report**:

Tag	Field Name	Req'd	Comments
6	AvgPx	Y	Average price of shares traded.
11	ClOrdID	N	CHI-X will always populate this field with the original value assigned by client in the **New Order Single** message.
14	CumQty	Y	Total shares traded against the original order quantity.
15	Currency	N	Currency in which the security is traded.
17	ExecID	Y	A unique identifier of execution message as assigned by CHI-X.
19	ExecRefID	N	Used in a trade correct or cancel message (i.e. *ExecTransType* = 1 or 2) to refer to the previous **Execution Report** to which the current message applies.
20	ExecTransType	Y	Values supported by : 0 = New to indicate a trade report 1 = Cancel to indicate a trade cancel 2 = Correct to indicate a trade revision
31	LastPx	Y	Price of shares bought or sold on this fill.
32	LastShares	Y	Quantity of shares bought or sold on this fill.
37	OrderID	Y	CHI-X order reference number.
38	OrderQty	Y	Quantity of original order.
39	OrdStatus	Y	1 = Partially filled 2 = Filled

Tag	Field Name	Req'd	Comments
40	OrdType	N	Values supported by CHI-X: 1 = Market 2 = Limit P = Pegged (requires ExecInst of M or R)
44	Price	N	Limit Price Required for limit orders only.
54	Side	Y	Values supported by CHI-X: 1 = Buy 2 = Sell 2 = Sell short 6 = Sell short exempt
55	Symbol	Y	Returns the Local/ exchange symbol of the security traded.
60	TransactTime	N	Time and date of execution (expressed as GMT).
75	TradeDate	N	Date of trade in YYYYMMDD format.
76	ExecBroker	N	Possible Values: CHIX, CX2, TSX,TMXS, PURE, ALPH, MATCH, OMGA
150	ExecType	Y	1 = Partially filled 2 = Filled
151	LeavesQty	Y	Amount of shares open for further execution.

6763	UMIRRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

6776	PrincipalTrade	N	A principal transaction between a dealer and a dealer's customer's account. Y=Yes
6777	WashTrade	N	A trade that has occurred between proprietary accounts of the same member firm. Y=Yes
6791	Bypass	N	Will be returned if supplied in original New Order Single message.
7729	ShortMarkingExempt	N	Will be returned if supplied in original New Order Single message.
8116	BrokerPref	N	Trade matched due to broker preferencing. Y=Yes

Tag	Field Name	Req’d	Comments

9882	TradeLiquidityIndicator	N	Values supported by CHI-X:
			A = Order added liquidity
			R = Order removed liquidity

5.2.2.6 Unsupported FIX Messages

CHI-X does not support the following FIX message types:

Allocation and Allocation ACK messages

Quote Request and Quote messages

Advertisement, Email and News messages

Order List, Order Status

List Cancel, List Execute and List Status

5.3 Cross

11	ClOrdID	Y	Must be unique for each order throughout the trading day, across all stocks and sides from the same FIX Session ID.
18	ExecInst	N	f = CSO
21	HandlInst	Y	Instructions for order handling on CHI-X’s trading system. Value supported by CHI-X: 1 = Automated execution order, private, no Broker intervention. **NOTE**: Values other than 1 will cause the order to be rejected.
38	OrderQty	Y	Quantity of order.
40	OrdType	Y	Values supported by CHI-X for Crosses: 2 = Limit
44	Price	N	Required for limit orders.
54	Side	Y	Values supported by CHI-X for Crosses: 8 = Cross 9 = Cross Short A = Cross Short Exempt
55	Symbol	Y	Local/ exchange symbol only

57	TargetSubid	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
59	TimeInForce	N	Absence of this field indicates a day order. Values supported by CHI-X for Crosses: 0 = Day
60	TransactTime	Y	Time this order request was initiated by client.
100	ExDestination	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
128	DeliverToCompid	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
129	DeliverToSubID	N	Indicates how the order should be routed (SOR enabled sessions only): CHIX (Default) CX2 Smart Order Router (SOR) Strategies: Values will be provided by Chi-X Canada Operations following certification.
6751	UMIRUserID	Y	Required for Canadian regulatory reporting, the trading system's user ID for the trader.
6754	BasketTrade	N	Identification for order as part of a basket trade: N=No (Default) 1*5Digit=Basket Number

6755	ProgramTrade	N	An order that is part of a basket trade comprised of Index securities to offset a futures or options position.
			Y=Yes
			N=No (Default)

6761	Anonymous	N	Whether the execution should hide the TSX Broker Number.
			Chi-X Canada:
			Y=Yes (Default)
			N=No
			CX2:
			Y=Yes
			N=No (Default)

