

OUCH 5.0

Order Entry Specification

Updated April, 2023

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1. Overview

NASDAQ accepts limit orders from system participants and executes matching orders when possible. Non-matching orders may be added to the NASDAQ Limit Order Book, a database of available limit orders, where they wait to be matched in price-time priority.

OUCH is a simple protocol that allows NASDAQ participants to enter, replace, and cancel orders and receive executions. It is intended to allow participants and their software developers to integrate NASDAQ into their proprietary trading systems or to build custom front ends.

OUCH only provides a method for participants to send orders to NASDAQ and receive updates on those orders entered. For information about all orders entered into and executed on the NASDAQ book, refer to the ITCH protocol (available separately).

OUCH is the low-level native protocol for connecting to NASDAQ. It is designed to offer the maximum possible performance at the cost of flexibility and ease of use. For applications that do not require this extreme level of performance, NASDAQ offers other, more standard interfaces that may be more suitable and easier to develop to.

1.1. Architecture

The OUCH protocol is composed of logical messages passed between the OUCH host and the client application. Each message type has a fixed message length.

All messages sent from the OUCH host to the client are assumed to be sequenced, and their delivery must be guaranteed by some lower level protocol. The SoupBinTCP (available separately) are the typical lower level protocols used to guarantee the delivery and sequencing of OUCH messages sent from the host to the client.

Messages sent from the OUCH client to the 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. Each physical OUCH host port is bound to a NASDAQ-assigned logical OUCH Account. On a given day, every order entered on OUCH is uniquely identified by the combination of the logical OUCH Account and the participant-created UserRefNum field.

1.2. Data Types

Alpha fields may contain upper and lowercase characters.

All fixed-width alpha fields are left-justified and padded on the right with spaces.

All Numeric fields are binary formatted, big-endian numbers. Four flavors of numeric fields are supported: Longs (8 bytes), Integers (4 bytes), Shorts (2 bytes), and Bytes (1 byte).

Sizes (shares quantities, field lengths) should be treated as unsigned values.

Prices are numeric fields with an implied 4 decimal places. Prices are to be treated as unsigned numeric fields, unless designated otherwise. The maximum price currently supported is \$199,999.9900 (decimal, 7735939C hex). To flag an order as a market order for a cross, use the special price of \$214,748.3647 (decimal, 7FFFFFFF hex). Orders entered with a price of \$200,000.00 or the max integer value will also be treated as market orders.

A UserRefNum is an unsigned numeric. For a given OUCH port, the UserRefNum is used as a transaction identifier, and must be both unique and strictly increasing throughout the trading day. The UserRefNum begins at 1 and the system ignores new order requests identified with UserRefNums lower than the last one processed, assuming they are retransmissions.

Client however has an option to multiplex their order flow via the use of an optional tag UserRefIdx. When this tag is present the UserRefNum is then assumed to be linked to an "order flow channel" specified by the UserRefIdx and the above rules regarding the use of UserRefNum are applied only within this "order flow channel" instead of the port globally.

CIOrdID is alphanumeric and non-binary. All letters and numbers are allowed, as well as spaces.

An optional attribute on an order is communicated via a TagValue element, constructed as follows:

TagValue element

| Field | Offset | Length | Type | Notes |
|-------------|--------|----------|----------|---|
| Length | 0 | 1 | Numeric | Remaining length of the TagValue element |
| OptionTag | 1 | 1 | Numeric | Identifies the option (see Appendix B) |
| OptionValue | 2 | variable | variable | Value of the option |

The set of optional attributes are set on an order via an options appendage. Each of the individual options formatted as a TagValue element, and the options appendage is then constructed by concatenating together the selected set of options. See [Appendix B](#) for more details.

1.3. Fault Redundancy

A single OUCH Account can be bound to multiple physical OUCH machines. These OUCH machines then act as mirrors of each other for fault redundancy. In this configuration, both machines are able to accept orders and cancel requests, and any outbound messages would be simultaneously generated by both physical OUCH hosts.

2. Inbound Messages

Inbound messages are sent from the participant's application to the OUCH host. They are not sequenced. All Inbound Messages may be repeated benignly. This gives the client the ability to re-send any Inbound message if it is uncertain whether NASDAQ received it in the case of a connection loss or an application error.

