Exhibit M-5

NASDAQ FUTURES FEE SCHEDULE

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PREFACE

For purposes of assessing fees, the following references should serve as guidance.

The term "**Customer**" applies to any transaction that is identified by a Futures Participant with a Customer Type Indicator ("CTI") code 4.

The term "**Market Maker**" means a Futures Participant, approved by the Exchange to undertake rights and obligations to facilitate an orderly and liquid market, as a Market Maker, and quote continuous two-sided markets for its own account pursuant to Chapter IV, Section 10. The term "Market Maker" applies to any transaction which occurs in an account assigned by the Exchange for the purpose of transacting orders as a Market Maker.

The term "**Firm**" applies to any transaction that is identified by a Futures Participant with a CTI code of 1, 2 or 3 and not in an account designated as market maker or liquidity provider.

Billing Disputes:

All billing disputes must be submitted to the exchange in writing and must be accompanied by supporting documentation. All disputes must be submitted no later than sixty (60) days after receipt of a billing invoice.

Section I-Transaction Charges

Section II-Permit Fee

$100 per annum to be effective on the first of July each year

Section III - Regulatory Fee

$175 per month*

* This Regulatory Fee would be waived for Futures Participants who incur a minimum of $175 in transaction fees in a billing month. Market Makers are exempt from the Regulatory Fee.

Exhibit M-6

System Settings

NASDAQ FUTURES EXCHANGE SYSTEM SETTINGS

Trading System Settings

Pursuant to various Exchange Rules noted below, the NASDAQ OMX Futures Exchange ("Exchange") has configured certain values within its Trading System. The current Trading System Settings are as follows:

Description	Value	Products Impacted	Rule Reference
Market Order Cancel Timer	5 seconds	All products	Chapter IV, Section 3(a)(i)
Wait Order Suspend Timer	5 seconds for futures and 8 seconds for options	All products	Chapter V, Section 11(d)
Acceptable Trade Range Posting Period	1 second	All products	Chapter IV, Section 9(B)
Acceptable Trade Range Configurable Iterations	5	All products	Chapter IV, Section 9(B)
Order Spread Protection BBO width threshold	$25	10 Troy ounce gold	Chapter VIII, Section 14

Exhibit M-7

Technical Specifications

NASDAQ Futures Fix 1.2

NASDAQ Futures SQF 1.1

NASDAQ Futures Fix Drop 1.3

NASDAQ Futures CTI 2.1

NASDAQ OMX | NASDAQ FUTURES

FIX Protocol

Version 1.2

Revised Nov 20, 2013

NASDAQ FUTURES FIX System

Version 1.2

1. Introduction to NASDAQ FUTURES FIX System

Overview

This document defines NASDAQ Futures implementation of the Financial Information Exchange (FIX) 4.2 protocols for the NASDAQ Futures trading system.

Users

It is assumed that the user of this manual is familiar with the FIX 4.2 protocol standard, (can be found at www.fixprotocol.org).

2. Session Information

The first message should be a logon message. No additional messages should be transmitted until NASDAQ Futures has verified the SenderCompID, and a logon is received from NASDAQ Futures.

Note: NASDAQ Futures does NOT support encryption.

ID Fields

SenderCompID sent	The SenderCompID as assigned by NASDAQ Futures. The maximum size is 4 to 6 characters.
SenderCompID returned	The SenderCompID returned within all messages is NSDQ.
TargetCompID	Your TargetCompID should always be NSDQ.

3. Cancel and Replace – Order Modification

When replacing an order the ClOrdID field must be a unique ID for the newest order in the chain of orders and the OrigClOrdID must contain the ClOrdID of the order you are trying to replace / modify.

When canceling an order the ClOrdID field must be a unique ID for the cancel request and the OrigClOrdID must contain the ClOrdID of the order you are trying to cancel.

Only Price,OrdQty,tif, order type, Account ID and AllocAccount may be changed for orders.

Any change will result in your order losing time priority with the exception of a reduction in OrdQty only.

4. FIX Message Types – Supported / Unsupported

FIX Messages - Supported by NASDAQ Futures

Administrative Messages

Standard FIX administrative messages are supported.

Incoming Messages

New Order - Single
Order Cancel Request
Order Cancel/Replace Request (a.k.a. Order Modification Request)
OrderMassCancelRequest
Participant Trade

Outgoing Messages

Execution Report
Order Cancel Reject
OrderMassCancelReport
PreTradeRiskNotification

5. Session Protocol Messages

All NASDAQ Futures comments/additions to the FIX specification are listed in BOLD in the "*Comments*" column for each message type.

If a Tag is not explicitly supported by NASDAQ Futures it will be ignored. Your message will not be rejected.

Message Header

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.2. Must be the first field in message.
9	BodyLength	Y	Must be second field in the message.
35	MsgType	Y	Must be the third field in the message.
34	MsgSeqNum	Y	
49	SenderCompID	Y	SenderCompIDas assigned by NASDAQ Futures. It will always be four to six characters.
56	TargetCompID	Y	"NSDQ"
52	SendingTime	Y	
50	SenderSubID	N	Ignored
57	TargetSubID	N	Ignored
43	PossDupFlag	N	Always required for retransmitted messages, whether prompted by the sending system or as the result of a resend request.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.
122	OrigSendingTime	N	Required for message resends. If data is not available set to same value as SendingTime.

Logon Message

Tag	Field Name	Req'd	Comments
	Standard Header	**Y**	**MsgType = A**
98	EncryptMethod	N	Not supported
108	HeartBtInt	Y	
141	ResetSeqNumFlag	N	Not supported
95	RawDataLength	N	Not supported
96	RawData	N	Not supported
	Standard Trailer	**Y**	

6. Application Messages Regarding Orders

All NASDAQ Futures comments/additions to the FIX specification are listed in BOLD in the "*Comments*" column for each message type.

If a Tag is not supported by NASDAQ Futures "Not supported" will appear in the "*Comments*" column. If you send an unsupported tag, the tag and corresponding data will be ignored. Your message will not be rejected.

New Order – Single Message

Firms who wish to electronically submit securities orders to NASDAQ Futures for execution use the new order message type.

Orders can be submitted with special handling instructions and execution instructions.

Handling instructions refer to how NASDAQ Futures should handle the order in its trading system. The HandlInst field is optional and if provided, it should always be set to 1, which indicates Automated execution order, private, no Broker intervention.

New Order messages received with a duplicate ClOrdID will be ignored, regardless if the PossResend flag is set. The New Order Message is described in the following table:

Tag	Field Name	Req'd	Comments
	Standard Header	**Y**	**MsgType = D**
11	ClOrdID	Y	Unique identifier of the order as assigned by firm. Must be 30 characters or less.
21	HandlInst	N	If provided, must be set to 1 = Automated execution order, private, no Broker intervention
55	Symbol	Y	1 - 6 character Options Root/Futures Symbol. Spaces, periods, commas not allowed.
54	Side	Y	Side of order. Valid values: 1 = Buy 2 = Sell
38	OrderQty	Y	Required. Acceptable range is 1 to 999999 however, the max may be lower as it is based on port and Pre Trade Risk settings. No commas, decimals, negative numbers or spaces allowed.
40	OrdType	Y	Valid values: 1 = Market 2 = Limit
44	Price	N	Price field is required for Limit Orders. The price can have up to 10 whole numbers and a precision of up to 8 decimals.
109	ClientID	N	Used for firm identification. The firm identifier must be a valid mnemonic assigned by the exchange and the firm must be an approved member of the exchange. If this field is not provided by the firm, the default mnemonic associated with the FIX port will be used.
76	ExecBroker	N	Special handling instruction for the order. See table below for descriptions. Valid values: POST WAIT

1	Account	Y	Must be 10 characters or less.
18	ExecInst	N	If provided, can contain only one instruction. G = All Or None (AON) - AON orders with a TIF other than IOC will be treated as IOC.
110	MinQty	N	If MinQty is specified, the TIF should be IOC(tag 59=3). If any other TIF is specified, it will be treated as IOC.
59	TimeInForce	N	Specifies how long the order remains in effect. Absence of this field is interpreted as Immediate or Cancel. Valid values: 0 = Market Hours (DAY) 1 = Good Till Cancel (GTC) 3 = Immediate or Cancel (IOC) 4 = Fill Or Kill
47	OCCClearingAccount		Required if ParticipantCode (Tag 6299) is not provided. This is the OCC clearing account type. Please refer to NASDAQ Futures Rules and section 9 below for more information C = customer order F = firm order M = NASDAQ Futures registered market maker order
58	Text	N	Firms can use this field in the order message to supply optional clearing information that is sent to OCC as supplementary data. If field is supplied, NASDAQ Futures will allow only 13 characters.
77	OpenClose	Y	O = opening position C = closing position
167	SecurityType	Y	Valid values: Futures = 'FUT' Options = 'OPT'
541	MaturityDate	Y	Month, Day and Year of the maturity. Format YYYYMMDD (e.g., 20150918 to represent Sept 18, 2015)
201	PutOrCall	N	0 = put 1 = call Required for 'SecurityType' = OPT'
202	StrikePrice	N	Strike Price for option: Valid values: 0 – 999999.99999999 Required for 'SecurityType' = OPT'
440	ClearingAccount	N	Up to 5-character alphanumeric. If tag is not supplied, spaces will be used. This field is passed through to the OCC sub-account/multi-account field. **Note:** NASDAQ Futures will forward only left most 4 characters to OCC.
439	ClearingFirm	N	CMTA Number (firm that will clear the trade) upto 5-character numeric. If tag not supplied, this order will not be a CMTA.
79	AllocAccount	N	Exchange Internal Firm Identifier of the Directed Participant for Directed Order Flow; should not exceed 4 characters.
6299	ParticipantCode	N	The internal Participant Code. Please refer to NASDAQ Futures Rules and section 9 below for more information Valid values: A,B,C,D,E,F,G,H,I

582	CustOrderCapacity	N	Required if ParticipantCode (Tag 6299) is not provided. This is Customer Type Indicator (CTI) code. Please refer to NASDAQ Futures Rules and section 9 below for more information Valid values: 1, 2, 3, 4
5256	AccountOriginType	N	Required if ParticipantCode (Tag 6299) is not provided. Segregated or non-segregated origin types. Please refer to NASDAQ Futures Rules and section 9 below for more information Valid values: 1, 2
6606	TraderID	Y	Trader ID Maximum length = 8
	Standard Trailer	**Y**	

NASDAQ Futures Special Handling Instructions (Tag 76 – Exec Broker)	
Valid Tag 76 Values	**Description**
POST	Post Only
WAIT	Delayed order submission to the match engine based on NASDAQ Futures order exposure rules.

Order Cancel Request Message

The Order Cancel Request Message requests the cancellation of all remaining quantity of an existing order. The request will only be accepted if the order can successfully be pulled back from the exchange trading system without executing.

Do not use this message to partially cancel (reduce) an order. The ***Order Cancel/Replace Request*** should be used to partially cancel (reduce) an order.

A cancel request is assigned a ClOrdID by the firm and is treated as a separate entity. If rejected, the ClOrdID of the cancel request will be sent in the Cancel Reject message, as well as the ClOrdID of the actual order in the OrigClOrdID field. The ClOrdID assigned to the cancel request must be unique amongst the ClOrdID assigned to regular orders and replacement orders.

The format of the cancel request message is shown in the following table:

Tag	Field Name	Req'd	Comments
	Standard Header	**Y**	**MsgType = F**
41	OrigClOrdID	Y	ClOrdID of the original order to cancel, as assigned by the originating participant (Firm). Must be 30 characters or less.
11	ClOrdID	Y	Unique ID of cancel request as assigned by the firm. Must be 30 characters or less.
55	Symbol	Y	1 - 6 character Options Root/Futures Symbol. Spaces, periods, commas not allowed.
54	Side	Y	Side of order - Valid values: 1 = Buy 2 = Sell
38	OrderQty	Y	OrderQty to be cancelled.
37	OrderID	N	Unique identifier of most recent order as assigned by NASDAQ Futures.
109	ClientID	N	Used for firm identification. The firm identifier must be a valid mnemonic assigned by the exchange and the firm must be an approved member of the exchange. If this field is not provided by the firm, the default mnemonic associated with the FIX port will be used.
167	SecurityType	Y	Valid Values: Futures = 'FUT' Options = 'OPT'
541	MaturityDate	Y	Month, Day and Year of the maturity. Format YYYYMMDD (e.g., 20150918 to represent Sept 18, 2015)
201	PutOrCall	N	0 = put 1 = call Required for 'SecurityType' = OPT'
202	StrikePrice	N	Strike Price for option: Valid values: 0 - 99999999.9999 Required for 'SecurityType' = OPT'
	Standard Trailer	**Y**	

Order Cancel/Replace Request
(a.k.a. Order Modification Request)

The Order Modification Request is used to change the parameters of an existing order.

Do not use this message to cancel the remaining quantity of an outstanding order. The ***Order Cancel Request*** message should be used to cancel the remaining quantity of an outstanding order.

The Order Modification request will only be accepted if the order can successfully be pulled back from the exchange trading system without fully executing. Requests that cannot be processed will be rejected using the Cancel Reject message. The Cancel Reject message will provide the ClOrdID and OrigClOrdID values that were specified on the Order Modification Request message for identification.

Note that while it is necessary for the ClOrdID to change and be unique, the OrderID field assigned by NASDAQ Futures does not necessarily have to change as a result of the Order Modification request.

Only price, quantity, tif, order type, Account ID and AllocAccount can be changed via the cancel/replace request message. All other fields should be retransmitted as sent in the original order.
Following changes are allowed for tif.

- DAY to GTC or IOC
- GTC to DAY or IOC

The Participant code for the original order is carried over to the replacement.
The Order Modification Request Message is described in the following table:

Tag	Field Name	Req'd	Comments
	Standard Header	**Y**	**MsgType = G**
41	OrigClOrdID	Y	ClOrdID of the original order to cancel, as assigned by the originating participant (Firm). Must be 30 characters or less.
11	ClOrdID	Y	Unique identifier of replacement order as assigned by firm. Note that this identifier will be used in ClOrdID field of the Cancel Reject Message if the replacement request is rejected. Must be 30 characters or less.
21	HandlInst	N	If provided, must be set to: 1 = Automated execution order, private, no Broker intervention
55	Symbol	Y	1 - 6 character Options Root/Futures Symbol. Spaces, periods, commas not allowed.
54	Side	Y	Side of order - Valid values: 1 = Buy 2 = Sell Must match original side.
38	OrderQty	Y	OrderQty of the replace order.
40	OrdType	Y	Valid values: 1 = Market 2 = Limit
44	Price	Y	Price field is required for Limit Orders. The price can have up to 10 whole numbers and a precision of up to 8 decimals.
37	OrderID	N	Unique identifier of most recent order as assigned by NASDAQ Futures.