6767	CHIXBuyAccountType	Y	Required for Canadian regulatory reporting.
			CL=Client (Default)
			NC=Non-Client
			ST=Specialist
			IN=Inventory
			PT = Professional Trader
			OF = Options firm account
			OT = Options market maker
			Note: If unspecified, Default is applied

6768	CHIXSellAccountType	Y	Required for Canadian regulatory reporting.
			CL=Client (Default)
			NC=Non-Client
			ST=Specialist
			IN=Inventory
			PT = Professional Trader
			OF = Options firm account
			OT = Options market maker
			Note: If unspecified, Default is applied

6769	CHIXBuyAccountID	N	Identifies the trading account on the Buy side of the Cross.
6770	CHIXSellAccountID	N	Identifies the trading account on the Sell side of the Cross.

6771	CHIXBuyRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

6772	CHIXSellRegulationID	N	Identification marker for UMIR-specific designations to orders and trades.
			IA=Insider Account
			NA=Not Applicable
			SS=Significant Shareholder

6773	CrossType	N	Refers to Specialty Cross types.
			I=Internal
			C=Contingent
			B=Basis
			V=VWAP

6774	BrokerNumber	Y	TSX Broker Number, 3 digit numeric.

6776	PrincipalTrade	N	A principal transaction between a dealer and a dealer's customer's account.
			Y=Yes
			N=No (Default)

6777	WashTrade	N	A trade that has occurred between proprietary accounts of the same member firm. "Y" | "N" ; default is "N"
6781	CHIXBuyJitney	N	To mark the buy side of the cross as being executed on behalf of another broker: BrokerNumber
6782	CHIXSellJitney	N	To mark the sell side of the cross an order as being executed on behalf of another broker: BrokerNumber
6791	Bypass	N	Regulatory marker indicating order is placed in conjunction with bypass orders. "Y"|"N"; default is "N"
7729	ShortMarkingExempt	N	For future use when SME marker becomes regulatory requirement for certain participants. 1=Buy SME 2=Sell SME 3=Both buy and sell SME
20050	FacilitationQty	N	Maximum quantity of shares to facilitate a "sweep and cross" order when not facilitating with the client side of the cross.

6 Appendix A – Example Order Flow Matrices

1 - Filled order

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	2000	8000	2000	Execution of 2000
4		Execution(X)	Partial Fill	Partially Filled	New	10000	3000	7000	1000	Execution of 1000
5		Execution(X)	Fill	Filled	New	10000	10000	0	7000	Execution of 7000

2 – Cancel request issued for a zero-filled order

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3	Cancel Request(Y,X)					10000				
4		*Cancel Reject (Y,X)*		*New*		*10000*				*If rejected*
4		Execution (Y,X)	Canceled	Canceled	New	10000	0	0	0	

3 – Cancel request issued for a part-filled order – executions occur whilst cancel request is active

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	2000	8000	2000	Execution for 2000
4	**Cancel Request(Y, X)**					**10000**				
4		**Execution(X)**	**Partial Fill**	**Partially Filled**	**New**	**10000**	**5000**	**5000**	**3000**	**Execution for 3000. This execution passes the cancel request on the connection**
5		*Cancel Reject (Y,X)*		*Partially Filled*		*10000*				*If request is rejected*
5		Execution(X)	Partial Fill	Partially Filled	New	10000	6000	4000	1000	Execution for 1000 whilst order is pending cancel
6		Execution (Y,X)	Canceled	Canceled	New	10000	6000	0	0	'Canceled' order status takes precedence over 'partially filled' order status

4 – Cancel request issued for an order that becomes filled before cancel request can be accepted

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	2000	8000	2000	Execution for 2000
4	**Cancel Request(Y, X)**					**10000**				
4		**Execution(X)**	**Partial Fill**	**Partially Filled**	**New**	**10000**	**5000**	**5000**	**3000**	**Execution for 3000. This execution passes the cancel request on the connection**
5		*Cancel Reject (Y,X)*		*Partially Filled*		*10000*				*If request is rejected*
6		Execution(X)	Fill	Filled	New	10000	10000	0	5000	Execution for 5000 whilst order is pending cancel. 'Pending cancel' order status takes precedence over 'filled' order status
7		Cancel Reject (Y,X)		Filled		10000				Cancel request rejected – CxlRejectReason = 0 (too late to cancel)