The idea of benign inbound message retransmission with end-to-end acknowledgement is fundamental to NASDAQ's fail-over redundancy. If your connection ever fails, there is no way for you to know if pending messages actually made it over the link before the failure. A robust OUCH client can safely re- send any pending messages over a mirrored link without worrying about generating duplicates. This applies to NASDAQ's disaster fail over capability as well; if NASDAQ ever needs to fail over to the backup site, some messages sent at the moment of the failure may be lost. A robust application can simply re- send the pending messages, making the fail over seamless to the end user.

All inbound messages on an OUCH port are processed sequentially. This guarantees that if two orders are entered consecutively on the same connection, the first order entered will always be accepted first.

2.1. Type O – Enter Order

Enter Order

| Name | Offset | Length | Value | Notes |
|------------|--------|--------|-------------|--|
| Type | 0 | 1 | 'O' | Identifies this message as Enter Order Message type |
| UserRefNum | 1 | 4 | UserRefNuma | As described above in Data Types. UserRefNum must be day-unique and strictly increasing for each OUCH account. |
| Side | 5 | 1 | Alpha | B= buy S = sell T = sell short E = sell short exempt |
| Quantity | 6 | 4 | Interger | Total number of shares. Must be greater than zero and less than 1,000,000. |
| Symbol | 10 | 8 | Alpha | Stock Symbol |
| Price | 18 | 8 | Price | The price of the order. Please refer to the Data Types section for more clarification. |

Enter Order

| Name | Offset | Length | Value | Notes |
|-------------------------------|--------|--------|----------|---|
| Time In Force | 26 | 1 | Alpha | Corresponds to TimeInForce (59) in Nasdaq FIX 0 = Day (Market Hours) 3 = IOC 5 = GTX (Extended Hours) 6 = GTT (ExpireTime needs to be specified) E = After hours Y = visible |
| Display | 27 | 1 | Alpha | N = hidden A = attributable |
| Capacity | 28 | 1 | Alpha | A = agency P = principal R = riskless O = other |
| InterMarket Sweep Eligibility | 29 | 1 | Alpha | Y = eligible N = not eligible |
| CrossType | 30 | 1 | Alpha | N = continuous market O = opening cross (Nasdaq only) C = closing cross (Nasdaq only) H = halt/IPO (Nasdaq only) S = supplemental (Nasdaq only) R = retail (BX only) E = extended life (Nasdaq only) A = after hours close (Nasdaq only) |
| ClOrdID | 31 | 14 | Alpha | Customer order identifier. ClOrdID will not be checked for day-uniqueness for each OUCH account. |
| Appendage Length | 45 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 47 | var | TagValue | The available options supported on this message are: Firm MinQty CustomerType MaxFloor PriceType PegOffset DiscretionPrice DiscretionPriceType DiscretionPegOffset PostOnly RandomReserves ExpireTime TradeNow HandleInst GroupID SharesLocated LocateBroker UserRefIdx |

See [Appendix B](#) for more detail

2.2. Type U – Replace Order Request

The Replace Order Message allows you to cancel and replace an existing order in a single message. This is more efficient than canceling an existing order and immediately succeeding it with a new order. Replacing an order always gives it a new timestamp for its time priority on the book. If you wish you simply partially cancel an order and retain its time priority, send a Cancel Order Message instead.

There are two Order UserRefNums in the Replace Order Message. The first must be filled out with the Order UserRefNum of the existing order; the second must be a new Order UserRefNum for the replacement. The replacement Order UserRefNum must be unique in the same way as Order UserRefNums are in the Enter Order Message, and replacement Order UserRefNums may not be the same as the UserRefNum sent in Enter Order Messages. Any replacement Order UserRefNum that has already been used in another Enter Order Message or Replace Order Message will be ignored.