109	ClientID	N	Used for firm identification. The firm identifier must be a valid mnemonic assigned by the exchange and the firm must be an approved member of the exchange. If this field is not provided by the firm, the default mnemonic associated with the FIX port will be used.
59	TimeInForce	N	If not provided, the time in force of the original order carries through to all replacements. Following changes in TIF are allowed. DAY to GTC or IOC GTC to DAY or IOC
1	Account	Y	Must be 10 characters or less
167	SecurityType	Y	Valid value = 'FUT' or 'OPT'
541	MaturityDate	Y	Month, Day and Year of the maturity. Format YYYYMMDD (e.g., 20150918 to represent Sept 18, 2015)
201	PutOrCall	N	0 = put 1 = call Required for 'SecurityType' = OPT'
202	StrikePrice	N	Strike Price for opttion: Valid values: 0 - 999999.99999999 Required for 'SecurityType' = OPT'
79	AllocAccount	N	Exchange Internal Firm Identifier of the Directed Participant for Directed Order Flow; should not exceed 4 characters.
6606	TraderID	Y	Trader ID Maximum length = 8 Must match original.
	Standard Trailer	**Y**	

Participant Trade

Participants can report matched trades to NASDAQ Futures that were negotiated and agreed upon away from the exchange (e.g. over the phone or through a different system).

The two types of trades that can be reported are Block and EFRP. Both Block and EFRP trades may contain a "late" indicator for instances when the reporting party could not report them at the time of the transaction.

The response to this message will be in the form of execution reports on the individual orders.

Tag	FieldName	Reqd	Description
	Standard Header	**Y**	**MsgType =T**
55	Symbol	Y	1 - 6 character Options Root/Futures Symbol. Spaces, periods, commas not allowed.
541	MaturityDate	Y	Month, Day and Year of the maturity. Format YYYYMMDD (e.g., 20150918 to represent Sept 18, 2015)
167	SecurityType	Y	Valid value = 'FUT' or 'OPT'
201	PutOrCall	N	0 = put 1 = call Required for 'SecurityType' = OPT'
202	StrikePrice	N	Strike Price for option: Valid values: 0 - 999999.99999999 Required for 'SecurityType' = OPT'
44	Price	Y	Trade price. The price can have up to 10 whole numbers and a precision of up to 8 decimals.
38	OrderQty	Y	Number of contracts traded
60	TransacationTime	Y	Time trade was completed by firm (expressed in UTC).
5053	TradeType	Y	Type of Trade: B = Block P = Exchange For Physical R = Exchange For Risk O = Exchange of Options for Options
75	TradeDate	Y	Date trade occurred (usually today's date).
73	NoOrders	Y	Number of orders in the list of side follows. Valid value: '2'
→ 67	ListSeqNo	Y	Order Number within the list. This number must be unique within a given order list message, but may be reused in other order list messages.
→ 11	ClOrdID	Y	Unique identifier of the order as assigned by firm. Must be 30 characters or less.
→ 109	ClientID	Y	Used for firm identification. The firm identifier must be a valid mnemonic assigned by the exchange and the firm must be an approved member of the exchange. If this field is not provided by the firm, the default mnemonic associated with the FIX port will be used.

→	6606	TraderID	Y	Trader ID Maximum length = 8
→	54	Side	Y	Side of order. Valid values: 1 = Buy 2 = Sell
→	1	Account	Y	Must be 10 characters or less.
	77	OpenClose	Y	O = opening position C = closing position
→	47	OCCClearingAccount	N	Required if ParticipantCode (Tag 6299) is not provided. This is the OCC clearing account type. Please refer to NASDAQ Futures Rules and section 9 below for more information C = Customer order F = Firm order M = NASDAQ Futures registered market maker order
→	440	ClearingAccount	N	Up to 5-character alphanumeric. If tag is not supplied, spaces will be used. This field is passed through to the OCC sub-account/multi-account field. **Note:** NASDAQ Futures will forward only left most 4 characters to OCC.
→	439	ClearingFirm	N	CMTA Number (firm that will clear the trade) up to 5-character numeric. If tag not supplied, this order will not be a CMTA.
→	5256	AccoutOrigin	N	Required if ParticipantCode (Tag 6299) is not provided. Segregated or non-segregated origin types. Please refer to NASDAQ Futures Rules and section 9 below for more information Valid values: 1, 2
→	582	CustomerOrderCapacity	N	Required if ParticipantCode (Tag 6299) is not provided. This is Customer Type Indicator (CTI) code. Please refer to NASDAQ Futures Rules and section 9 below for more information Valid values: 1, 2, 3, 4
→	6299	ParticipantCode	N	The internal Participant Code. Please refer to NASDAQ Futures Rules and section 9 below for more information Valid values: A,B,C,D,E,F,G,H,I
→	58	Text	N	Firms can use this field in the order message to supply Optional clearing information that is sent to OCC as supplementary data. If field is supplied, NASDAQ Futures will allow only 13 characters and use it for supplementary information in the order.
		Standard Trailer	**Y**	

Execution Report

The execution report message is used to:

1. Confirm the receipt of an order
2. Confirm changes to an existing order (i.e. accept cancel and replace requests)
3. Confirm Participant Trade reports
4. Relay order status information
5. Relay fill information on working orders
6. Reject orders

Each execution message will contain information that will describe the current state of the order and execution status as understood by NASDAQ Futures. State changes will be sent as separate messages and will not be used to also convey new partial fill details:

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = 8
37	OrderID	Y	OrderID, as assigned by NASDAQ Futures, is required to be unique for each chain of orders.
70	AllocId	N	Unique identifier of the transaction that caused the execution. Will be 0 if not available
17	ExecID	Y	Unique identifier of execution message, such as a Trade ID, as assigned by NASDAQ Futures. Uniqueness is guaranteed within a single trading day for a given Firm Mnemonic. Receiving Firms should treat it as a free-form string. Assigned IDs should not exceed 36 characters.
20	ExecTransType	Y	Identifies transaction type Valid values: 0 = New 1 = Cancel 3 = Status (OrdStatus=3(Done For Day))
76	ExecBroker	N	Exec Broker associated with the order as specified in order entry. See table for possible values
150	ExecType	Y	Describes the type of execution report. Valid Values: 0 = New 1 = Partial Fill 2= Filled 3 = Done for day 4 = Canceled 5 = Replaced 6 = Pending Cancel 8 = Rejected E = Pending Replace F= Replace Rejected

39	OrdStatus	Y	Describes the current state of a CHAIN of orders, same scope as OrderQty, CumQty, LeavesQty, and AvgPx Valid Values: 0 = New 1 = Partial Fill 2 = Filled 3 = Done for day 4 = Canceled 5 = Replaced 6 = Pending Cancel 8 = Rejected
55	Symbol	Y	1 - 6 character Options Root Symbol. Spaces, periods, commas not allowed.
54	Side	Y	Side of the order
38	OrderQty	Y	The number of contracts.
32	LastShares	Y	Number of contracts bought/sold on this (last) fill. Should be "0" for non-fills (Note: "fill" defined as ExecTransType = New and ExecType = Partial Fill or Fill).
31	LastPx	Y	Price of this (last) fill. Should be "0" for non-fills (Note: "fill" defined as ExecTransType = New and ExecType = Partial Fill or Fill).
151	LeavesQty	Y	Amount of contracts open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.
14	CumQty	Y	Currently executed contracts for chain of orders.
1	Account	N	As specified in the NewOrder
11	ClOrdID	N	As specified in the NewOrder
44	Price	N	As specified in the NewOrder
41	OrigClOrdID	N	Required if this is in response to an Order Cancel Request or Order Cancel/Replace request (ExecType = PendingCancel, Replaced or Cancelled). ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
109	ClientID	Y	Used for firm identification in third-party transactions. If a ClientID was specified in the original order then it will be returned in all subsequent execution reports. If the clientId was not specified in the original order, this will refer to the clientId assigned by the port of order entry
18	ExecInst	N	G = All Or None (AON)
75	TradeDate	N	Trade date as specified in Participant Trade message.
59	TimeInForce	N	Absence of this field indicates Immediate or Cancel order
40	OrdType	N	Valid values: 1 = Market 2 = Limit
60	TransactTime	N	Time of execution/order creation (expressed in UTC).
47	OCCOrderCapacity	N	Capacity (C, F, M) from original order.
58	Text	N	Free format text string,

9882	LiquidityFlag	N	Will be returned within all execution reports that contain a partial or full fill. See Liquidity Flags Table below for values
77	OpenClose	Y	O = opening position C = closing position'
167	SecurityType	Y	Valid value = 'FUT' or 'OPT'
541	MaturityDate	Y	Month, Day and Year of the maturity. Format YYYYMMDD (e.g., 20150918 to represent Sept 18, 2015) This will not be present If ExecType = 8 - Rejected
201	PutOrCall	N	0 = put 1 = call Present for 'SecurityType' = OPT'
202	StrikePrice	N	Strike Price for option: Valid values: 0 - 999999.99999999 Present for 'SecurityType' = OPT'
440	ClearingAccount	N	Up to 5-character alphanumeric.
439	ClearingFirm	N	CMTA Number (firm that will clear the trade) upto 5-character numeric. If this tag was supplied on order entry, it will be passed along here
6299	ParticipantCode	N	Participant Code from original order. Valid values: A,B,C,D,E,F,G,H,I As specified in the NewOrder
582	CustOrderCapacity	N	CustOrderCapacity (CTI code) from original order.
5256	AccountOriginType	N	Segregated or non-segregated origin type from original order. Valid values: 1, 2
1	Account	N	Account of the firm. Maximum length = 10 As specified in the NewOrder
6606	TraderID	Y	Trader ID Maximum length = 8
	Standard Trailer	**Y**	

Liquidity Flags	
Flag	***Value***
A	Executed on NASDAQ Futures- Added Liquidity (maker)
R	Executed on NASDAQ Futures- Removed Liquidity (taker)
B	Block trade reported to NASDAQ Futures
E	EFRP trade reported to NASDAQ Futures

Order Cancel Reject

The order cancel reject message is issued by NASDAQ Futures upon receipt of a Cancel Request or Cancel/Replace Request Message that cannot be honored.

The format of the Order Cancel Reject Message is as follows

Tag	Field Name	Req'd	Comments
	Standard Header	**Y**	**MsgType = 9**
37	OrderID	Y	If the cancel reject is for an unknown order this field will contain the text "Unknown". Otherwise, it will contain the OrderID of the last order in the chain of orders.
11	ClOrdID	Y	Unique order id assigned by broker to the cancel request or to the replacement order.
41	OrigClOrdID	Y	ClOrdID that could not be canceled/replaced. ClOrdID of the previous order (NOT the initial order of the day) when canceling or replacing an order.
39	OrdStatus	Y	OrdStatus value after this cancel reject is applied.
102	CxlRejReason	N	Code to identify reason for cancel rejection. Valid values: 0 = Too late to cancel 1 = Unknown order 2 = Broker Option (Used for unidentified business reasons.) 3 = Order already in Pending Cancel status
58	Text	N	See "Rejected Cancel Reasons" in section 7
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
	Standard Trailer	**Y**	

Purge/Reset Request from Firm

A firm can send a purge request to purge all its orders. Firm also need to send a Reset request before sending new order if it receives a RapidFire Notification from the exchange.

Tag	Name	Required	Description
	Standard Header	**Y**	MsgType = q (OrderMassCancelRequest)
109	ClientID	N	If provided, must be a valid NASDAQ Futures MPID/Firm Mnemonic. If not provided Port' default MPID/Firm Mnemonic will be used
11	ClOrderID	Y	Unique ID of Purge/Reset Request as assigned by the firm. Must be unique for the trading session.
311	IssueSymbol	N	IssueSymbol to purge or reset. Absence of this tag implies that the request is at a firm level and all orders associated with the ClientID on the request will be purged.
530	RequestType	Y	Purge/Reset Type. Valid Values Are: 8 – Reset 2 – Purge
6606	TraderID	Y	Trader ID Maximum length = 8

RapidFire Notification, Purge/Reset Response

NASDAQ Futures will use this message to notify firms when Rapid Fire Risk Protection is triggered in an underlying if the firm is configured for risk protection on the exchange trading system. Also, this message will be used to respond to any purge or Underlying Reset request received from the firm.

Tag	Name	Required	Description
	Standard Header	**Y**	MsgType = r (OrderMassCancelReport)
109	ClientID	Y	NASDAQ Futures Firm mnemonic
37	OrderID	Y	Exchange assigned unique Identifier of the notification for the trading session. It will be blank if tag 531 is 0 (request is rejected).
11	ClOrderID	N	Present if this is a response to a purge or reset request from the firm.
530	RequestType	N	Present if this is a response to Firm's Purge or Reset Request. Valid Values are: 8 – Reset 2 – Purge
531	Response	Y	0 – Purge/Reset Request Rejected. Tag 532 contains more information. 7 - Purge by another port (FIX/ /SQFor system support) 8 – Purge/Reset Request Successful. 9 – RapidFire Notification
532	RejectReason	N	Present if tag 531 is 0. Valid Values are: 0 = Feature Not Supported 'S' = Invalid symbol 'F' = Invalid Firm 'H' = Invalid Trader Id 6 = Invalid Client order Id 2 = Invalid Mass Cancel type 7 = Firm not enabled for Risk protection
311	IssueSymbol	N	IssueSymbol that is purged/reset or rapid fired. Absense of this tag implies that the response/notification is at a firm level.
6606	TraderID	N	Trader ID Maximum length = 8
58	Text	N	Provides additional information about this message.
	Standard Trailer	**Y**	

Pre Trade Risk Notification

NASDAQ Futures will use this message to notify firms when any activity for the Group ID/ Trader ID/ Firm reaches the defined thresholds. This message is used to send the warning as well as cutoff notifications.

Tag	Name	Required	Description
	Standard Header	**Y**	MsgType =CB(PreTradeRiskNotification)
6558	RiskIdType	Y	F= Firm T= Trader G = Group
5387	RiskId	Y	Firm/ Trader Id/ Group Name
9106	RiskStatus	Y	0 = Reset 1 = 70% (Warning Notification) 2 = 80% (Warning Notification) 3 = 90% (Warning Notification) 4 = 100% (Cuttoff Notification)
5500	RiskRule	Y	The rule that triggered this notification. B = Max open exposure C = Max execution exposure D = Max total open value E = Max total executed value
5501	TriggerValue	Y	Threshold dollar value
	Standard Trailer	**Y**	

7. Order Reject/Cancel Reasons

The FIX Text field, tag 58, will be returned within all order reject and cancel messages (msgType=8) and will contain a description of the reject or cancel.