5 – Zero-filled order, cancel/replace request issued to decrease order qty

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3	Replace Request(Y,X)					9000				Request to decrease order qty to 9000
4		*Cancel Reject (Y,X)*		*New*		*10000*				*If rejected by trader*
4		Execution (Y,X)	Replace	Replaced	New	9000	0	9000	0	'Replaced' order status takes precedence over 'new' order status
5		Execution (Y)	Partial Fill	Partially Filled	New	9000	1000	8000	1000	Execution for 1000
6		Execution (Y)	Partial Fill	Partially Filled	New	9000	3000	7000	2000	Execution for 2000

6 – Part-filled order, followed by cancel/replace request to decrease order qty, execution occurs whilst order is pending replace

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4	Replace Request(Y,X)					8000				Request decrease in order quantity to 8000
5		*Cancel Reject (Y,X)*		*Partially Filled*		*10000*				*If request is rejected*
5		Execution (Y,X)	Partial Fill	Partial Fill	New	10000	1000	8000	0	
6		Execution(X)	Partial Fill	Partial Fill	New	10000	1100	7900	100	Execution for 100 before cancel/replace request is responded to
7		*Cancel Reject (Y,X)*		*Partially Filled*		*10000*				*If request is rejected*
7		Execution (Y,X)	Replace	Partially Filled	New	8000	1100	6900	0	‘Partially filled” order status takes precedence over ‘replaced’ order status
8		Execution(Y)	Fill	Filled	New	8000	8000	0	10900	Execution for 10900

7 – Cancel/replace request (not for quantity change) is rejected as a fill has occurred

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4	**Replace Request(Y, X)**					**10000**				
4		**Execution (X)**	**Fill**	**Filled**	**New**	**10000**	**10000**	**0**	**9000**	**Execution for 9000 – the replace request message and this execution report pass each other on the connection**
5		Cancel Reject (Y,X)		Filled		10000				CxlRejectReason = 0 (too late to cancel)

8 – Cancel/replace request sent whilst execution is being reported – the requested order qty exceeds the cum qty. Order is replaced then filled

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4	**Replace Request(Y, X)**					**8000**				**Request a decrease order quantity to 8000 (leaving 7000 open)**
4		**Execution(X)**	**Partial Fill**	**Partially Filled**	**New**	**10000**	**1500**	**8500**	**500**	**Execution for 500 sent. Replace request and this execution report pass each other on the connection**
5		Execution(X)	Partial Fill	Partially Filled	New	10000	1600	8400	100	Execution for 100 occurs before cancel/replace request is accepted
6		*Cancel Reject (Y,X)*		*Partially Filled*		*10000*				*If request is rejected*
6		Execution (Y,X)	Replace	Partially Filled	New	8000	1600	6400	0	'Partially filled' order status takes precedence over 'replaced' order status. Replace is accepted as requested order qty exceeds cum qty
7		Execution (Y)	Fill	Filled	New	8000	8000	0	6400	Execution for 6400.

9 – Cancel/replace request sent whilst execution is being reported – the requested order qty equals the cum qty – order qty is amended to cum qty

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3	**Replace Request(Y, X)**					**7000**				**Client wishes to amend order qty to 7000 shares**
3		**Execution(X)**	**Partial Fill**	**Partially Filled**	**New**	**10000**	**7000**	**3000**	**7000**	**Execution for 7000 - the replace message and this execution report pass each other on the connection**
4		Execution (Y,X)	Replace	Filled	New	7000	7000	0	0	The replace request is interpreted as requiring the balance of the order to be canceled – the 'filled' order status takes precedence over 'canceled' or 'replaced'

10 – Cancel/replace request sent whilst execution is being reported – the requested order qty is below cum qty – order qty is amended to cum qty

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3	**Replace Request(Y, X)**					**7000**				**Client wishes to amend order qty to 7000 shares**
3		**Execution(X)**	**Partial Fill**	**Partially Filled**	**New**	**10000**	**8000**	**2000**	**8000**	**Execution for 8000 - the replace message and this execution report pass each other on the connection**
4		Execution (Y,X)	Replace	Filled	New	8000	8000	0	0	The replace request is interpreted as requiring the balance of the order to be canceled – the 'filled' order status takes precedence over 'canceled' or 'replaced'

11 – One cancel/replace request is issued which is accepted – another one is issued which is also accepted