NASDAQ may respond to the Replace Order Message in several ways:

1. If the order for the existing Order UserRefNum is no longer live or if the replacement Order UserRefNum was already used, the replacement will be silently ignored. The replacement Order UserRefNum will not be consumed and may be reused in this case.
2. If the order for the existing Order UserRefNum is live but the details of the replace are invalid (e.g.: new Shares >= 1,000,000), a Cancel Order Message will take the existing order out of the book. The replacement Order UserRefNum will not be consumed, and may be reused in this case.
3. If the order for the existing Order UserRefNum is live but the existing order cannot be canceled (e.g. the existing Order is a cross order in the late period), there will be an Order Reject Message. This reject message denotes that no change has occurred to the existing order; the existing order remains fully intact with its original instructions. The Order Reject Message consumes the replacement Order UserRefNum, so the replacement Order UserRefNum may not be reused.
4. If the order for the existing Order UserRefNum is live and can be replaced, you will receive either a Replaced Message or an Atomically Replaced and Canceled Message.

Replace Order Messages may be chained together, so that a single order is replaced over and over again. There is no limit to the number of replaces; however no single order/replace chain may execute more than 999,999 shares cumulatively.

The Shares on the replace denote the total number of shares liable for the whole chain. Here is an example:

- Enter Order Message for 500 shares
- Accepted Message for 500 shares
- Executed Message for 100 shares

At this point, you decide to replace the order. If you want to be exposed for

- A. the remaining 400 shares, send the Replace Order Message with 500 Shares. This 500 equals the 400 exposed plus the 100 previously executed.
- B. a new 500 shares, send the Replace Order Message with 600 Shares. This 600 equals the 500 new shares plus the 100 previously executed.

This may seem a bit confusing at first, but it inhibits the risk of double-liability throughout the order/replace chain.

Replace Order Request

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'U' | Identifies this message as Replace Order Message type |
| Order Message type | | | | |
| OrigUserRefNum | 1 | 4 | UserRefNum | This must be filled out with the Order UserRefNum sent on the Enter Order Message or last Replace Order Message. |

Replace Order Request

| Name | Offset | Length | Value | Notes |
|-------------------------------|--------|--------|------------|---|
| UserRefNum | 5 | 4 | UserRefNum | As described above in Data Types. The replacement Order UserRefNum must be unique and strictly increasing for each OUCH account. |
| Quantity | 9 | 4 | Integer | Total number of shares liable, inclusive of previous executions and Self Match Prevention decremented shares on this order chain. Must be greater than zero and less than 1,000,000. |
| Price | 13 | 8 | Price | The price of the replacement order. Please refer to the section in Data Types for more clarification. |
| Time In Force | 21 | 1 | Alpha | Corresponds to TimeInForce (59) in Nasdaq FIX 0 = Day (Market Hours) 3 = IOC 5 = GTX (Extended Hours) 6 = GTT (ExpireTime needs to be specified) |
| Display | 22 | 1 | Alpha | Y = visible N = hidden A = attributable |
| InterMarket Sweep Eligibility | 23 | 1 | Alpha | Y = eligible N = not eligible |
| ClOrdID | 24 | 14 | Alpha | Customer order identifier for replacement order |
| Appendage Length | 38 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 40 | var | Options | The majority of fields from the Enter Order Message are supported in this message, except for Firm and GroupID, which are inherited from the original order. If UserRefIdx is used on the original order, it must also be present and match here. MinQty MaxFloor PriceType PostOnly ExpireTime TradeNow HandleInst RandomReserves PegOffset DiscretionPrice DiscretionPriceType DiscretionPegOffset SharesLocated LocateBroker UserRefIdx Side See Appendix B for more detail |

2.3. Type X – Cancel Order Request

The Cancel Order Message is used to request that an order be canceled or reduced. In the Cancel Order Message, you must specify the new "intended order size" for the order. The "intended order size" is the maximum number of shares that can be executed in total after the cancel is applied.

Note that the Appendage Length and Optional Appendage fields are optional on this message type.

Cancel Order Request

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'X' | Cancel Order Message |
| UserRefNum | 1 | 4 | UserRefNum | The Order UserRefNum as was originally transmitted in an Enter Order Message |
| Quantity | 5 | 4 | Integer | This is the new intended order size. This limits the maximum number of shares that can potentially be executed in total after the cancel is applied. Entering a zero here will cancel any remaining open shares on this order. |
| Appendage Length | 9 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 11 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

To cancel the entire balance of an order, you would enter a Cancel Order Message with a Shares field of zero.

Note that the only acknowledgment to a Cancel Order Message is the resulting Canceled Order Message. There is no “too late to cancel” message since by the time you received it, you would already have gotten the execution. Superfluous Cancel Order Messages are silently ignored.