Rejected Order Reasons

Text=<Error String>	Description.
"UNABLE TO ACCEPT ORDER"	System issues.
"INVALID TIME FOR ACCEPTANCE"	Outside of trading hours
"NOT OPEN FOR TRADING"	Product is not open for trading
"UNACCEPTABLE VOLUME"	Incorrect order volume
"INVALID LIMIT PRICE"	Invalid price
"LIMIT TOO DEEP"	Reference price is out of bounds
"INVALID CLEARING"	Invalid clearing
"IN TRADING HALT"	Product is in trading halt
"REQUIRED TAG MISSING"	Required tag not present
"INVALID FIRM"	Invalid firm
"INVALID TRADER"	Invalid trader
"INVALID PARTICIPANT"	Invalid participant code
"INVALID BUY/SELL"	Invalid product buy/ sell
"INVALID KIND"	Invalid product put/ call
"INVALID EXPIRATION"	Invalid product expiration
"INVALID STRIKE PRICE"	Invalid product strike price
"INVALID SYMBOL"	Invalid product
"INVALID ORDER TYPE"	Invalid order type
"INVALID OPEN/CLOSE"	Invalid open close indicator
"INVALID TIME IN FORCE"	Invalid order TIF
"INVALID EXEC BROKER"	Invalid exec broker
"FEATURE NOT SUPPORTED"	Feature not supported
"INVALID SECURITY TYPE"	Invalid product security type
"INVALID CUSTOMER ID ACCOUNT"	Invalid customer id
"INVALID CL ORD ID"	Invalid client order id
"INVALID ORIG CL ORD ID"	Invalid original client order id
"INVALID DIRECTED ACCOUNT"	Invalid directed account
"INVALID EXEC INST"	Invaid execution instruection
"INVALID NUM ORDERS"	Invalid number of orders in the list
"INVALID MIN QUANTITY"	Invalid min quantity specified
"INVALID MASS CANCEL TYPE"	Invalid mass cancel type
"RISK PROTECTION RESET REQUIRED"	Reset needed
"PRE TRADE RISK REJECT"	Pre trade risk reject

Cancel RejectReason

The FIX Text field, tag 58, will be returned within all cancel reject messages (msgType=9) and will contain a description of the reject or cancel

Text=<Error String>	Description.
"TARGET ORDER NOT FOUND"	Target order not found
"ORDER ALREADY FILLED"	Order already filled
"ORDER ALREADY CANCELLED"	Order already cancelled
"CANCEL BUY/SL DOESN'T MATCH"	Side does not match on Cancel
"CANCEL SYMBOLS DO NOT MATCH"	Symbol does not match on cancel
"CANT REPLACE SYMBOL"	Cannot replace symbol
"TOO LATE TO CANCEL"	Too late to cancel the order
"BAD LEAVES ON CANCEL"	Invalid leaves on the replace
"REQUIRED TAG MISSING"	Required tag not present
"CLEARING MISMATCH"	Clearing mismatch on replace
"IOC CANCEL"	Immediate ir Cancel order
"USER CANCEL"	User requested cancel
"PRODUCT HALTED"	This order was cancelled due to a trading halt in this product

9. Participant, CTI, Origin, and OCC account type codes

NASDAQ Futures Participants are required to either a) enter a ParticipantCode on each order that represents a particular combination of CTI, Account Origin, and OCC Clearing Account Type codes, or b) enter each CTI, Origin, and OCC Clearing Account Type code explicitly on each order.

The FIX values representing the code combinations are listed below. All other code combinations are invalid. Orders received with invalid combinations will be rejected.

Valid CTI Code, Origin, OCC Account type combinations:

Participant Code	CTI Code	Origin Code	OCC C/F/M	Description
A	1	1	M	Transactions initiated and executed by an individual Member for his own account, for an account he controls or for an account in which he has ownership or financial interest; Segregated Funds
B	1	2	M	Transactions initiated and executed by an individual Member for his own account, for an account he controls or for an account in which he has ownership or financial interest; Non-Segregated Funds
C	2	1	M	Transactions executed for the proprietary account of an NASDAQ Futures Member; Segregated Funds
D	2	2	M	Transactions executed for the proprietary account of an NASDAQ Futures Member; Non-Segregated Funds
E	2	1	F	Transactions executed for the proprietary account of an NASDAQ Futures Member Firm; Segregated Funds
F	2	2	F	Transactions executed for the proprietary account of an NASDAQ Futures Member Firm; Non-Segregated Funds
G	3	1	M	Transactions where an individual Member executes for the personal account of another individual Member, for an account the other individual Member controls or for an account in which the other individual Member has ownership or financial interest; Segregated Funds
H	3	2	M	Transactions where an individual Member executes for the personal account of another individual Member, for an account the other individual Member controls or for an account in which the other individual Member has ownership or financial interest; Non-Segregated Funds
I	4	1	C	Transactions not meeting the definition of CTI 1, 2 or 3. (These should be non-Member customer transactions.) Segregated Funds

10. Revision History

Revision #	Date	Change
1	5/13/2013	Initial release
1.1	7/19/2013	Added the following tags to the Execution Report message: 70, 76, 109, 440, 439 Updated Pre Trade Risk Notification
1.2	11/20/2013	Updated Pre Trade Risk Notification Message Type

NASDAQ OMX Futures

Specialized Quote Interface

Version 1.1

July 19, 2013

Table of Contents

1 Overview

Specialized Quote Interface (SQF) provides a low latency, high throughput mechanism for streaming quoters to enter their markets into NASDAQ OMX FUTURES.

SQF features the following data elements:

- Low latency, high throughput, robust streaming quote interface.
  - Low Latency
    - The quote interface server is directly on matching engine infrastructure
    - Smaller bandwidth profile by making use of
      - Binary Data
      - Product ID vs. specifying full canonical symbology
  - High Throughput
    - The firms can have multiple connections for increased quoting throughput
    - Bulk quoting
      - Quoting of up to 200 quotes per quote block message.
  - Robust features
    - Enhanced Determinism
      - Quote acknowledgement = Quote is processed by matching engine! Each Quote Acknowledgement provides exact sequence of the quote from the matching engine.
    - Rapid Fire Risk Protection
      - Purging of quotes for a given issue based on firm specified execution parameters
    - Purging on Disconnect
      - Purging of quotes when a port disconnects
    - Purging of quotes by specifying the
      - Firm (or badge)
      - Issue
      - Trading symbol
    - SQF Order mechanisms
      - One sided IOC Order
      - Used to hit a market

- Purge Notification messages, for reporting purges on issues quoted on this interface.
- Pre trade Risk Notification and Reject messages
  - Warnings: indicating that a cutoff limit is being approached, but has not been reached.
  - Cutoffs: indicating that a cutoff limit has been reached. All quotes/orders are purged/canceled at this point and no new quotes or orders are accepted.
  - Preemptive Pre Trade Risk Reject messages: indicating that a message was rejected to prevent a Pre trade risk cutoff limit from being breached.
  - Cutoff Pre Trade Risk Reject messages: indicating that a message was rejected because there is a pre trade risk cutoff in effect for the firm, trader or a group (either firm or trader) related to the message.
- Quote/Order Execution and Order Cancellation Notification messages, for reporting executions and cancels on quotes and order requests sent on this interface. See "Processing Hints and Tips" section for more details.
- Administrative and market event messages including:
  - Trading action messages to inform market participants when a specific product is halted or released for trading.
  - Trading Product Directory messages to relay basic symbol information for traded products.

2 Architecture

The NASDAQ OMX FUTURES trading infrastructures may consist of multiple matching engines. Each engine trades a subset of the issues trading at the exchange.

The SQF infrastructure is such that the firms connect to one or more servers residing directly on the matching engine infrastructure. Any given port can trade all symbols on NASDAQ OMX FUTURES.

The advantage to connecting directly to the engine's infrastructure is one of reduced latency for quote and order updates. Additionally, the receipt of any given quote or order acknowledgement means the corresponding request is live in the matching engine.

Upon disconnect, each line will immediately purge all issue/firm combinations with trading products quoted on that line. For more information, refer to "Purge on Disconnect" description in Processing Hints & Tips section.

The Specialized Quote Interface uses the in the following communication protocol:

Protocol Option	
SoupBinTCP Version 4.00	TCP Interface

* Please note that firms are encouraged to provide local redundancy in the NY Metro Area, while using the Mid-Atlantic Region for disaster recovery in the event NASDAQ OMX FUTURES order entry is switched from the NY Metro Area.

3 Data Types

All integer fields are unsigned big-endian (network byte order) binary encoded numbers. Note that integers may be one, two, four or eight bytes in length. The size is specified for each message field.

All alphanumeric fields are left justified and padded on the right with spaces

Prices are 8 byte integer fields. When converted to a decimal format, prices are in fixed point format with 10 whole number places followed by 8 decimal digits. Sub-MPV prices are rejected.

Message Id, Quote Id and Execution Id fields are binary. There is no restriction on the content of these fields.

Timestamp reflects the system time at which various events occur. For every message, the timestamp is expressed in two fields: "Seconds", which is the number of whole seconds after midnight of the day that the message is sent; and "Nanoseconds", which is the sub-second portion of the time which represents the integer number of nanoseconds. The "Seconds" field will have a range of 0 to 86399 (i.e. 12:00:00am to 11:59:59pm) and "Nanoseconds" will have a range of 0 to 999999999. All times in this protocol are U.S. Eastern Time zone.

4 Messaging

Message Delivery

Some messages sent from the SQF interface host to the client are assumed to be sequenced and their delivery must be guaranteed by the lower level Soup protocol. An example of this is an execution notification. The SoupBinTCP is the typical lower level protocol used to guarantee the delivery and sequencing of SQF messages sent from the SQF interface host to the client. Details on requesting a resend of sequenced messages can be found in the SOUP specification. Appendix A summarizes which host to client messages are sequenced vs. unsequenced.

Some other messages sent from the SQF interface host are considered to be of short term value and are therefore unsequenced. Delivery of unsequenced messages is not guaranteed. Quote Message Responses are an example of an unsequenced message.

All message transmissions originating from NASDAQ OMX FUTURES via SQF have their sequences/unsequenced identification notes within this specification.

Messages sent from the client to the SQF interface host are inherently non-guaranteed even if they are carried by a lower level protocol that guarantees delivery (like TCP/IP sockets). Therefore, all host-bound messages are designed so that they can be benignly resent for robust recovery from connection and application failures.

5 Processing Hints & Tips

Determining when a Quote is processed by the Matching Engine
Upon receipt of a quote response message for a given quote block, all of the firm's quotes for that block have been processed by the matching engine (assuming that the quote was sent after receipt of the "Start of Quote" System Event Message). In addition, the order in which the matching engine processed individual quotes can be determined by the sequence number provided for each quote in the acknowledgement response.

Determining when a Purge takes Quotes out of Play
Upon receipt of a purge response message for a given purge, the firm's quotes are guaranteed to be out of the market. The firm can use sequence number as well to determine sequencing of purges in relation to quotes.

Determining when an Order is processed by the Matching Engine
Upon receipt of an order accept message for a given order request, the firm's order is guaranteed to be processed by the matching engine. An order must specify an order id that is unique with respect to any currently open order on the receiving port.

Maximizing Throughput
Quote block messages can contain up to 200 quotes. Densely packing quotes in each quote block increases throughput. However, firms must be aware that there is an inherent trade-off in terms of cost to latency. That is, when densely packaging quotes in a quote block message, processing the block will take longer than processing a less densely packaged quote block. The firms must manage this dynamic to their own preference.

Minimizing Latency
Firms should take advantage of the synchronous nature of the SQF protocol and, while waiting for a quote response from NASDAQ OMX FUTURES, overwrite older quotes in their system waiting to be sent as firm/symbol pairs are repriced. In this way, when the quote response is received from NASDAQ OMX FUTURES, the most recent quotes for each firm/symbol pair can be sent.

Avoiding Queuing
SQF is strictly one-in-flight protocol on a given port. As a best practice, after submitting any request on a given port, regardless of the participant firm to the NASDAQ OMX FUTURES system, the client should wait for the arrival of either ACCEPT or REJECT response. Arrival of the ACCEPT/REJECT message indicates that the next request can be submitted. Not adhering to this practice can lead to unintentional queuing in the TCP stack.

Avoiding Timing Issues/Race Conditions
Firms may load balance firm/symbol combinations across multiple ports. However, they should wait until either an ACCEPT or REJECT response is received for a given firm/symbol combination quote or purge in order to avoid race conditions for subsequent quote blocks.

Trading Symbol Reentry
Whenever a Quote for a firm/symbol combination is purged, the firm must send a reentry message to the exchange for either the specific trading symbol that was purged or for the entire Firm/Issue pair or for the entire Firm before any further quotes will be accepted for the firm/symbol combination. Quotes can be purged in several ways:

- by the firm entering a 0 x 0 quote
- by the firm sending a purge request (Issue Purge Message)
- by the system. In this case the firm will receive an Trading Symbol Purge Notification (Future or Option) or Issue Purge Notification message (Issue)

Given the scenario when the firm sends a Quote unaware of the previous Quote having been purged on the system (the Purge Notification sent by NASDAQ OMX FUTURES is in flight to the firm and not yet received), the sent Quote will be rejected with "Quote Status Code" set to "I" (reentry required). In this case the firm will receive the notification and rejected quote, will be aware of the scenario, and can take appropriate action, such as sending a Trading Symbol or Issue or Firm Reentry message.

Firm
A firm identifies a participant in the book.

Trader ID
A firm must indicate the identity of the submitting trader within their firm when any order or quote related message is submitted. The set of valid trader ids for a given firm must be coordinated with member services.

Participant Type
A firm must indicate the participant type in each quote and order request. This value is specified using a code specified in the first column of the table in Appendix B.

Account
A firm must supply a clientAccount with each quote and each order submitted. This field is left justified, alphanumeric, padded withs spaces on the right. This field must contain at least 1 (and up to 10) nonspace alphanumeric characters. This account is passed on to the clearing authority and to the user on any user drops and clearing feeds.

Purge on Disconnect
As soon as a port disconnect is detected all firm / issue combinations that have sent quotes or orders on the affected port since the start of session are immediately purged from all ports unless there were no quotes received on the affected port since last connect. In other words, if a port disconnects, all issues related to firm/trading-symbol combinations that have been sent on the disconnected port in that session will be purged from all ports in which they are present.

Order Outs (Cancels)
Outs for SQF orders are always returned.

Order and Quote Executions
Executions for SQF orders are always returned. Notification of Executions from Quotes is a subscription option.

Notification Ports
The SQF connection (port) can be configured as a "Notification Port". A Notification Port is an SQF Port which can receive notification messages, in particular: Purge Notifications and Execution Notifications are sent to SQF lines configured as Notification Ports. Notification ports can concurrently be used for sending quotes as well.

Purge-only Ports
An SQF connection (port) can be configured as a "Purge-only" port. Purge-only port allows entry of issue-level and firm level purges only. Requests of any other type cause Purge-only port to immediately terminate its connection. Purge-only port responds to issue-level and firm-level purges with the usual responses specified by the SQF protocol. No notifications are disseminated on Purge-only ports. Issue-level and firm-level purge requests received by Purge-only ports are handled by the system in a way that ensures minimum possible latency.

Symbol Information before 7am

Firms are encouraged to receive symbol information for their use by processing Directory Messages. In the event the firm needs this information before "Start of System Hours" (approximately 7:00am); this information may be obtained from the NASDAQ Trader Website.

Release Management
The SQF specification version updates will be conducted such that it remains backward compatible on a Version - n basis. The number of backward compatible releases will be determined by the exchange on a release by release basis.

6 Message Format Guidelines

All messages described below have byte sizes and offsets.

The Specialized Quote Interface will support these basic types of messages:

- System Events
- Administrative Data
- Quote and Order submissions
- Notification information

Within the system event, administrative and notification types, the exchange may support multiple message formats as outlined below.

7 Administrative Messages

All administrative notification messages are optional. It is possible to configure an SQF port to deliver only certain types of administrative messages.

7.1 System Event Message

The system event message type is used to signal a market or data feed handler event. The format is as follows:

System Event Message

Name	Offset	Length	Value	Notes
Message Type	0	2	Alpha	"AS" = System Event Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Event Code	10	1	Alpha	Refer to System Event Codes below
Version	11	1	Integer	Version of the SQF Quote Interface. Currently set to 1.
Sub-version	12	1	Integer	Sub-version of the SQF Quote Interface. Currently set to 0.

Notes:

1) This is a sequenced message and therefore can be replayed upon re-connection.