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4	Replace Request(Y,X)					8000				Request decrease in order quantity to 8000, leaving 7000 open
5		Execution(X)	Partial Fill	Partially Filled	New	10000	1500	8500	500	Execution for 500
6		Execution (Y,X)	Replace	Partially Filled	New	8000	1500	6500	0	'Partially filled' order status takes precedence over 'replaced' order status
7		Execution (Y)	Partial Fill	Partially Filled	New	8000	3500	4500	2000	Execution for 2000
8	Replace Request(Z,Y)					6000				Request decrease in order quantity to 6000, leaving 2500 open
9		Execution (Z,Y)	Replace	Partially Filled	New	6000	3500	2500	0	'Partially filled' order status takes precedence over 'replaced' order status
10		Execution(Z)	Fill	Filled	New	6000	6000	0	2500	Execution for 2500

12 – Unsolicited cancel of a part-filled order

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4										CHI-X verbally agrees to cancel order
5		Execution(X)	Canceled	Canceled	New	10000	1000	0	0	CHI-X signifies that order has been canceled - ExecRestatementReason = Verbal change

13– Order rejected due to duplicate ClOrdID

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4	New Order(X)					10000				Order submitted with the same order id
5		Execution(X)	Rejected	Partially Filled	New	10000	1000	9000	0	OrdRejReason = duplicate order

14 - Poss resend order

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				
2		Execution(X)	New	New	New	10000	0	10000	0	
3	New Order(X)					10000				PossResend=Y
4		Execution(X)	New	New	Status	10000	0	10000		Because order X has already been received, confirm back the current state of the order. Last shares not required when ExecTransType = Status
5	New Order(Y)					15000				PossResend=Y
6		Execution(Y)	New	New	New	15000	0	15000	0	Because order Y has not been received before, confirm back as a new order.

15 – Immediate or Cancel order that cannot be immediately hit

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**Last Shares**	**Comment**
1	New Order(X)					10000				Order is IOC
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*	*0*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	1000	Execution for 1000
4		Execution(X)	Canceled	Canceled	New	10000	1000	0	0	If order cannot be immediately hit

16 – Filled order, followed by correction and cancellation of executions

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**AvgPx**	**Last Shares**	**Last Px**	**ExecId (ExecRefID)**	**Comment**
1	New Order(X)					10000							
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*		*0*		*A*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	0		B	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	100	1000	100	C	Execution for 1000 @ 100
4		Execution(X)	Fill	Filled	New	10000	10000	0	109	9000	110	D	Execution for 9000 @ 110
5		Execution(X)	Fill	Filled	Cancel	10000	9000	1000	110	0	0	E (C)	Cancel execution for 1000
6		Execution(X)	Fill	Filled	Correct	10000	9000	1000	100	9000	100	F (D)	Correct price on execution for 9000 to 100

17 – Fully filled order (1 trade), followed by cancellation of execution.

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**AvgPx**	**Last Shares**	**Last Px**	**ExecId (ExecRefID)**	**Comment**
1	New Order(X)					10000							
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*		*0*		*A*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	0		B	
3		Execution(X)	Fill	Filled	New	10000	10000	0	100	10000	100	C	Execution for 10000 @ 100
4		Execution(X)	Fill	Filled	Cancel	10000	0	0	0	0	0	D (C)	Cancel execution for 10000

18 – Fully filled order (>1 trade), followed by cancellation of 1 execution.

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**AvgPx**	**Last Shares**	**Last Px**	**ExecId (ExecRefID)**	**Comment**
1	New Order(X)					10000							
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*		*0*		*A*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	0		B	
3		Execution(X)	Fill	Partially Filled	New	10000	8000	2000	100	8000	100	C	Execution for 8000 @ 100
4		Execution(X)	Fill	Filled	New	10000	10000	0	100	2000	100	D	Execution for 2000 @ 100
5		Execution(X)	Fill	Filled	Cancel	10000	8000	0	100	2000	0	E (D)	Cancel execution for 2000

19 – Partially filled order (1 trade), followed by cancellation of execution and remaining quantity trades

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**AvgPx**	**Last Shares**	**Last Px**	**ExecId (ExecRefID)**	**Comment**
1	New Order(X)					10000							
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*		*0*		*A*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	0		B	
3		Execution(X)	Fill	Partially Filled	New	10000	8000	2000	100	8000	100	C	Execution for 8000 @ 100
4		Execution(X)	New	New	Cancel	10000	0	2000	0	2000	0	D (C)	Cancel execution for 8000
5		Execution(X)	Fill	Filled	New	10000	2000	0	100	2000	100	E	Execution for 2000 @ 100

20 – Filled order, followed by correction of execution.