2.4. Type M – Modify Order Request

The Modify Order Message is used to request modifications that will not affect order priority on the book. Since priority of the order does not change (exception noted), allowed modifications are restricted to only the ones specified in the message details below. Increasing share amount is not allowed and requests to do so will be ignored.

Note that the Appendage Length and Optional Appendage fields are optional on this message type.

Modify Order Request

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | “M” | Modify Order Message |
| UserRefNum | 1 | 4 | UserRefNum | The Order UserRefNum as was originally transmitted in an Enter Order Message |
| Side | 5 | 1 | Alpha | The new side to be associated with the order. B= buy S = sell T = sell short E = sell short exempt Only the following modifications are allowed: S ◀ ▶ E S ◀ ▶ T E ◀ ▶ T |
| Quantity | 6 | 4 | Integer | This is the new intended order size. This limits the maximum number of shares that can potentially be executed in total after the cancel is applied. Entering a zero here will cancel any remaining open shares on this order. |
| Appendage Length | 10 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 12 | var | TagValue | The available options supported on this message are: UserRefIdx SharesLocated LocateBroker See Appendix B for more detail |

2.5. Type C - Mass Cancel Request

The Mass Cancel Request message allows firms to initiate the cancellation of one or more orders that are currently booked at the exchange if they match the criteria specified in the request. If no optional criteria are specified then all orders for the specified firm on the account will be cancelled. Optional criteria can be specified in the Appendage field using the tags described below.

Mass Cancel Request

| Name | Offset | Length | Value | Notes |
|-----------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'C' | Identifies this message as a Mass Cancel Request message type |
| User Reference Number | 1 | 4 | UserRefNum | As described above in Data Types. User Reference Numbers must be day-unique and strictly increasing for each Order Port. |
| Firm | 5 | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple firms in a Service Bureau configuration. |
| Symbol | 9 | 8 | Alpha | Optional, Space filled if not specified Symbol to mass cancel orders on |
| Appendage Length | 17 | 2 | Integer | Length of entire optional appendage. Zero (0) if no appendage follows. |
| Optional Appendage | 19 | var | TagValue | The available options supported on this message are: Side Group ID UserRefIdx For Group ID: if the value is set to 0, all orders without a Group ID will be canceled. If the value is not specified, all orders, regardless of whether they have a Group ID or not, will be canceled. See Appendix B for more detail |

2.6. Type D – Disable Order Entry Request

The Disable Order Entry Request allows firms the ability to initiate the following requests to block submissions of new orders on a particular account.

Disable Order Entry Request

| Name | Offset | Length | Value | Notes |
|-----------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'D' | Identifies this message as a Disable Order Entry Request message type. |
| User Reference Number | 1 | 4 | UserRefNum | As described above in Data Types. User Reference Numbers must be day-unique and strictly increasing for each Order Port |
| Firm | 5 | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple firms in a Service Bureau configuration. |
| Appendage Length | 9 | 2 | Integer | The length of the remaining Optional Appendage field. |

Disable Order Entry Request

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|----------|--|
| Optional Appendage | 11 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

2.7. Type E – Enable Order Entry Request

The Enable Order Entry Request allows firms the ability to initiate the following requests to unblock submission of new orders on a particular account.

Enable Order Entry Request

| Name | Offset | Length | Value | Notes |
|-----------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'E' | Identifies this message as a Enable Order Entry Request message type |
| User Reference Number | 1 | 4 | UserRefNum | As described above in Data Types. User Reference Numbers must be day-unique and strictly increasing for each Order Port |
| Firm | 5 | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple firms in a Service Bureau configuration. |
| Appendage Length | 9 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 11 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

2.8. Type Q – Account Query Request

The Account Query Request message can be used when recovering state to request the next available UserRefNum that can be used for identifying new transactions.

Note that the Appendage Length and Optional Appendage fields are optional on this message type.

Account Query Request

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|----------|--|
| Type | 0 | 1 | 'Q' | Account Query Request Message |
| Appendage Length | 1 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 3 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3. Outbound Messages

Outbound messages are generated by the OUCH host port and received by your client application.