System Event Codes

Code	Explanation	When (typically)
"O"	*Start of Messages.* This is always the first message sent in any trading day.	After ~6:00am
"S"	*Start of System Hours.* This message indicates that NASDAQ OMX FUTURES is open.	~7:00am
"E"	*End of System Hours.* This message indicates that NASDAQ OMX FUTURES is now closed.	~5:30pm
"C"	*End of Messages.* This is always the last message sent in any trading day.	~5:35pm

7.2 Trading Product Directory Message

At the start of each trading day, the system disseminates directory messages for all symbols trading on the system.

7.2.1 Directory Message

Option Directory

Name	Offset	Length	Value	Notes
Message Type	0	2	Alpha	"AD" = Trading Symbol Directory Message

Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Product Type	10	1	Alpha	"O" = Option, "F" = Future
Product ID	11	4	Integer	Product ID assigned daily, valid for the trading day. Unique only when combined with product type.
Symbol	15	6	Alphanumeric	Futures: Assigned Futures symbol (e.g. NAUZ3). Options: Underlying symbol for the option contract. This will be the symbol the options contract is based on (normally the Futures symbol, but may differ if it is not a regular-settlement/regular-deliverable).
Expiration Date	21	4	Integer	Option Expiration or Future maturity date in CCYYMMDD format.
Strike Price	25	8	Integer	For product type "O", denotes the explicit strike price of the product. Refer to Data Types for field processing notes. For all other product types, 0
Option Type	33	1	Alpha	Option Type: "C" = Call (Option) "P" = Put (Option) " " = (Future)
Issue Symbol	34	13	Alpha	Denotes the unique underlying issue symbol for this symbol (e.g. NAU).
Tradable	47	1	Alpha	Denotes whether or not this product is tradable at the exchange. The allowable values are: "Y" = Product is tradable "N" = Product is not tradable
MPV	48	8	Integer	Minimum Price Variation for this product. All prices must be a multiple of this price.
Symbol Start Time	56	4	Integer	Timestamp in seconds when the symbol starts trading
Symbol End Time	60	4	Integer	Timestamp in seconds when the symbol ends trading
Issue Type	64	1	Integer	Provides Issue Type D=Commodity C=Currency I=Index F=ETF M=Metal E=Energy
ExecAlgo	65	1	Integer	Execution Algorithm P=Price/Time R=Prorata

Notes:

1) **IMPORTANT:** The unique key for each symbol is the combination of the product type and the product ID. Product IDs are NOT unique across different product types.
2) The product directory messages are sent once per symbol, typically before the "Start of System Hours" System Event. Should it be necessary, intra-day updates to this message will be sent as they occur. In the case of an intra-day update, for a given Product Type/Product ID pair, the canonical information for the symbol is invariant (will not change). The canonical information consists of Symbol/Issue Symbol, Expiration Year Month and Day, Strike Price and Option Type. Other attributes for the product may change.
3) This is a sequenced message and therefore can be replayed upon re-connection.
4) If a Trading Product is removed from the system intra-day, a new product directory message will be sent with "Tradable" field set to "N". Any Quotes sent for this removed product will be rejected. All existing quotes for this product will be purged.
5) NASDAQ OMX FUTURES validates incoming order/quote prices against the MPV.

7.3 Security Trading Action Message

NASDAQ OMX FUTURES will use this administrative message to indicate the current trading status of a trading product within the NASDAQ OMX FUTURES Market.

After the start of system hours, the system will use the Trading Action message to relay changes in trading status for an individual trading symbol. Messages will be sent when a future or option is halted or is released for trading.

Trading Action Message

Name	Offset	Length	Value	Notes
Message Type	0	2	Alpha	"AH" = Trading Action Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of timestamp
Product Type	10	1	Alpha	"F" = Future "O" = Option
Product ID	11	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Current Trading State	15	1	Integer	Reflects the current trading state for the product. The allowable values are: H = Halt in effect T = Trading Resumed S = Symbol Starting (quote/orders now accepted) E = Symbol Ending (quote/orders no longer accepted)

Notes:

1) At the start of the day, all trading products are assumed to be trading unless notified by this message.
2) This is a sequenced message and therefore can be replayed upon re-connection.

7.4 Rapid-Fire Admin Message

This optionally delivered message specifies firms' per issue risk mitigation parameters (Rapid Fire settings).

Rapid-Fire Admin Message

Name	Offset	Length	Value	Notes
Message Type	0	2	Alpha	"AF" = Rapid Fire Admin Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of timestamp
Firm	10	4	Alphanumeric	Exchange assigned Firm or Badge
Issue Symbol	14	13	Alphanumeric	Issue Symbol (e.g. NAU)
Percentage	27	2	Integer	Displayed size percentage (e.g. 100)
Interval	29	2	Integer	Time interval (in milliseconds)

Notes:

1) The Rapid-Fire Admin messages are sent per firm/issue pair, typically after Product Directory messages. Rapid fire parameters are set to system default values unless specifically overridden via SQF message or by NASDAQ OMX FUTURES operations personnel.
2) Default Rapid-Fire parameters are not disseminated
3) Intra-day updates to the rapid-fire settings will be sent out as soon as the changes initiated via mechanisms mentioned above take effect.
4) This is a sequenced message and therefore can be replayed upon re-connection.
5) Rapid-Fire Admin messages are only disseminated to ports associated with the firm involved.

7.5 Rapid-Fire Configuration Control

SQF clients can change their risk-protection parameters using Rapid-Fire Control message. Rapid-Fire control changes can be issued any time after the start of system hours and take effect immediately.

7.5.1 Rapid-Fire Control Request Message

Rapid-Fire Change Request Message

Name	Offset	Length	Value	Notes
Message Type	0	2	Alpha	"AF" = Rapid Fire Change Request Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader that submitted the request
Issue Symbol	14	13	Alphanumeric	Issue Stock Symbol
Percentage	27	2	Integer	Displayed size percentage (e.g. 100). Maximum allowed value is 1000
Interval	29	2	Integer	Time interval (in milliseconds)

Notes:

1) A valid Rapid Fire Change Request Message results in a Rapid-Fire Admin message sent out to all "notification" ports configured for the same firm/issue pair.
2) Rapid Fire Change causes system to reset the ongoing trade volume accumulation for the specified firm/issue pair. New parameters take effect immediately.
3) Rapid Fire Change settings are maintained for the duration of the current trading session. System reverts to the default as well as the settings maintained by NASDAQ OMX FUTURES personnel at the beginning of every trading day.

7.5.2 Rapid-Fire Control Reply Message

This message is sent as a response to the Rapid-Fire Control Request Message (AF) and indicates the validity of the request.

Rapid-Fire Change Reply Message

Name	Offset	Length	Value	Notes
Message Type	0	2	Alpha	"AA" = Admin Control Reply Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Status Code	6	1	Alphanumeric	" " = valid request "A" = invalid firm "B" = invalid symbol "C" = not permitted "R" = market closed "T" = invalid trader id "Y" = invalid block "Z" = system unavailable

Notes:

1) This is an unsequenced message and therefore cannot be replayed upon re-connection.

8 Quote Messages

NASDAQ OMX FUTURES supports four different message formats for quote submission. It is possible to receive a "regular" or "detailed" reply message (acknowledgment) for each of the quote request types. Detailed replies contain system assigned unique sequence numbers for the Bid and Ask parts of the quote. The reply format is controlled by the case of the quote message subtype – upper case subtype requests are replied with regular acknowledgments, lower case subtype requests are replied with detailed acknowledgments. E.g. "QQ" quote is responded with regular reply, "Qq" is responded with the detailed one.

8.1 Short Quote Block Message

The Short Quote Block message is used to submit quotes. It can contain a variable number of quotes - up to 200 - within a single application level message. The Short Quote Block message utilizes the exchange assigned Product ID to specify the symbol that is being quoted. The Product ID for each product can be obtained from the Trading Product Directory messages. The Short Quote Block message contains a Message ID field to provide the firm with a means to uniquely identify the quote block.

Short Quote Block Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"QQ" = Short Quote Block (Results in a Regular Reply) "Qq" = Short Quote Block (Results in a Detailed Reply)
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this quote block
Message ID	14	8	Binary	Firm defined unique quote message identifier reported on clearing executions
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's clearing feeds/drops. Format is left-justified, alphanumeric, padded with spaces on the right. This field is required to have at least 1 nonspace, alphanumeric character.
Quote Count	32	2	Integer	Number of quotes in the message
1 – 200 quotes comprised of the following fields...				
Product Type		1	Alpha	"F" = Future "O" = Option
Product ID		4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Bid Price		8	Integer	The bid price of the new quote. **NOTE:** When converted to a decimal format, this price is in fixed point format with 10 whole number places followed by 8 decimal digits.
Bid Size		4	Integer	The ask contracts of the new quote.
Ask Price		8	Integer	The ask price of the new quote. **NOTE:** When converted to a decimal format, this price is in fixed point format with 10 whole number places

				followed by 8 decimal digits.
Ask Size		4	Integer	The ask contracts of the new quote.
Participant Type		1	Alpha	Participant Type (See appendix B for values)
OpenClose		1	Alpha	"O" = Open "C" = Close

Notes:

1) 0 x 0 quotes are accepted and are processed as a purge of that symbol. The firms are required to send a reentry message before the first new quote following a 0 x 0 quote.
2) The Message ID contents will appear in the Quote ID field in the Execution Notification messages and the Clearing Trade Interface (CTI) trade messages. In the short quote block message above, this field uniquely identifies the quote block, not the individual quote within the block which may be executed against.
3) Both bid and ask must be provided for each quote submitted.
4) See the Processing Hints and Tips Section for tips on quote message processing.

8.2 Long Quote Block Message

The Long Quote Block message is used to submit quotes. It can contain a variable number of quotes - up to 200 - within a single application level message. The Long Quote Block message utilizes the exchange assigned Product ID to specify the product that is being quoted. The Product ID for each product can be obtained from the Trading Product Directory message. The Long Quote Block message contains a Message ID field to provide the firm with a means to uniquely identify the quote block. The Long Quote Block message differs from the Short Quote Block message as it includes a Quote ID field to provide the firms with a means to uniquely identify each quote within the block.

Long Quote Block Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"QL" = Long Quote Block (Results in a Regular Reply) "QI" = Long Quote Block (Results in a Detailed Reply)
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this quote block
Message ID	14	8	Binary	Firm defined unique message identifier.
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's clearing feeds/drops. Format is left-justified, alphanumeric, padded with spaces on the right. This field is required to have at least 1 nonspace, alphanumeric character.
Quote Count	32	2	Integer	Number of quotes in the message
1 - 200 quotes comprised of the following fields...				
Quote ID		8	Binary	Firm defined unique quote identifier reported on clearing executions. Overrides the message identifier on clearing executions.
Product Type		1	Alpha	"F" = Future "O" = Option

Product ID		4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Bid Price		8	Integer	The bid price of the new quote. **NOTE:** When converted to a decimal format, this price is in fixed point format with 10 whole number places followed by 8 decimal digits.
Bid Size		4	Integer	The bid contracts of the new quote.
Ask Price		8	Integer	The ask price of the new quote. **NOTE:** When converted to a decimal format, this price is in fixed point format with 10 whole number places followed by 8 decimal digits.
Ask Size		4	Integer	The ask contracts of the new quote.
Participant Type		1	Alpha	Participant Type (See appendix B for values)
OpenClose		1	Alpha	"O" = Open "C" = Close

Notes:

1) 0 x 0 quotes are accepted and are processed as a purge of that symbol. The firms are required to send a reentry message before the first new quote following a 0 x 0 quote..
2) The Quote ID contents will appear in the Quote ID field in the Execution Notifications and the Clearing Trade Interface (CTI) trade messages. In the long quote block message above, this field uniquely identifies the individual quote within the block which may be executed against.
3) Both bid and ask must be provided for each quote submitted.
4) See the Processing Hints & Tips Section for tips on quote message processing.

8.3 Quote Reply Message

This message is a response to "QQ" and "QL" requests.

The Quote Reply message is used to inform the firm of the status of the quotes sent to the matching engine. A quote may be rejected by the matching engine, in which case a quote status code states the reason why the quote was rejected. Sequencing information for valid quotes is returned which may be used to determine the relative order of quotes or purges processed by the matching engine.

Quote Reply Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"QR" = Quote Reply Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this quote block
Message ID	14	8	Binary	Firm defined unique message identifier
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's clearing feeds/drops
Block Status Code	32	1	Alphanumeric	" " = valid "A" = invalid firm "T" = invalid trader id "Y" = invalid block "Z" = system unavailable
Quote Count	33	2	Integer	The number of quotes in the submitted quote block
Valid Quote Count	35	2	Integer	The number of valid quotes in the submitted quote block. A valid quote is defined as a quote or purge (0 x 0 quote) that has a Quote Status Code of " "
1-200 quote responses comprised of the following fields...				
Quote Status Code		1	Alphanumeric	" " = valid quote "B" = invalid symbol "C" = not permitted "D" = invalid side "E" = invalid size "F" = invalid price "G" = invalid spread "I" = reentry required "K" = pretrade risk preemptive reject "L" = pretrade risk cutoff reject "M" = Invalid open/close "P" = not in free trading "R" = market closed "U" = Bad account
Sequence		8	Integer	Relative sequence of the valid quote processed by the matching engine. Quotes/purges with higher sequence number occur after quotes/purges with lower sequence number. This field is

				zero if the request was invalid. Unique across all ports connected to a matching engine.

Notes:

1) The Quote Reply message is used by NASDAQ OMX FUTURES to respond to all submitted quote block message types.
2) Subtracting the Valid Quote Count field from the Quote Count field yields the number of invalid quotes and purges (0x0 quotes) in the quote block.
3) The Quote Reply message is assumed to apply to the last quote block message that has yet to be responded to for a given port. However, it does include the Message ID of the referenced quote block for convenience.
4) As a best practice, for a given port, firms should wait until the quote block response is received prior to sending another quote block to avoid unintentionally queuing within the TCP stack.
5) If firms load balance symbols across multiple connections, the firm is advised to wait for the quote response prior to submitting a new quote for a given symbol down a different connection to avoid timing issues/race conditions.
6) This is an unsequenced message and therefore cannot be replayed upon re-connection.
7) It is recommended that the firm send one quote per firm/option combination in one block for a given symbol. If more than one quote is sent in a block, each quote will be processed by the matching engine in the order that they appear in the quote block.

8.4 Detailed Quote Reply Message

This message is a response to "Qq" and "Ql" requests.

This reply is identical in circumstance and behavior to the Quote Reply Message described in the previous chapter. The only difference is inclusion of individual Bid/Ask sequence numbers.

Detailed Quote Reply Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"Qr" = Detailed Quote Reply Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this quote block
Message ID	14	8	Binary	Firm defined unique message identifier
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's clearing feeds/drops
Block Status Code	32	1	Alphanumeric	" " = valid "A" = invalid firm "T" = invalid trader id "Y" = invalid block "Z" = system unavailable
Quote Count	33	2	Integer	The number of quotes in the submitted quote block
Valid Quote Count	35	2	Integer	The number of valid quotes in the submitted quote block. A valid quote is defined as a quote or purge (0 x 0 quote) that has a Quote Status Code of " "
1-200 quote responses comprised of the following fields...				
Quote Status Code		1	Alphanumeric	" " = valid quote "B" = invalid symbol "C" = not permitted "D" = invalid side "E" = invalid size "F" = invalid price "G" = invalid spread "I" = reentry required "K" = pretrade risk preemptive reject "L" = pretrade risk cutoff reject "M" = Invalid open/close "P" = not in free trading "R" = market closed"U" = Bad account
Sequence		8	Integer	Quotes/purges with higher sequence number occur after quotes/purges with lower sequence number. This field is zero if the request was invalid. Unique across all ports connected to a matching engine.
Bid Sequence		8	Integer	Day-unique order reference number

				assigned by NASDAQ OMX FUTURES to the Bid side of the quote
Ask Sequence		8	Integer	Day-unique order reference number assigned by NASDAQ OMX FUTURES to the Sell side of the quote

9 Purge / Reentry Messages

9.1 Issue Purge Message

The Issue Purge message is used to pull all quotes and orders from the market for all products of the specified issue symbol. It contains a Message ID field to provide the firm with a means to uniquely identify the purge.