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**AvgPx**	**Last Shares**	**Last Px**	**ExecId (ExecRefID)**	**Comment**
1	New Order(X)					10000							
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*		*0*		*A*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	0		B	
3		Execution(X)	Fill	Filled	New	10000	10000	0	100	10000	100	C	Execution for 10000 @ 100
4		Execution(X)	Fill	Filled	Correct	10000	10000	0	101	10000	101	D (C)	Correct execution for 10000 @ 101

21 – Filled order, followed by correction and cancellation of executions

Time	**Message Received** (ClOrdID, OrigClOrdID)	**Message Sent** (ClOrdID, OrigClOrdID)	**Exec Type**	**OrdStatus**	**Exec Trans Type**	**Order Qty**	**Cum Qty**	**Leaves Qty**	**AvgPx**	**Last Shares**	**Last Px**	**ExecId (ExecRefID)**	**Comment**
1	New Order(X)					10000							
2		*Execution(X)*	*Rejected*	*Rejected*	*New*	*10000*	*0*	*0*		*0*		*A*	*If order is rejected*
2		Execution(X)	New	New	New	10000	0	10000	0	0		B	
3		Execution(X)	Partial Fill	Partially Filled	New	10000	1000	9000	100	1000	100	C	Execution for 1000 @ 100
4		Execution(X)	Fill	Filled	New	10000	10000	0	109	9000	110	D	Execution for 9000 @ 110
5		Execution(X)	Partial Fill	Partially Filled	Cancel	10000	9000	1000	110	0	0	E (C)	Cancel execution for 1000
6		Execution(X)	Partial Fill	Partially Filled	Correct	10000	9000	1000	100	9000	100	F (D)	Correct price on execution for 9000 to 100

7 Appendix B – CHI-X Peg Order Definitions

Primary (PRIM) Peg Type

This section will provide examples of Basic and Incremental PRIM Pegged orders.

Basic Primary Peg

Basic PRIM pegged orders are pegged to the same side of the stock's consolidated market best bid/offer. The order does not have any discretion, and therefore, will only trade with other orders at its then displayed price. The order will float with the market up to the limit price.

Peg Order Type	**Does the Display Float?**	**Side Pegged**
Basic Primary (PRIM)	Y	Same side of primary mkt quote

In the following example, the order is to *Buy 3000 at 10.20 pegged to the PRIM*:

ExecInst (18)	OrderQty (38)	OrdType (40)	Price[1] (44)	Side (54)
R	3000	P	10.20	1

The consolidated market best bid and offer is 10.10 – 10.16. The order will be initially displayed at 10.10 and will float with the market but never beyond the limit price of 10.20. It will only trade with other orders at the then displayed price..

Mid (MID) Peg Type

This section will provide examples of Basic and Incremental MID Pegged orders.

Basic Mid Peg

Basic MID pegged orders are pegged to the middle of the consolidated market best bid and offer. The order price does not have any discretion, and therefore, will only trade with other orders at its then calculated price. The order will float with the market up to the limit price. MID pegged orders are hidden orders and not displayed on the book.

[1] If no limit price (*Price)* is entered for Primary Pegged orders then the order will float until fully executed. This applies to all Primary Pegged orders.

Peg Order Type	Does the Hidden Price Float?	Side Pegged
Basic MID	Y	Middle Consolidated Mkt best bid/offer.

In the following example, the order is to *Buy 3000 at 10.20 pegged to the MID*:

ExecInst (18)	OrderQty (38)	OrdType (40)	Price[2] (44)	Side (54)
M	3000	P	10.20	1

The primary market best bid and offer is 10.00 – 10.02. Therefore, the order will initially be displayed at 10.01, and will float with the market, but never beyond the limit of 10.20. The order will trade with other orders at the mid price.

Market (MKT) Peg Type

This section will provide examples of Basic and Incremental Market (MKT) Pegged orders.

Basic Market Peg

Basic Market (MKT) pegged orders are pegged to the contra-side of the Consolidated Market. The order will float with the market up to the limit price.

Peg Order Type	Does the Display Float?	Side Pegged
Basic Market (MKT)	Y	Contra side of Primary Market

In the following example, the order is to *Buy 3000 at 10.20 pegged to the MKT*:

ExecInst (18)	OrderQty (38)	OrdType (40)	Price[3] (44)	Side (54)
P	3000	P	10.20	1

The Consolidated Market best bid and offer is 10.01 – 10.06. Therefore, the order will initially be displayed at 10.05, and will float with the market, but never beyond the limit of 10.20.

[2] If no limit price (*Price)* is entered for Mid Pegged orders then the order will float until fully executed. This applies to all Mid Pegged orders.

[3] If no limit price (*Price)* is entered for Market Pegged orders then the order will float until fully executed. This applies to all Market Pegged orders.