3.1. Type S – System Event

System Event Messages signal events that affect the entire NASDAQ system:

System Event Message

| Name | Offset | Length | Value | Notes |
|------------|--------|--------|-----------|--|
| Type | 0 | 1 | 'S' | System Event Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| Event Code | 9 | 1 | Alpha | S = Start Of Day, indicating that exchange is open and is ready to accept orders. E = End Of Day, indicating that the exchange is closed and will no longer accept new orders. Note that it is still possible to receive breaks and cancels after this event. |

3.2. Type A – Order Accepted

This message acknowledges the receipt and acceptance of a valid Enter Order Message. The data fields from the Enter Order Message are echoed back in this message. Note that the accepted values may differ from the entered values for some fields.

Accepted Messages normally come before any Executed Messages or Canceled Messages for an order. However, when the Order State field of an Accepted Message is Order Dead ("D"), no additional messages will be received for that order, as Order Dead means that the order was accepted and automatically canceled.

Order Accepted

| Name | Offset | Length | Value | Notes |
|-------------------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'A' | Accepted Message Identifier |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The order UserRefNum as entered |
| Side | 13 | 1 | Alpha | The side as entered |
| Quantity | 14 | 4 | Integer | Total number of shares accepted |
| Symbol | 18 | 8 | Alpha | Stock symbol as entered |
| Price | 26 | 8 | Price | The accepted price of the order. Please note that the accepted price could potentially be different than the entered price if the order was re-priced by the ex-change on entry. The accepted price will always be better than or equal to the entered price. |
| Time In Force | 34 | 1 | Alpha | The accepted Time in Force of the order. Please note that the accepted Time in Force may potentially be different than the entered Time in Force. The accepted Time in Force will always be equal to or shorter in scope than the entered Time in Force |
| Display | 35 | 1 | Alpha | The accepted display on the order Y = visible N = hidden A = attributable Z = conformant |
| Order Reference Number | 36 | 8 | Numeric | The day-unique Order Reference Number assigned by NASDAQ to this order |
| Capacity | 44 | 1 | Alpha | The capacity specified on the order |
| InterMarket Sweep Eligibility | 45 | 1 | Alpha | Y = eligible N = not eligible |
| CrossType | 46 | 1 | Alpha | The cross type as entered |
| Order State | 47 | 1 | Alpha | L = Order Live D = Order Dead |
| ClOrdID | 48 | 14 | Alpha | Customer order identifier |

Order Accepted

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|----------|--|
| Appendage Length | 62 | 2 | Integer | The length of the remaining Optional Appendage field. The available options supported on this message are: Firm MinQty CustomerType MaxFloor PriceType PegOffset DiscretionPrice DiscretionPriceType DiscretionPegOffset |
| Optional Appendage | 64 | var | TagValue | PostOnly RandomReserves Route ExpireTime TradeNow HandleInst BBO Weight Indicator GroupID SharesLocated UserRefIdx See Appendix B for more detail |

3.3. Type U – Order Replaced

This message acknowledges the receipt and acceptance of a valid Replace Order Message. The data fields from the Replace Order Message are echoed back in this message. Note that the accepted values may differ from the entered values for some fields. You will receive one and only one of these two for each replacement.

Like Accepted Messages, Replaced Messages use the Order State field to denote that a replace was accepted and then automatically canceled when the Order State is Order Dead ("D"). No further Executed Messages nor Canceled Messages will be received for the replaced order unless the Order State is not Order Dead.

The Shares field on the replace indicates how many shares were left exposed when the replacement completed. E.g.:

- Enter Order Message for 500 shares
- Accepted Message for 500 shares
- Executed Messages for 100 shares
- Replace Order Message for 500 shares
- Replaced Messages with 400 shares

The 400 shares in the Replace Message indicate that 400 shares exist on the book. This same scenario could happen if the execution was in flight back to you while the Replace Order Message was traveling to NASDAQ as follows:

- Enter Order Message for 500 shares
- Accepted Message for 500 shares
- Replace Order Message for 500 shares

- Executed Messages for 100 shares on original order
- Replaced Messages with 400 shares