Issue Purge Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"PU" = Issue Purge Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this request
Message ID	14	8	Binary	Firm defined unique message identifier
Issue Symbol	22	13	Alphanumeric	Denotes the unique issue symbol. If the field is "*" (blank padded on the right), then all issues for this firm will be purged.

Notes:

1) Purges require firms to send a Market Reenter message before a new quote will be accepted.
2) See the Processing Hints & Tips Section for tips on purge message processing.
3) Issue Purge Notification Messages will be sent to all SQF connections configured as Notification Ports. If a wildcard issue purge is submitted (Issue Symbol field with "*" blank padded on the right), an Issue Purge Notification Message for each of the firm's quoted issues will be sent to all Notification Ports.

9.2 Issue Purge Reply Message

The Issue Purge Reply message is used to inform firms of the validity of an issue purge request.

Issue Purge Reply Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"PR" = Issue Purge Reply Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader that submitted the request
Message ID	14	8	Binary	Firm defined unique message identifier
Purge Status Code	22	1	Alphanumeric	" " = valid purge "A" = invalid firm "B" = invalid symbol "C" = not permitted "P" = not in free trading "R" = market closed "T" = invalid trader id "Y" = invalid block "Z" = system unavailable
Sequence	23	8	Integer	This field has different meanings depending on whether the request was for a specific Issue or for all Issues ("*"). If purging a specific Firm/Issue pair: Relative sequence of the issue purge processed by the matching engine. Quotes/purges with higher sequence number occur after quotes/purges with lower sequence number. This field is zero if the request was invalid. Note that sequencing information for each issue purged is returned in the Issue Purge Notification Messages. Unique across all ports connected to a matching engine. If purging all Issues for a Firm: This field will be 0. As each Firm/Issue pair is purged by the system, there will be an Issue Purge Notification message containing the sequence number for that Firm/Issue pair. (See Issue Purge Notification message for details.)

Notes:

1) The Issue Purge Reply message is used to respond to user submitted Issue Purge request.
2) As a best practice, for a given port, firms should wait until the purge response is received prior to sending another purge to avoid

a. confusing responses with sent purges
b. unintentionally queuing within the TCP stack

3) If firms load balance symbols across multiple connections, the firm is advised to wait for the purge response prior to submitting a Market Reentry and/or a purge for a given symbol down a different connection to avoid timing issues/race conditions.
4) This is an unsequenced message and therefore cannot be replayed upon re-connection.

9.3 Issue Market Reentry Message

Market Issue Reentry message is used to reset risk protection that has previously been triggered by either a system Rapid-Fire, Trading Product or user Purge event. This message provides a larger scope alternative to specifying product reentry requests on individual trading symbols. Once a Reentry request has been successfully handled by the system quotes will be accepted for any trading symbol within the scope of the reentry request.

Issue Market Reentry Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"RU" = Market Issue Reentry Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this request
Message ID	14	8	Binary	Firm defined unique message identifier
Issue Symbol	22	13	Alphanumeric	Denotes the unique issue symbol. If the field is "*" (blank padded on the right), then all issues for this firm will be reset for reentry.

Notes:

1) Issue Market Reentry does not restore the quotes that have been removed from the system due to purge or rapid-fire.

9.4 Product Market Reentry Message

Product Market Reentry message is used to reset risk protection that has previously been triggered by a Trading Product Purge event for a particular Product ID + Product Type pair. Once a Reentry request has been successfully handled by the system quotes will be accepted for the trading symbol (i.e. the Product Type + Product ID) specified in the reentry request.

Product Market Reentry Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"RP" = Market Product Reentry Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this request
Message ID	14	8	Binary	Firm defined unique message identifier
Product Type	22	1	Alpha	Product Type: "F" = Future "O" = Option
Product ID	23	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.

Notes:

1) Market Reentry does not restore the quotes that have been removed from the system due to purge or rapid-fire.

9.5 Market Reentry Reply Message

This message informs user of the completion and validity of the previously submitted Issue or Product Market Reentry request.

Market Reentry Reply Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"RR" = Market Reentry Reply Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Message ID	6	8	Binary	Firm defined unique message identifier
Status Code	14	1	Alphanumeric	" " = valid reentry "A" = invalid firm "B" = invalid symbol "C" = not permitted "R" = market closed "T" = invalid trader id "Y" = invalid block "Z" = system unavailable
Reserved	15	8		Unused

Notes:

1) The Market Reentry Reply message is assumed to apply to the last Market Reentry request that has yet to be responded to for a given port. However, it does include the Message ID of the referenced request for convenience.
2) When load balancing symbols across multiple connections, the firm is advised to wait for the Market Reentry response prior to submitting new quotes for the related symbols down a different connection to avoid timing issues/race conditions.
3) This is an unsequenced message and therefore cannot be replayed upon re-connection.

10 SQF Orders

10.1 SQF Order Functionality

SQF Orders

NOTE: These orders follow the normal semantics of order entry, not the semantics of Sweep orders from other Nasdaq OMX SQF protocols. This means that specifying side = Buy will execute against the Sell side of the book, and specifying side = Sell will execute against the Buy side of the book.

A SQF Order can be submitted during free trading. These orders can execute against any marketable interest (including both orders and quotes) resting on the opposite side of the specified product's book. These orders are implicitly IOC orders. These orders can hit multiple price levels. An Order Accept or Order Reject message indicates that the request was accepted or rejected by the matching engine, respectively. Each execution against one of these orders will generate an Order Execution Notification which includes the execution price and the number of contracts traded. Since these orders are IOCs, the unexecuted balance will be immediately cancelled which will generate an Order Canceled Notification.

The Specialist and Market Maker can specify the number of contracts at the defined price.

Auction Response

Available at a future date.

Considerations

Some things to consider when sending SQF Orders:

- SQF Orders cannot be sent before opening, because the product is not in free trading
- SQF Orders cannot be sent while the product is Halted, because the product is not in free trading

10.1.1 SQF Order Request

The SQF Order Request message is used to submit IOC orders to act as a taker of liquidity from the book. This message utilizes the exchange assigned Product Type/Product ID pair to specify the symbol whose book is being accessed. The valid Product Type/Product ID pairs can be obtained from the Directory messages. The SQF Order Request contains an Order ID field to provide the firm with a means to uniquely identify the order.

SQF Order Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"OO" = SQF Order Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this request
Order ID	14	8	Binary	Firm defined unique message identifier. This id must be unique with respect to any currently open order sent on the SQF port receiving this message.
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's clearing feeds/drops. Format is left-justified, alphanumeric, padded with spaces on the right. This field is required to have at least 1 nonspace, alphanumeric character.
Product Type	32	1	Alpha	Product Type: "F" = Future "O" = Option
Product ID	33	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Price	37	8	Integer	Limit price of the order
Side	45	1	Alphanumeric	"B" = Buy order "S" = Sell order
Contracts	46	4	Integer	Contract volume of the order
Participant Type	50	1	Alpha	Participant Type (See appendix B for values)
OpenClose	51	1	Alpha	"O" = Open "C" = Close

Notes:

1) **IMPORTANT:** Unlike SQF sweeps available on NASDAQ OMX securities options exchanges, the "side" field in these requests are like normal orders such that if you want to execute against sell liquidity in the book you should send a "Buy" order and vice versa.
2) SQF Orders are submitted during free trading and will attempt to execute against contra side of the book. They are implicitly immediate or cancel (IOC) orders.

10.1.2 SQF Order Accept Message

The SQF Order Accept message is used to inform firms that a sweep is valid and accepted.

SQF Order Accept Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"OA" = SQF Order Accept Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this request
Order ID	14	8	Binary	Firm defined unique message identifier.
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's clearing feeds/drops
Product Type	32	1	Alpha	Product Type: "F" = Future "O" = Option
Product ID	33	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Price	37	8	Integer	Limit price of the order
Side	45	1	Alphanumeric	"B" = Buy order "S" = Sell order
Contracts	46	4	Integer	Contract volume of the order
Participant Type	50	1	Alpha	Participant Type (See appendix B for values)

Notes:

1) The SQF Order Accept message is used to respond to a SQF Order Request if the request was determined to be valid.
2) This is a sequenced message and therefore can be replayed upon re-connection.

10.1.3 SQF Order Reject Message

The SQF Order Reject message is used to inform firms that a submitted order is invalid and therefore rejected.

SQF Order Reject Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"OR" = SQF Order Reject Message
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	6	8	Alphanumeric	ID of trader submitting this request
Order ID	14	8	Binary	Firm defined unique message identifier.
clientAccount	22	10	Alphanumeric	Firm account passed on to clearing authority and client's

				clearing feeds/drops
Order Reject Code	32	1	Alphanumeric	"A" = invalid firm "B" = invalid symbol "C" = not permitted "D" = invalid side "E" = invalid size "F" = invalid price "K" = pretrade risk preemptive reject "L" = pretrade risk cutoff reject "M" = Invalid open/close "P" = not in free trading "R" = market closed "T" = invalid trader id "U" = Bad account "Z" = system unavailable

Notes:

1) The SQF Order Reject message is used to respond to an SQF Order Request if the request was determined to be invalid.
2) This is a sequenced message and therefore can be replayed upon re-connection.

10.1.4 SQF Order Execution Message

The SQF Order Execution message is used to inform firms that an SQF Order has partially or fully executed.

SQF Order Execution Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"OE" = SQF Order Execution Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	10	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	14	8	Alphanumeric	ID of trader submitting this quote block
Product Type	22	1	Alpha	"F" = Future "O" = Option
Product ID	23	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Order ID	27	8	Binary	Firm defined unique Order ID reported on clearing executions. Message ID from original order message.
Price	35	8	Integer	Execution Price.

Side	43	1	Alphanumeric	"B" = Bought "S" = Sold NOTE: This value will match the "side" specified in the original order.
Contracts	44	4	Integer	Number of contracts traded
Liquidity Indicator	48	1	Alphanumeric	Indicates if this side of the trade added or removed liquidity. Possible values are: "A" = Added liquidity "R" = Removed liquidity
Cross Id	49	4	Integer	Identifies the execution. This can be matched with the Cross Id in the exchange Clearing Trade Interface (CTI) messages.
Match Id	53	4	Integer	Identifies the component of an execution.
Pair Id	57	4	Integer	Identifies the unique pair id shared by the two sides (buyer and seller) of the execution.

Notes:

1) This is a sequenced message and therefore can be replayed upon re-connection.
2) It is possible for an SQF order to have more than one execution for a given Cross Id. The Cross Id and Match Id combination uniquely identifies the Execution.

10.1.5 SQF Order Canceled Message

The SQF Order Canceled message is used to inform firms that the remaining open shares of their SQF Order have been canceled.

SQF Order Canceled Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"OC" = SQF Order Canceled Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	10	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	14	8	Alphanumeric	ID of trader submitting this quote block
Product Type	22	1	Alpha	"F" = Future "O" = Option
Product ID	23	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Order ID	27	8	Binary	Order ID from original order message.

Contracts	35	4	Integer	Number of contracts canceled

Notes:
1) This is a sequenced message and therefore can be replayed upon re-connection.
2) The firm will receive exactly zero or one SQF Order Canceled message for a given SQF order.
3) If the order was filled, then this message will not be sent.
4) If the order was not executed at all or could only be partially filled, then this message will be sent to cancel any remaining opening shares after any required execution notifications are sent.

Notifications

10.2 Purge Notifications

10.2.1 Trading Product Purge Notification Message

The Trading Product Purge Notification message is used to inform firms that their quote and/or orders for a given trading symbol have been purged/removed from the market. This message utilizes the exchange assigned Product Type + Product ID to specify the symbol that has been purged. The Product Type/IDs for all trading symbols can be obtained from the Directory messages.

Trading Symbol Purge Notification Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"NP" = Option Symbol Purge Notification Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	10	4	Alphanumeric	Exchange assigned Firm or Badge
Product Type	14	1	Alpha	"F" = Future "O" = Option
Product ID	15	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Purge Reason Code	19	1	Alphanumeric	"U" = user requested "S" = system initiated "Q" = Self-match prevention "R" = Pre-trade risk management cutoff
Message ID	20	8	Binary	Firm defined unique message identifier. This field is padded with blanks for system initiated purges.
Sequence	28	8	Integer	Relative sequence of the purge processed by the matching engine. Quotes/purges with higher sequence number occur after quotes/purges with lower sequence number. This field is zero if the request was invalid. Unique across all ports connected to a matching engine.

Notes:

1) The Trading Product Purge Notification Message is used to notify the firms that their quote and/or orders for a given symbol have been purged/removed from the market.
2) This is an unsequenced message and therefore cannot be replayed upon re-connection.

3) A Trading Product Purge Notification Message is generated upon any unsolicited system generated purge as well as for user requested purges.
4) A manual symbol purge requested by firm and performed by exchange personnel has Purge Reason Code set to "S".

10.2.2 Issue Purge Notification Message

The Issue Purge Notification message is used to inform firms that their quotes and/or orders for all Trading Products associated with the given issue symbol have been purged/removed from the market.

Issue Purge Notification Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"NU" = Issue Purge Notification Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	10	4	Alphanumeric	Exchange assigned Firm or Badge
Issue Symbol	14	13	Alphanumeric	Denotes the unique issue symbol.
Purge Reason Code	27	1	Alphanumeric	"U" = user requested "S" = system initiated "R" = Pre-trade risk management cutoff
Message ID	28	8	Binary	Firm defined unique message identifier. This field is filled with blanks for system initiated purges.
Sequence	36	8	Integer	Relative sequence of the issue purge processed by the matching engine. Quotes/purges with higher sequence number occur after quotes/purges with lower sequence number. This field is zero if the request was invalid. Unique across all ports connected to a matching engine.

Notes:

1) The Issue Purge Notification Messages is used to notify the firms that their quotes and/or orders for all trading products associated with a given issue have been purged/removed from the market.
2) This is an unsequenced message and therefore cannot be replayed upon re-connection.
3) An Issue Purge Notification Message is generated upon any unsolicited system generated purge as well as for user requested purges.

4) A manual issue purge requested by firm and performed by exchange personnel has Purge Reason Code set to "S".

10.3 Market Reentry Notifications

The Market Reentry Notification message informs that risk protection has been reset for the specified scope.

10.3.1 Issue Market Reentry Notification Message

The Issue Market Reentry Notification message informs that risk protection triggered by rapid fire /purge has been reset for the Issue in the message.

Issue Market Reentry Notification Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"NR" = Market Issue Reentry Notification Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	10	4	Alphanumeric	Exchange assigned Firm or Badge
Issue Symbol	14	13	Alphanumeric	Denotes the unique issue stock symbol.
Message ID	27	8	Binary	Firm defined unique message identifier of the initiating Reentry request.
Reserved	35	8		Reserved - unused

Notes:

1) This is an unsequenced message and therefore cannot be replayed upon re-connection.

10.3.2 Product Market Reentry Notification Message

The Product Market Reentry Notification message informs that risk protection triggered for a given symbol (Product Type+Product ID pair) has been reset.

Product Market Reentry Notification Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"NS" = Market Product Reentry Notification Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Product Type	10	1	Alpha	"F" = Future "O" = Option
Product ID	14	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Message ID	28	8	Binary	Firm defined unique message identifier of the initiating Reentry request.

Notes:

2) This is an unsequenced message and therefore cannot be replayed upon re-connection.

10.4 Execution and Cancel Notifications

10.4.1 Quote Execution Notification Message

The Quote Execution Notification message is used to inform firms that their quote for a given Trading Product has been executed in the market.

Quote Execution Notification Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"NE" = Quote Execution Notification Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Firm	2	4	Alphanumeric	Exchange assigned Firm or Badge
Trader ID	14	8	Alphanumeric	ID of trader that submitted the quote
Product Type	22	1	Alpha	"F" = Future "O" = Option
Product ID	23	4	Integer	Exchange assigned Product ID. Unique only when combined with product type.
Quote ID	27	8	Binary	Firm defined unique Quote ID. Message ID from Quote Block Message or Quote ID.
Auction ID	35	4	Integer	<reserved>
Price	39	8	Integer	Execution Price
Side	47	1	Alphanumeric	"B" = Bought "S" = Sold
Contracts	48	4	Integer	Number of contracts traded
Liquidity Indicator	52	1	Alphanumeric	Indicates if this side of the trade added or removed liquidity. Possible values are: "A" = Added liquidity "R" = Removed liquidity
Cross Id	53	4	Integer	Identifies the execution. This can be matched with the Cross Id in the exchange Clearing Trade Interface (CTI) messages
Match Id	57	4	Integer	Identifies the component of an execution
Pair Id	61	4	Integer	Identifies the unique pair id shared by the two sides (buyer and seller) of the execution.

Notes:

1) This is a sequenced message and therefore can be replayed upon re-connection.
2) This notification is only sent if the firm is subscribed to receive these messages.
3) The firm may receive more than one Quote Execution Notification message with the same cross ID, however the Cross Id and Match Id combination uniquely identifies the Quote Execution.

10.5 Pre Trade Risk Notification

The Pre Trade Risk Notification message is used to inform firms that one of their pre trade risk monitors has changed state. The state change could be a warning, a cutoff or a reset.

Pre Trade Risk Notification Message

Name	Offset	Length	Value	Notes
Type/Subtype	0	2	Alpha	"NM" = Pre Trade Risk Notification Message
Seconds	2	4	Integer	Seconds portion of the timestamp
Nanoseconds	6	4	Integer	Nanoseconds portion of the timestamp
Monitor Type	10	1	Alpha	Type of Pre Trade Risk Monitor "F" – Monitor for a single firm. "T" – Monitor for a single trader "f" – Predefined group of firms "t" – Predefined group of traders
Monitor ID	11	8	Alphanumeric	ID of Pre Trade Risk Monitor whose status is being updated. Left justified, padded with spaces to the right. Value depends on Monitor Type: Type "F" – 4 byte firm mnemonic Type "T" – 8 byte Trader ID Type "f" or "t" – 8 byte Group ID
Status	19	1	Alpha	Status " " – Reset (not alerted) "7" – 70% limit warning "8" – 80% limit warning "9" – 90% limit warning "X" – Cutoff limit reached. Quotes are purged, orders are canceled and no new orders/quotes will be accepted.
Rule	20	1	Alpha	Rule " " – N/A (if status is Reset) "A" – Open Exposure Value "B" – Open Total Value "C" – Exec Exposure Value "D" – Exec Total Value
Trigger Value	21	8	Binary	The value that caused the status change. Note this will be 0 on a

				Reset.

Notes:

1) This is a sequenced message and therefore can be replayed upon re-connection.
2) This notification is only sent if the port is subscribed to receive these messages, and the firm, trader, firm group or trader group is permissioned for the given port.

11 Support

Department	Contact	Phone	Email
Market Operations	System Support	+1 215 496 1571	phlxsystemsupport@nasdaqomx.com
NOC	NOC	+1 212 231 5049	nocgroup@nasdaqomx.com
Subscriber Services	Subscriber Services	+1 212 231 5180	subscriber@nasdaqomx.com

For technical questions please contact devsupport@nasdaqomx.com

12 Appendix A – SQF Client To Host Messages

The following table summarizes which host to client messages are sequenced or unsequenced.

Message	Notes
System Event Message	Sequenced
Future Directory Message	Sequenced
Option Directory Message	Sequenced
Security Trading Action Message	Sequenced
Rapid Fire Admin Message	Sequenced
Rapid Fire Control Reply Message	Unsequenced
Quote Reply Message	Unsequenced
Issue Purge Reply Message	Unsequenced
SQF Order Accept Message	Sequenced
SQF Order Reject Message	Sequenced
SQF Order Execution Message	Sequenced
SQF Order Canceled Message	Sequenced
Trading Product Purge Notification Message	Unsequenced
Issue Purge Notification Message	Unsequenced
Market Issue Reentry Notification Message	Unseqeunced
Market Product Reentry Notification Message	Unseqeunced
Quote Execution Notification Message	Sequenced

13 Appendix B – Participant Types

Firms sending messages requiring Participant Type will submit one of the Participant Types below. Each Participant Type value corresponds to a specific combination of Customer Type Identifier (CTI) code, Origin Code, and OCC Account Type Code.

Participant type	Corresponding combination			
SQF value	**CTI Code**	**Origin Code**	**OCC C/F/M**	**Description**
A	1	1	M	Transactions initiated and executed by an individual Member for his own account, for an account he controls or for an account in which he has ownership or financial interest; Segregated Funds
B	1	2	M	Transactions initiated and executed by an individual Member for his own account, for an account he controls or for an account in which he has ownership or financial interest; Non-Segregated Funds
C	2	1	M	Transactions executed for the proprietary account of a NASDAQ OMX FUTURES Member; Segregated Funds
D	2	2	M	Transactions executed for the proprietary account of a NASDAQ OMX FUTURES Member; Non-Segregated Funds
E	2	1	F	Transactions executed for the proprietary account of a NASDAQ OMX FUTURES Member Firm; Segregated Funds
F	2	2	F	Transactions executed for the proprietary account of a NASDAQ OMX FUTURES Member Firm; Non-Segregated Funds
G	3	1	M	Transactions where an individual Member executes for the personal account of another individual Member, for an account the other individual Member controls or for an account in which the other individual Member has ownership or financial interest; Segregated Funds
H	3	2	M	Transactions where an individual Member executes for the personal account of another individual Member, for an account the other individual Member controls or for an account in which the other individual Member has ownership or financial interest; Non-Segregated Funds
I	4	1	C	Transactions not meeting the definition of CTI 1, 2 or 3. (These should be non-Member customer transactions.) Segregated Funds

14 Appendix C – Revision Control Log

Documentation Revision Control Log

July 19, 2013: Specialized Quote Interface- Version 1.1

- Added ClientAccount field to various messages

March 13, 2013: Specialized Quote Interface- Version 1.0

- Alpha version

NASDAQ OMX | NASDAQ FUTURES

FIX Drop Specification

Version 1.3

Revised Dec 06, 2013

NASDAQ Futures
FIX DROP 1.1
July 19, 2013

1 Overview

Overview

It is assumed that the reader is familiar with the FIX 4.2 protocol as described at http://www.fixprotocol.org. This document describes the differences between the NASDAQ FUTURES implementation and the FIX 4.2 standard.

2 Session Information

2.1 Logon

The Logon must be the first message sent by the subscriber after the TCP connection is established. EncryptMethod is ignored (FIX level encryption is not supported).
The IP Address of the subscriber, the *SenderCompId* and *TargetCompId* will be validated. If validation fails the connection will be dropped.

2.1.1 ID Fields

SenderCompID sent	The SenderCompID as assigned by NASDAQ FUTURES. The maximum size is 4 to 6 characters.
TargetCompID	The TargetCompID as assigned by NASDAQ FUTURES. The maximum size is 4 to 6 characters.

If the connection is unexpectedly broken, upon reconnect the subscriber may receive a Logon Acknowledgement with a sequence number greater than expected. This means that in-flight messages were missed (likely important execution reports). The subscriber should issue a Resend Request to retrieve the missed messages.

Similarly NASDAQ FUTURES will issue a Resend Request to the subscriber for messages that it missed.
HeartbeatInterval must be specified by the subscriber in the Logon message in whole seconds. Though there are no restrictions imposed by NASDAQ FUTURES on *HeartbeatInterval*, we recommend using a value as low as possible, so disconnects are detected sooner. The accepted *HeartbeatInterval* value will be returned on the Logon Acknowledgement message.

2.2 *Sequence Numbers*

Sequence numbers, both inbound and outbound, will be reset to 1 at the beginning of each session. Messages are processed sequentially. Sequenced messages that have fallen behind (other than Sequence Reset – Reset, Sequence Reset - GapFill and those marked with PossDup flag of 'Y') can cause an immediate logout. A Sequence Reset – Reset message attempting to reset the sequence to a new sequence number that is lower than the current expected sequence will also cause an immediate logout. Messages with sequence numbers higher than expected (other than Logon and Logout) will trigger message recovery via Resend Request.

2.3 *Heartbeat*

A Heartbeat message should be sent if the agreed upon *HeartbeatInterval* has elapsed since the last message sent. If any message has been sent during the preceding *HeartbeatInterval* a Heartbeat message need not be sent.

2.4 *Test Request*

NASDAQ FUTURES will reply with a Heartbeat message to a Test Request message, providing TestReqId as of original Test Request.

NASDAQ FUTURES will issue a Test Request if a *HearbeatInterval* + 1 seconds have elapsed since the last message received. If 3 consequent NASDAQ FUTURES Test Requests go by without receiving a message the TCP connection is considered broken and will be dropped.

2.5 *Resend Request*

As discussed in the FIX 4.2 specification, it is possible to send an open or closed sequence range in a Resend Request (an open range uses sequence zero as the EndSeqNo). NASDAQ FUTURES will honor either type of request. Any messages sent in response to NASDAQ FUTURES Resend Request should have PossDup="Y".

2.6 *Reject*

Session level rejects are used to indicate violations of the session protocol, or missing (or invalid) fields. These are to be expected during development and certification, but should be extremely rare in production. Application layer rejects (e.g. Order Reject and Cancel Reject) are normal.

2.7 *Sequence Reset*

Sequence Reset - Gap Fill (GapFillFlag = "Y") messages should conform to standard message sequencing rules, sequence numbers in the past will be ignored and treated as PossDup="Y".

Sequence Reset - Reset (GapFillFlag not "Y") is used only as a last resort, and always by human intervention, to allow an otherwise confused session to be resumed. In these cases all chances at automatic message recovery are lost.

2.8 *Logout*

Either side may issue a Logout to gracefully close the session. The side that issues the Logout should process messages normally until it sees the Logout Acknowledgement, and then break the TCP connection. NASDAQ FUTURES will typically only request Logout after the scheduled end of a FIX session.

3 Data Types

NASDAQ FUTURES follows FIX standard for data types.

4 Fault Redundancy

A single FIX Drop account can be bound to multiple physical FIX Drop instances. These FIX Drop instances then provide "parallel" fix sessions for fault redundancy.

In this configuration, all instances are able to "drop" messages. Both incoming and outgoing sequencing will be maintained across all instances. However subscribers will be allowed to maintain only one active connection at a time. If the subscriber connects to one of the alternative instances when still connected on another instance, the old connection will be dropped and the new connection will be accepted.

5 Service Bureau Configuration

A DROP host can deliver information for one or more firms, allowing a service bureau configuration. In this case, the DROP account must be authorized by each desired firm using a DROP Port Authorization Form.

6 Standard Message Header

Message Header

Tag	Field Name	Req'd	Comments
8	BeginString	Y	FIX.4.2. Must be the first field in message.
9	BodyLength	Y	Must be second field in the message.
35	MsgType	Y	Must be the third field in the message.
34	MsgSeqNum	Y	
49	SenderCompID	Y	SenderCompID as assigned by NASDAQ FUTURES.
56	TargetCompID	Y	TargetCompID as assigned by NASDAQ FUTURES ('NSDQ')
52	SendingTime	Y	Required by FIX but not validated by NASDAQ FUTURES.
50	SenderSubID	N	Ignored. When sending an execution report NASDAQ FUTURES will not send this field.
57	TargetSubID	N	Ignored, When sending execution report NASDAQ FUTURES will duplicate first 4 characters of Client Order Id in this field.
43	PossDupFlag	N	Should be present on retransmitted messages, whether prompted by the sending system or as the result of a resend request.
97	PossResend	N	Required when message may be duplicate of another message sent under a different sequence number.
122	OrigSendingTime	N	Required for message resends but not validated by NASDAQ FUTURES.

7 Standard Message Trailer

Tag	Field Name	Req'd	Description
10	CheckSum	Y	Modulo 256 checksum of all characters in message up to and including the delimiter preceding the CheckSum field. Three digits with leading zeroes if necessary.

8 Outbound Sequenced Messages

8.1 *Execution Report*

The execution report message is used to:

1. Relay order receipt
2. Relay changes to an existing order (i.e. accept cancel and replace requests)
3. Relay order status information
4. Relay fill information on working orders

Each execution message will contain information that will describe the current state of the order and execution status as understood by NASDAQ FUTURES. State changes will be sent as separate messages and will not be used to also convey new partial fill details:

Execution Report			
Tag	**Field Name**	**Req'd**	**Comments**
	Standard Header	**Y**	**MsgType = 8**
37	OrderID	Y	OrderID, as assigned by NASDAQ FUTURES, is required to be unique for each chain of orders for a given day
70	AllocId	N	Unique identifier of the transaction that caused the execution. Will be 0 if not available
17	ExecID	Y	Unique Identifier of execution message. In case where the execType is either 1 (Partial Fill) or 2 (Filled), this identifier is match number of actual execution
20	ExecTransType	Y	Identifies transaction type Valid values: 0 = New 1 = Cancel Trade breaks will be sent with an ExecTransType of '1'. NASDAQ FUTURES does not support trade corrections.
76	ExecBroker	N	Exec Broker associated with the order as specified in order entry. See table for possible values Will not be available in quote executions
150	ExecType	Y	Describes the type of execution report. Same possible values as OrdStatus.
39	OrdStatus	Y	Describes the current state of a CHAIN of order, same scope as OrderQty, CumQty, and LeavesQty Valid Values: 0 = New 1 = Partial Fill 2 = Filled 4 = Canceled 5 = Replaced (see section-12 for Notes on replacements)
55	Symbol	Y	1 – 6 character Security Symbol for Future /option

54	Side	Y	B = Buy/Bought S = Sell/Sold
38	OrderQty	Y	Original order quantity
32	LastShares	Y	Quantity of contracts bought/sold on this (last) fill.
31	LastPx	Y	Price of this (last) fill.
151	LeavesQty	Y	Amount of contracts open for further execution. If the OrdStatus is Canceled, DoneForTheDay, Expired, Calculated, or Rejected (in which case the order is no longer active) then LeavesQty could be 0, otherwise LeavesQty = OrderQty - CumQty.
14	CumQty	Y	Currently executed contracts for chain of order.
19	ExecRefID	N	Appears on Breaks only and contains the ExecID of the trade being broken.
1	Account	N	Account of the firm. Maximum length = 10 As specified in the NewOrder
11	ClOrdID	N	ClOrdId of the Fix order being reported. Must be 30 characters or less.
117	QuoteID	N	Identifier of quote being reported. See notes for explanation how this tag will be decoded
44	Price	N	As specified in the NewOrder
41	OrigClOrdID	N	ClOrdID of the previous order (NOT the initial order of the day) when reporting a cancel/replace.
109	ClientID	Y	Used for firm identification in third-party transactions. If a ClientID was specified in the original order then it will be returned in all subsequent execution reports. If the clientId was not specified in the original order, this will refer to the clientId assigned by the port of order entry
18	ExecInst	N	Can contain only one instructions G = All or none (AON) Will not be available in a quote execution
75	TradeDate	N	Used when reporting other than current day trades.
59	TimeInForce	N	Specifies how long the order remains in effect Possible values are 0 = Market Hours (Day) 1 = Good Till cancel (GTC) 3 = Immediate or Cancel (IOC) 4 = Fill or Kill (FOK)
40	OrdType	N	'1' = Market, '2' = Limit This tag will not be present for quote execution
60	TransactTime	N	Time of execution/order creation (expressed in GMT).