Replaced Message

| Name | Offset | Length | Value | Notes |
|------------------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'U' | Replaced Message Identifier |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| OrigUserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order being replaced |
| UserRefNum | 13 | 4 | UserRefNum | The UserRefNum of the replacement order, as entered |
| Side | 17 | 1 | Alpha | The side as entered |
| Quantity | 18 | 4 | Integer | Total number of shares outstanding |
| Symbol | 22 | 8 | Alpha | Stock symbol as entered |
| Price | 30 | 8 | Price | The accepted price of the replacement. Please note that the accepted price could potentially be different than the entered price if the order was re-priced by NASDAQ on entry. The accepted price will always be better than or equal to the entered. |
| Time In Force | 38 | 1 | Alpha | The accepted Time in Force of the replacement. Please note that the accepted Time in Force may potentially be different than the entered Time in Force. The accepted Time in Force will always be equal to or shorter in scope than the entered Time in Force |
| Display | 39 | 1 | Alpha | The accepted display type for the order. Y = visible N = hidden A = attributable Z = conformant |
| Order Reference Number | 40 | 8 | Numeric | The day-unique Order Reference Number assigned by NASDAQ to this order |
| Capacity | 48 | 1 | Alpha | The capacity specified on the order |
| InterMarketSweep Eligibility | 49 | 1 | Alpha | Y = eligible N = not eligible |
| CrossType | 50 | 1 | Alpha | The cross type as entered |
| Order State | 51 | 1 | Alpha | L = Order Live D = Order Dead |
| ClOrdID | 52 | 14 | Alpha | Customer order identifier for replacement order |
| Appendage Length | 66 | 2 | Numeric | The length of the remaining Optional Appendage field. |
| Optional Appendage | 68 | var | Options | The available options supported on this message are: Firm MinQty MaxFloor PriceType PostOnly ExpireTime TradeNow HandleInst BBO Weight Indicator UserRefIdx See Appendix B for more detail |

3.4. Type C – Order Canceled

A Canceled Message informs you that an order has been reduced or canceled. This could be acknowledging a Cancel Order Message, or it could be the result of the order timing out or being canceled automatically.

Please note that a Canceled Message does not necessarily mean the entire order is dead; some portion of the order may still be alive.

For the Order Canceled message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Canceled Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'C' | Canceled Order Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order being (partially) canceled |
| Quantity | 13 | 4 | Numeric | The number of shares being decremented from the order. This number is incremental, not cumulative |
| Reason | 17 | 1 | Alpha | Reason the order was reduced or canceled. See Appendix C for the available reasons. |
| Appendage Length | 18 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 20 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.5. Type D – AIQ Canceled

For the AIQ Canceled message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

AIQ Canceled Message

| Name | Offset | Length | Value | Notes |
|---------------------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'D' | Canceled Order Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order being reduced |
| Decrement Shares | 13 | 4 | Numeric | The number of shares just decremented from the order. This number is incremental, not cumulative. |
| Reason | 17 | 1 | Alpha | Reason the order was reduced or canceled. For an AIQ Cancel message, this value will always be "Q". |
| Quantity prevented from trading | 18 | 4 | Integer | Shares that would have executed if the trade would have occurred. Depending on AIQ type and the sizes of orders in question the value for this field could either be the same or different than the Decrement Shares field. For "Decrement both" they are always the same. For "Cancel oldest" they will be different if the incoming order is smaller than the resting order. |
| Execution Price | 22 | 8 | Price | Price at which the trade would have occurred |
| Liquidity Flag | 30 | 1 | Alpha | Liquidity flag the order would have received. See Appendix E . |
| AIQ Strategy | 31 | 1 | Alpha | AIQ strategy used on the cancelled order. |
| Appendage Length | 32 | 2 | Integer | The length of the remaining Optional Appendage field. |

AIQ Canceled Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|----------|--|
| Optional Appendage | 34 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.6. Type E – Order Executed

An Executed Order Message informs you that all or part of an order has been executed.

Executed Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'E' | Order Executed Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order being executed |
| Quantity | 13 | 4 | Numeric | The incremental number of shares just executed. |
| Price | 17 | 8 | Price | The price at which the shares were executed |
| Liquidity Flag | 25 | 1 | Alpha | Liquidity flag the order would have received. See Appendix E |
| Match Number | 26 | 8 | Numeric | Assigned by the exchange to identify the trade. Both the buy and the sell executions participating in the trade will share the same match number. |
| Appendage Length | 34 | 2 | Numeric | The length of the remaining Optional Appendage field. |
| Optional Appendage | 36 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.7. Type B – Broken Trade

A Broken Trade Message informs you that an execution has been broken. The trade is no longer good and will not clear. The reason for the break is given.