47	OCCClearingCapacity	N	OCC Clearing account type C = Customer F = Firm M = NASDAQ FUTURES registered Market Maker
58	Text	N	Free format text string. In case of orders, replaces and fills, will contain supplementary information if specified on order entry In case of cancel will also contain NASDAQ FUTURES cancel reason code. See "Cancel Reasons" table.
9882	LiquidityFlag	N	Will be returned within all execution reports that contain a partial or full fill. See Liquidity Flags Table below for values
77	OpenClose	Y	O = opening position C = closing position
167	SecurityType	Y	OPT = options FUT = Futures
541	MaturityDate	Y	Month, day and year of the maturity. Format: YYYYMMDD. (e.g., 20150918 to represent Sept 18, 2015)
201	PutOrCall	Y	0 = put 1 = call Valid for securityType = 'OPT'
202	StrikePrice	Y	Strike Price for option (for security type = OPT): Valid values: 0 – 999999.99999999 Valid for securityType = 'OPT'
440	ClearingAccount	N	Up to 5-character alphanumeric.
439	ClearingFirm	N	CMTA Number (firm that will clear the trade) upto 5-character numeric. If this tag was supplied on order entry, it will be passed along here
6299	ParticipantCode	N	The Internal Participant code from original order. Please refer to NASDAQ FUTURES Rules in section-11 for more information. Valid values: A,B,C,D,E,F,G,H,I
582	CustOrderCapacity	N	This is Customer Type Indicator (CTI) code from original order. Please refer to section-11 below for more information. Valid values: 1, 2, 3, 4
5256	AccountOriginType	N	Segregated or non-segregated origin types from original order. Valid values: 1,2
6606	TraderId	Y	Trader ID (Maximum length = 8)

NASDAQ FUTURES Special Handling Instructions (Tag 76 – Exec Broker)	
Valid Tag 76 Values	**Description**
POST	Post Only
WAIT	Delayed order submission to the match engine based on NASDAQ FUTURES order exposure rules.

8.2 *Purge Notification/Purge Reset/Underlying Reset Response*

Tag	Name	Required	Description
	Standard Header	**Y**	**MsgType = r (OrderMassCancelReport)**
109	ClientID	Y	NASDAQ FUTURES MPID/ Firm mnemonic
37	OrderID	Y	Exchange assigned unique Identifier of the notification for the trading session.
530	RequestType	N	Present if this is a response to Firm's purge or Reset Request. Possibler values are: 1 – Reset 2 – Purge
531	Response	Y	1 – Purge/Reset Request Successful 9 – Rapid Fire Notification
311	UnderlyingSymbol	N	Present if tag 531 is populated with 9 or this is a response to firm reset/purged by underlying. If this tag is absent, it means that the purge/reset is for all underlyings
	Standard Trailer	**Y**	

8.3 *Pre Trade Risk Notification*

NASDAQ FUTURES will use this message to notify firms when any activity for the Group ID/ Trader ID/ Firm reaches the defined thresholds. This message is used to send the warning as well as cutoff notifications.

Tag	Name	Required	Description
	Standard Header	**Y**	MsgType = CB (PreTradeRiskNotification)
6558	RiskIdType	Y	F= Firm T= Trader G = Group
5387	RiskId	Y	Firm/ Trader Id/ Group Name
9106	RiskStatus	Y	0 = Reset 1 = 70% (Warning Notification) 2 = 80% (Warning Notification) 3 = 90% (Warning Notification) 4 = 100% (Cuttoff Notification)
5500	RiskRule	Y	The rule that triggered this notification. B = Max open exposure C = Max execution exposure D = Max total open value E = Max total executed value
5501	TriggerValue	Y	Threshold dollar value
	Standard Trailer	**Y**	

9 *Liquidity Flags:*

Flag	***Value***
A	Executed on NASDAQ FUTURES - Added Liquidity (maker)
R	Executed on NASDAQ FUTURES - Removed Liquidity (taker)
B	Block Trade Reported to NASDAQ FUTURES
E	EFRP trade reported to NASDAQ FUTURES

10 Cancel Order Reasons (Tag 58)

Reason	**Explanation**
#IOC	Immediate or Cancel Order.
#USR	User requested cancel. Sent in response to a Cancel Request Message.
#HLT	Halted. This order was cancelled due to a trading halt in this symbol.
#SUP	Supervisory. The order was manually canceled or reduced by a NASDAQ FUTURES supervisory terminal.
#SYS	System cancel.

11 NASDAQ FUTURES Rules – Participant, CTI, Origin, and OCC account type codes

NASDAQ FUTURES Participants are required to either a) enter a Participant Code on each order that represents a particular combination of CTI, Account Origin, and OCC Clearing Account Type codes, or b) enter each CTI, Origin, and OCC Clearing Account Type code explicitly on each order.

The FIX values representing the code combinations are listed below. All other code combinations are invalid. Orders received with invalid combinations will be rejected.

Valid CTI Code, Origin, OCC Account type combinations:

Participant Code	CTI Code	Origin Code	OCC C/F/M	Description
A	1	1	M	Transactions initiated and executed by an individual Member for his own account, for an account he controls or for an account in which he has ownership or financial interest; Segregated Funds
B	1	2	M	Transactions initiated and executed by an individual Member for his own account, for an account he controls or for an account in which he has ownership or financial interest; Non-Segregated Funds
C	2	1	M	Transactions executed for the proprietary account of an NASDAQ FUTURES Member; Segregated Funds
D	2	2	M	Transactions executed for the proprietary account of an NASDAQ FUTURES Member; Non-Segregated Funds
E	2	1	F	Transactions executed for the proprietary account of an NASDAQ FUTURES Member Firm; Segregated Funds
F	2	2	F	Transactions executed for the proprietary account of an NASDAQ FUTURES Member Firm; Non-Segregated Funds
G	3	1	M	Transactions where an individual Member executes for the personal account of another individual Member, for an account the other individual Member controls or for an account in which the other individual Member has ownership or financial interest; Segregated Funds
H	3	2	M	Transactions where an individual Member executes for the personal account of another individual Member, for an account the other individual Member controls or for an account in which the other individual Member has ownership or financial interest; Non-Segregated Funds
I	4	1	C	Transactions not meeting the definition of CTI 1, 2 or 3. (These should be non-Member customer transactions.) Segregated Funds

12 Notes

- Replaces
  - Note that in messages with orderStatus = 5 (Replaced), the tag origClOrdId will indicate the client Order Id of the original order being replaced, the tag clOrdId indicates the client Order Id of the replacement and the tag OrderId indicates the NASDAQ FUTURES assigned id of the replacement. However, there may be cases where one or both of the following is true:
  - The origClOrdId and the clOrdId values are the same
  - The OrderId of the replacement is the same as OrderId of the original order
  - In all replaces, the client behavior should replace the original order details with the order details provided in the replacement.

- Quote Id
  - SQF Quote Ids are specified as binary strings and must be encoded to be transmitted via ASCII 8-byte binary.

13 Support

If you have any questions or comments about this specification, email tradingservices@nasdaqomx.com. We welcome suggestions for new features or improvements.

14 Revision History

Revision #	Date	Change
1	6/26/2013	Initial Document
1.1	7/19/2013	Revision
1.2	11/20/2013	Pre Trade Risk Notification Message Type is changed to "CB"
1.3	12/06/2013	TraderId tag maximum length corrected (8)

NASDAQ OMX | NASDAQ FUTURES

Clearing Trade Interface (CTI)

Specification

Version 2.1
July 19, 2013

Contents

1. Overview

The NASDAQ FUTURES Clearing Trade Interface (CTI) is an interface that provides the user with copies of all trade related messages sent for clearing purposes.

CTI sends the following messages:

- Clearing trades, trade corrections and trade cancels on a low latency, real-time basis.
  - Routed to a given firm's connection based on:
    - Clearing Member Trade Agreement (CMTA) or Options Clearing Corp. (OCC) Number and/or
    - Exchange Account (or badge) Number and/or
    - Exchange Internal Firm Identifier (IFI)
- Optional administrative messages:
  - Directory messages to relay symbol and contract information for those symbol traded on NASDAQ FUTURES.
  - Trading action messages to inform market participants when a specific option or future is halted or released for trading on the exchange.

2. Architecture

2.1 Network protocol

Messages are transported using SoupBinTCP v4.00 on top of TCP/IP.

2.2 Failover

Message gaps due to short connection losses are easily recovered by reconnecting to the exchange with the last sequence number processed by the firm before disconnect. SoupBinTCP supports a store on the exchange side where it keeps all messages for a trading session sorted by sequence numbers regardless of the client's connection state. SoupBinTCP will send all sequenced messages starting with the sequence number requested by the firm upon login.

Upon certain failures CTI may be restarted. None of the trades are going to be lost. All messages in the CTI message store will be recreated. Trades, trade corrections and cancels will be marked as "possible duplicates". After recovery if firms reconnect with sequence number 1, they should be ready to process "possible duplicates" accordingly.

In the event of catastrophic issues, the whole exchange system may be restarted in the middle of the trading day (intraday session roll-over). In this case, a new SoupBinTCP session will be started. The CTI message store will be empty and not have trades/etc from the previous session. Firms have to login with sequence number 1. Trade ids are guaranteed to be unique across sessions for the same trading day.

2.3 Backup

The exchange provides backup connections that have the same subscription and port as the primary but different IP addresses.

If there is a physical problem with the primary, firms can switch to the corresponding backup immediately. For smooth transition, it is recommended to login to the backup with the last sequence number received on the primary before it went down.

If there is a physical problem with the whole datacenter and the problem is not going to be fixed until next day, firms have to be ready to connect to the disaster recovery site on the next day.

3. Subscription

Firms can configure their connections to route trade related messages based on the following match criteria (entitlements):

OCC clearing number(s),
or/and
Exchange badge(s) (Exchange Account number + suffix, used by market makers),
and/or
Exchange Account number(s) (used by specialists and order providers)
and/or
IFI (exchange internal firm identifier which describes a group of exchange badges or/and Exchange Accounts).

"Excluding" logic is not supported. For example, "send all trades for OCC number 123 to a given connection" is a valid configuration while "...except trades for badge 789-A" is not. Trade routing by firm names is not supported at this time either.

If an order provider overrides OCC clearing number by supplying a CMTA number in orders, CMTA number will be used for routing decisions instead of the order provider's default OCC clearing number.

By default all non-trade related messages (events, symbols, and trading actions) are routed to the firms unconditionally. It is possible to configure a connection to only send trade related messages without any events, symbols and trading actions.

4. Messages

CTI will support three basic types of messages:

- System Events
- Administrative Data
- Trade related information

A firm can request configuring its lines to send only trade related information.

All integer fields are unsigned big-endian (network byte order) binary numbers.

All alphanumeric fields are left justified and padded on the right with spaces.

Prices are integer fields. When converted to a decimal format, prices are in fixed point format with 10 whole number places followed by 8 decimal digits. So price 1.3 will be a integer number with value of 130000000.

Each message has a time located at offset 1 (Seconds, Nanoseconds). This time reflects the time when the message was created by the system not sent out. If firms connecting to CTI request to resend the message on reconnect, the message time will not change. "Seconds" is the number of whole seconds after midnight of the day and "Nanoseconds" is the remaining sub-second portion of the time. The "Seconds" field will have a range of 0 to 86400 (i.e. 12:00:00am to 11:59:60pm (Leap second)) and "Nanoseconds" will have a range of 0 to 999999999. All times in this protocol are U.S. Eastern Time zone.

4.1. System Event

The system event message is used to signal a ring wide event.

Name	Offset	Size	Value	Notes
Message type	0	1	"S"	System event message
Seconds	1	4	Integer	Seconds portion of timestamp
Nanoseconds	5	4	Integer	Nanoseconds portion of timestamp
Event code	9	1	Alpha	Refer to System Event Codes below
Version	10	1	Integer	CTI version (currently set to 4.0)

Event Code	Explanation	When (typically)
"O"	*Start of Messages.* This is always the first message sent in any trading day.	After ~6:00am
"S"	*Start of System Hours.* This message indicates that NASDAQ FUTURES is open.	7:00am
"E"	*End of System Hours.* This message indicates that NASDAQ FUTURES is closed.	~5:30pm
"C"	*End of Messages.* This is always the last message sent in any trading day.	~5:35pm

4.2. Directory

At the start of each trading day, the exchange disseminates directory messages for all symbols trading on NASDAQ FUTURES.

DIRECTORY				
Name	***Offset***	***Length***	***Value***	***Notes***
Message Type	0	1	Alpha	"R" = Directory Message
Seconds	1	4	Integer	Seconds portion of timestamp
NanoSeconds	5	4	Integer	Nanoseconds portion of timestamp
Product Type	9	1	Alpha	"F" = Future "O" = Option
Product ID	10	4	Integer	Product ID assigned daily, valid for trading day. Unique only when combined with Product Type
Symbol	14	6	Alphanumeric	Denotes the future or option symbol.
Expiration Date	20	4	Integer	option expiration in CCYYMMDD format
Explicit Strike Price	24	8	Integer	Explicit strike price. Refer to Data Types for field processing notes. Applicable for ProductType="O"
Option Type	32	1	Alpha	"C" = Call option "P" = Put option Applicable for ProductType="O"
IssueSymbol	33	13	Alphanumeric	Denotes the unique underlying issue symbol for the symbol, E.g., NAU
Tradable	46	1	Alpha	Denotes whether or not this option is tradable at NASDAQ FUTURES. The allowable values are:

DIRECTORY				
Name	***Offset***	***Length***	***Value***	***Notes***
				"Y" = symbol tradable "N" = symbol is not tradable
MPV	47	8	Integer	Minimum Price Variation for this product. All prices must be a multiple of this price.
Symbol Start Time	55	4	Integer	Timestamp in seconds when the symbol starts trading
Symbol End Time	59	4	Integer	Timestamp in seconds when the symbol ends trading
IssueType	63	1	Byte	Provides Issue Type D=Commodity C=Currency I=Index F=ETF M=Metal E=Energy
ExecAlgo	64	1	Byte	Execution Algorithm P=Price/Time R=Pro rata

Symbol Directory Notes:

1) **IMPORTANT:** The unique key for each product is the combination of the product type and the product ID. Product IDs are NOT unique across different product types.
2) The product directory messages are sent once per symbol, typically before the "Start of System Hours" System Event. Should it be necessary, intra-day updates to this message will be sent as they occur.
3) If a Trading Symbol is removed from the system intra-day, a new directory message will be sent with "Tradable" field set to "N". Any Orders/Quotes sent for this removed symbol will be rejected. All existing orders/quotes for this symbol will be purged.
4) NASDAQ FUTURES validates incoming orders/quotes prices against the MPV.

4.3. Security Trading Action

This administrative message indicates the current trading status of an option within the exchange.

After the start of system hours, the system will use the Trading Action message to relay changes in trading status for an individual trading symbol. Messages will be sent when a future or option is halted or is released for trading. If a symbol is absent from the initial daily Trading Action spin, firms should assume that the security is being treated as halted at the start of system hours.

Name	Offset	Size	Value	Notes
Message type	0	1	"H"	Trading action message
Seconds	1	4	Integer	Seconds portion of timestamp
Nanoseconds	5	4	Integer	Nanoseconds portion of timestamp
Product Type	9	1	Alpha	"F" = Future "O" = Option
Product ID	10	4	Integer	Product ID assigned daily, valid for trading day. Unique only when combined with Product Type
Current trading state	14	1	Alpha	Current trading state for the option on the exchange: "H" = Halt in effect "T" = Trading resumed

4.4. Trade

The exchange sends trades and corrections using this message. Trade cancels can be delivered using this message too if configured on the firm's request but by default CTI sends cancels using different message type (see Trade Cancels section below).

Name	Offset	Size	Value	Notes
Message type	0	1	"T"	Trade message
Seconds	1	4	Integer	Seconds portion of trade time
Nanoseconds	5	4	Integer	Nanoseconds portion of trade time
Send type	9	1	Alpha	"S" = Send (original transmission) "P" = Possible duplicate (unsolicited retransmission)
Symbol Information				
ProductType	10	1	Alpha	"F" = Future "O" = Option
ProductID	11	4	Integer	Product ID assigned daily, valid for trading day. Unique only when combined with Product Type
Issue Symbol	15	13	Alpha	Denotes the unique underlying issue symbol for the symbol, E.g., NAU
Symbol	28	6	Alpha numeric	Denotes the future or option symbol.
Expiration Date	34	4	Integer	Expiration date in CCYYMMDD
Strike price	38	8	Integer	Strike price of the option (see Messages section for field processing). Applicable to Product Type ="O" only
Option kind	46	1	Alpha	"C" = Call "P" = Put Applicable to Product Type ="O" only
Open State	47	1	Alpha	Reflects whether the symbol is currently open for trading. The allowable values are: Y = Open for auto execution N = Closed for auto execution
Trade Information				
Transaction Type	48	1	Alpha	"X" = new trade "Y" = trade correction "Z" = trade cancels (if trade cancel messages are to be sent using this message. See Trade Cancels description below)
Liquidity	49	1	Alpha	"A" = Add "R" = Remove "B" = Block Trade reported to NASDAQ Futures "E" = EFRP Trade reported to NASDAQ Futures
Correction number	50	2	Integer	Trade correction number. 0 for new trades. Used to identify version of the

				trade being corrected. Increments by 1 for each subsequent correction (see examples).
Cross ID	52	4	Integer	Trade Group Id. Ties together all clearing trades of a given atomic transaction in the matching engine. 0 if cross id is not available.
Pair ID	56	4	Integer	Pair Id. Unique per side. The buy and sell side of a given trade will have the same Pair ID.
Match ID	60	4	Integer	Execution Id (0 for manual trades). Uniquely identifies an execution for a given day. Can be used to match executions sent on SQF or other feeds. The buy and sell side of a given trade will have different Match IDs
Auction ID	64	4	Integer	Auction id for trades resulting from an auction. 0 if none.
Auction Type	68	1	Alpha	' ' = No Auction
Ref Pair ID	69	4	Integer	For corrected trades, pair ID of prior trade. 0 if never corrected. See examples for details.
Ref correction number	73	2	Integer	For corrected trades, correction number of prior trade. 0 if never corrected. See examples for details.
Execution Type	75	1	Alpha	Please refer to Appendix B for values of Execution Type.
Trade side	76	1	Alpha	"B" = Buy "S" = Sell
Trade price	77	8	Integer	Trade price (see Messages section for field processing)
Trade contracts	85	4	Integer	Number of contracts traded.
Side changed	89	1	Alpha	"Y" = for new trades and corrections that affected this side of the trade "N" = for corrections that affected only contra side (see examples for details)
Reserved[1]	90	8	N/A	Reserved for future extension
Clearing Information				
OCC clearing number	98	4	Integer	OCC clearing number or CMTA provided by firm
Give-up OCC clearing number	102	4	Integer	OCC clearing number of the giving-up firm if OCC clearing number above is CMTA. Otherwise 0.
Exchange clearing number	106	4	Integer	Exchange assigned clearing number for the firm
Exchange Account	110	4	Integer	Exchange assigned Account number
Exchange suffix	114	1	Alpha	Exchange assigned Account suffix for market makers (badge suffix)

Participant Type	115	1	Alpha	Participant Type See Appendix A for values.
CTI Code	116	1	Alpha	CTI Code See Appendix A for values.
Origin Code	117	1	Alpha	Origin Code See Appendix A for values.
OCC Code	118	1	Alpha	OCC Code See Appendix A for values.
Multi Account	119	5	Alpha numeric	Sub account if provided in the order (FIX tag 440 "Clearing Account")
Account	124	32	Alpha numeric	Account as specified in the order (FIX tag 1 "Account")
Reserved[1]	156	50	N/A	Reserved for future extension
Origin Information				
Firm	206	4	Alpha numeric	Firm ID
Trader ID	210	8	Alpha numeric	Trader Id
Order date	218	4	Integer	Date when the order/quote was received in CCYYMMDD
Order ID	222	30	Alpha numeric	Right padded FIX order id or spaces
Quote ID	252	8	Binary	Quote ID for quotes with IDs (from SQF feed v6 and higher). Right padded "1" for quotes without ids. Spaces if this side of the trade is a not a quote.
SQF Order ID	260	8	Binary	SQF Order ID for SQF orders with IDs (from SQF feed v6 and higher). Right padded "1" for SQF Orders without IDs. Spaces if this side of the trade is a not an SQF order.
Supplementary ID	268	13	Alpha numeric	Supplementary ID from FIX orders (FIX tag 58 "Text")
Order Indicators	281	2	Integer	Bit 1 = Directed (0-no, 1-yes) Bit 2 = Post Only (0-no, 1-yes) (Bit 3 = MKT Order (0-no, 1-yes) Bits 4-15 = not used Bit 15 is least significant bit. Note: Directed, Post Only and MKT Order indicators will not be available for Manual Trades, Trade Correction and Cancels
Order Type	283	1	Alpha	"O" = FIX Order "Q" = SQF Quote "W" = SQF Order " "(space) = Others
Order Size	284	4	Integer	Size of the order/quote or 0 for manual trades, trade correction and cancels.
Order Price	288	8	Integer	Price of the order/quote. 0 for MKT Orders (Indicated by MKT bit in OrderIndicators above). 0 for manual trades, trade correction and cancels.
TIF	296	1	Alpha	Time In Force for the order/quote

				'I' = IOC 'D' = DAY 'G' = GTC ' ' = Not Applicable (For quotes, manual trades, trade cancel and corrections).
Reserved[1]	297	8	N/A	Reserved for future extension

Notes:

1) Assumptions about the contents of reserved fields are not recommended. They can be zero, spaces, or any other values.

4.5. Cancel Trade

By default CTI sends trade cancels using this message. The alternative is to request configuring CTI for a given firm and connection block to send "extended" cancels with all the trade information using Trade message (described above) with transactionType set to Z.

Name	Offset	Length	Value	Notes
Message Type	0	1	"V"	Cancel trade message
Seconds	1	4	Integer	Seconds portion of cancel time
Nanoseconds	5	4	Integer	Nanoseconds portion of cancel time
Send type	9	1	Alpha	"S" = Send (original transmission) "P" = Possible duplicate (unsolicited retransmission)
Product Type	10	1	Alpha	"F" = Future "O" = Option
Product ID	11	4	Integer	Product ID assigned daily, valid for trading day. Unique only when combined with ProductType
Issue Symbol	15	13	Alpha	Denotes the unique underlying issue symbol for the symbol, E.g., NAU
Symbol	28	6	Alphanumeric	Denotes the future or option symbol.
Expiration date	34	4	Integer	Expiration date in CCYYMMDD
Strike price	38	8	Integer	Strike price of the option (see Data Types for field processing). Applicable for ProductType = "O"
Option kind	46	1	Alpha	"C" = Call "P" = Put " "(space) = Future Applicable for ProductType = "O"
Correction number	47	2	Integer	Trade correction number. 0 for new trade.
Cross ID	49	4	Integer	Trade Group Id. Ties together all clearing trades of a given atomic transaction in the matching engine.
Pair ID	53	4	Integer	Pair Id. Unique per side. The buy and sell side of a given trade will have the same Pair ID.
Match ID	57	4	Integer	Execution Id (0 for manual trades). Uniquely identifies an execution for a given day. Can be used to match executions sent on SQF or other feeds. The buy and sell side of a given trade will have different Match IDs
Trade side	61	1	Alpha	"B" = Buy "S" = Sell

4.6. Pre Trade Risk Management

The Pre Trade Risk Notification message is used to inform firms that one of their pre trade risk monitors has changed state. The state change could be a warning, a cutoff or a reset.

Pre Trade Risk Notification Message

Name	Offset	Length	Value	Notes
Type	0	1	Alpha	"W" = Pre Trade Risk Notification Message
Seconds	1	4	Integer	Seconds portion of the timestamp
Nanoseconds	5	4	Integer	Nanoseconds portion of the timestamp
RiskIDType	9	1	Alpha	F= Firm T= Trader G = Group
RiskID	10	8	Alphanumeric	ID of Pre Trade Risk Monitor whose status is being updated. Left justified, padded with spaces to the right. Value depends on Monitor Type: Type "F" - 4 byte firm mnemonic Type "T" - 8 byte Trader ID Type "G" - 8 byte Group ID
RiskStatus	18	1	Alpha	Status " " - Reset (not alerted) "7" - 70% limit warning "8" - 80% limit warning "9" - 90% limit warning "X" - Cutoff limit reached.
Pre Trade Risk Parameter	19	1	Alpha	Pre Trade Risk Parameter warning/cutoff that was triggered " " - N/A (if status is Reset) "A" - Open Exposure Value "B" - Open Total Value "C" - Exec Exposure Value "D" - Exec Total Value
Trigger Value	20	8	Binary	The value that caused the status change. Note this will be 0 on a Reset.

5. Examples

5.1 Ref Pair Id and Correction Number in Trade message

As part of a transaction in the trading system, participant B buys 100 contracts from participant S:

> CTI sends a clearing trade to both participants with a new pairId (let's say 5) and correctionNumber 0. Since this completely new trade (#5/0) doesn't refer to any prior trades, refPairId and refCorrectionNumber in trade messages for buyer and seller are both set to 0.

Later back office changes the trade #5/0 taking 70 contracts from seller S and assigning them to another seller (let's say participant S2). The buyer stays the same:

> CTI sends a corrected trade (transactionType field is set to Y "Trade Correction") to buyer B and seller S for 30 contracts with unchanged pairId (5) and correctionNumber incremented by 1 (0+1=1). refPairId and refCorrectionNumber in messages for this trade #5/1 are set to refer to prior trade #5/0.
>
> Also as part of the change to the trade #5/0, CTI sends a new trade (transactionType X "new trade") to buyer B and seller S2 for 70 contracts with new paireId (let's say 6) and correctionNumber 0. refPairId and refCorrectionNumber in messages for this trade #6/0 are set to refer to prior trade #5/0.

If back office changes the trade #5/1 further taking 10 more contracts from seller S and assigning them to another seller (let's say participant S3 this time) with the same buyer:

> CTI will send a corrected trade (transactionType field is set to Y "Trade Correction") to buyer B and seller S for 20 contracts with unchanged pairId (5) and correctionNumber incremented by 1 (1+1=2). refPairId and refCorrectionNumber in messages for this trade #5/2 are set to refer to prior trade #5/1.
>
> Also as part of the change to the trade #5/1, CTI will send a new trade (transactionType X "new trade") to buyer B and seller S3 for 10 contracts with new pairId (let's say 7) and correctionNumber 0. refPairId and refCorrectionNumber in messages for this trade #7/0 are set to refer to trade #5/1.

5.2 sideChanged in Trade message

After participant B buys 100 contracts from participant S:

> CTI sends a clearing trade to both participants with sideChanged set to Y(es).

If later back office changes price of the trade:

> CTI will send a corrected trade (transactionType field set to Y "Trade Correction") to both participants with sideChanged set to Y(es)

Later back office changes the trade re-assigning all contracts on the sell side from participant S to participant S2 and keeping the same buyer:

> CTI sends a corrected trade (transactionType = "Trade Correction") to buyer B with sideChanged set to N(o) because all that changed for the buyer is a contra side. Participant S gets a trade cancel, and participant S2 gets a new trade with sideChanged set to Y(es).

If later back office splits the sell side between existing seller S2 and 5 more sellers keeping the same buyer:

> CTI will send 6 corrected trades to buyer B with sideChanged set to N(o) because total contracts didn't change (only contra side). Participant S2 gets a trade correction too but his sideChanged will be Y(es) because the seller's contracts got reduced. All other new sellers will get new trades with sideChanged set to Y(es).

6. Support

Department	Phone	Email
Operation Center (NOC)	+1 212 231 5049	nocgroup@nasdaqomx.com
Subscriber Services	+1 212 231 5180	subscriber@nasdaqomx.com

Appendix A – – Participant Types

Firms sending messages requiring Participant Type (orders, quotes) will submit one of the Participant Types below. Each Participant Type value corresponds to a specific combination of Customer Type Identifier (CTI) code, Origin Code, and OCC Account Type Code.

Participant type	Corresponding combination		
Value	CTI Code	Origin Code	OCC C/F/M
A	1	1	M
B	1	2	M
C	2	1	M
D	2	2	M
E	2	1	F
F	2	2	F
G	3	1	M
H	3	2	M
I	4	1	C

Appendix B – Execution Type Code

Code	Description	
"A"	REGULAR	Indicates that the transaction was a regular automated system match.
"L"	Regular Late	Regular automated system match that was reported late.
"B"	Block	Block Trade – trade meeting minimum size for block status as defined in the contract specifications in the NASDAQ FUTURES rule book.
"P"	EFP	Exchange for Physical (EFP)
"R"	EFR	Exchange for Risk (EFR)
"O"	EOO	Exchange of Options for Options (EOO)
"U"	Block As Of	As Of Block Trade
"V"	EFP As Of	As Of Exchange for Physical (EFP) Trade

"W"	EFR As Of	As Of Exchange for Risk (EFR) Trade
"X"	EOO As Of	As Of Exchange of Options for Options (EOO) Trade

Appendix C – Revision Control Log

Revision #	Date	Change
2	6/26/2013	Initial Document
2.1	7/19/2013	Revision