You will always get an Executed Order Message prior to getting a Broken Trade Message for a given execution.

For the Broken Trade message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Broken Trade Message

| Name | Offset | Length | Value | Notes |
|--------------|--------|--------|------------|---|
| Type | 0 | 1 | 'B' | Broken Trade Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order whose execution corresponding to given Match Number is being broken |
| Match Number | 13 | 8 | Numeric | Match Number as transmitted in the Executed Order Message being broken. |

Broken Trade Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|----------|--|
| Reason | 21 | 1 | Alpha | The reason the trade was broken. The values currently supported are: E = Erroneous (trade deemed clearly erroneous) C = Consent (both parties agreed to break the trade) S = Supervisory (manually broken by supervisory) X = External (trade broken by an external third party) |
| CIOrdID | 22 | 14 | Alpha | Customer order identifier |
| Appendage Length | 36 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 38 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.8. Type J – Rejected

A Rejected Message may be sent in response to an Enter Order Message or Replace Order Message if the order or replace cannot be accepted at this time. The reason for the rejection is given.

The Order UserRefNum of a Rejected Message cannot be re-used.

For the Rejected message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Rejected Order Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'J' | Rejected Order Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order being rejected |
| Reason | 13 | 2 | Numeric | The reason the order was rejected. See Appendix D . |
| CIOrdID | 15 | 14 | Alpha | Customer order identifier for order being rejected |
| Appendage Length | 29 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 31 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.9. Type P – Cancel Pending

A Cancel Pending Message is sent in response to a cancel request for a cross order during a pre-cross late period signifying that it cannot be canceled at this time, but any unexecuted portion of this order will automatically be canceled immediately after the cross completes.

This message will only be sent once for a given UserRefNum. Duplicate cancel requests for the same UserRefNum will be ignored by OUCH.

For the Cancel Pending message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Cancel Pending Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'P' | Cancel Pending Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order suffering the pending cancel |
| Appendage Length | 13 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 15 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.10. Type I – Cancel Reject

A Cancel Reject Message is sent in response to a partial cancel request (with non-zero “intended order size”) for a cross order during a pre-cross late period signifying that it cannot be partially canceled at this time. No automatic cancel will be scheduled for this order. Clients could repeat their request for any unexecuted portion of the order after the cross completes.

This message will only be sent once for a given UserRefNum. Duplicate cancel requests for the same UserRefNum will be ignored by OUCH.

For the Cancel Reject message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Cancel Reject Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'I' | Cancel Reject Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order that was cancel-rejected |
| Appendage Length | 13 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 15 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.11. Type T – Order Priority Update

A Priority Update Message is sent whenever priority of the order has been changed by the system.

For the Order Priority Update message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Order Priority Update Message

| Name | Offset | Length | Value | Notes |
|------------|--------|--------|------------|--|
| Type | 0 | 1 | 'T' | Order Priority Update Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order whose priority was updated |
| Price | 13 | 8 | Price | The limit price of the order |
| Display | 21 | 1 | Alpha | The new display for the order Y = Anonymous – Price to Comply |

Order Priority Update Message

| Name | Offset | Length | Value | Notes |
|------------------------|--------|--------|----------|--|
| Order Reference Number | 22 | 8 | Numeric | The day-unique Order Reference Number assigned by NASDAQ to this order. As a result of the updated priority, a new order reference number will be assigned |
| Appendage Length | 30 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 32 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.12. Type M – Order Modified

An Order Modified Message is sent in response to an order modify request.

For the Order Modified message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Order Modified Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'M' | Order Modified Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order that was modified |
| Side | 13 | 1 | Alpha | The side as entered in the Order Modify Request |
| Quantity | 14 | 4 | Numeric | Total number of shares outstanding |
| Appendage Length | 18 | 2 | Integer | <i>The length of the remaining Optional Appendage field.</i> |
| Optional Appendage | 20 | var | TagValue | The available options supported on this message are: UserRefIdx SharesLocated LocateBroker See Appendix B for more detail |

3.13. Type R – Order Restated

The Order Restated Message is sent to indicate that the system has modified an order as part of its order management.

Best Bid OR Ask Update Message

| Name | Offset | Length | Value | Notes |
|------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'R' | Order Restated Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| UserRefNum | 9 | 4 | UserRefNum | The UserRefNum of the order being restated |
| Reason | 13 | 1 | Alpha | The reason for this order being restated R = Refresh of display (on an order with reserves) P = Update of displayed price |
| Appendage Length | 14 | 2 | Numeric | The length of the remaining Optional Appendage field. |

Best Bid OR Ask Update Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|---------|---|
| Optional Appendage | 16 | var | Options | The available options supported on this message are: Display Quantity Display Price SecondaryOrdRefNum UserRefIdx See Appendix B for more detail |

3.14. Type X - Mass Cancel Response

This message acknowledges the receipt of a valid Mass Cancel Request message. The data fields from the Mass Cancel Request message are echoed back in this message.

Mass Cancel Response

| Name | Offset | Length | Value | Notes |
|-----------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'X' | Identifies this message as a Mass Cancel Request message type |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| User Reference Number | 9 | 4 | UserRefNum | The UserRefNum from the inbound message |
| Firm | 13 | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple firms in a Service Bureau configuration. |
| Symbol | 17 | 8 | Alpha | Optional, Space filled if not specified ymbol to mass cancel orders on |
| Appendage Length | 25 | 2 | Integer | Length of entire optional appendage. Zero (0) if no appendage follows |
| Optional Appendage | 27 | var | TagValue | The available options supported on this message are: Side Group ID UserRefIdx See Appendix B for more detail |

3.15. Type G - Disable Order Entry Response

This message acknowledges the receipt of the Disable Order Entry Request message. The data fields from the Enter Order Message are echoed back in this message.

Disable Order Entry Response

| Name | Offset | Length | Value | Notes |
|-----------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'G' | Identifies this message as a Disable Order Entry Request message type |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| User Reference Number | 9 | 4 | UserRefNum | The UserRefNum from the inbound message. |
| Firm | 13 | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple firms in a Service Bureau configuration. |
| Appendage Length | 17 | 2 | Integer | The length of the remaining Optional Appendage field. |

Disable Order Entry Response

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|----------|--|
| Optional Appendage | 19 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.16. Type K - Enable Order Entry Response

This message acknowledges the receipt of the Enable Order Entry Request message. The data fields from the Enable Order Entry Request message are echoed back in this message.

Enable Order Entry Response

| Name | Offset | Length | Value | Notes |
|-----------------------|--------|--------|------------|---|
| Type | 0 | 1 | 'K' | Identifies this message as a Disable Order Entry Request message type |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| User Reference Number | 9 | 4 | UserRefNum | The UserRefNum from the inbound message |
| Firm | 13 | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple firms in a Service Bureau configuration. |
| Appendage Length | 17 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 19 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

3.17. Type Q – Account Query Response

The Account Query Response message is sent in response to an Account Query Request to indicate the next available UserRefNum that can be used to identify new transactions.

For the Account Query Response message, Appendage Length and Optional Appendage fields are both optional and will be absent unless this message results from the incoming message specifying non zero userRefIdx field, in which case that same userRefIdx field will be communicated among the Appendage fields.

Account Query Response Message

| Name | Offset | Length | Value | Notes |
|--------------------|--------|--------|------------|--|
| Type | 0 | 1 | 'Q' | Account Query Response Message |
| Timestamp | 1 | 8 | Timestamp | Expressed as nanoseconds since midnight |
| NextUserRefNum | 9 | 4 | UserRefNum | The next available UserRefNum |
| Appendage Length | 13 | 2 | Integer | The length of the remaining Optional Appendage field. |
| Optional Appendage | 15 | var | TagValue | The available options supported on this message are: UserRefIdx See Appendix B for more detail |

4. Support

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

Appendix A – Optional Fields

| OptionTag | Option | Size ¹ | Type | Notes | Default ² |
|-----------|---------------------|-------------------|--------------|---|-------------------------------|
| 1 | SecondaryOrdRefNum | 8 | 'Q' | An alternative order reference number used when publishing the order on the Nasdaq market data feeds (identifying, for example, the displayed portion of a reserve order) | Not applicable |
| 2 | Firm | 4 | Alpha | This field should contain all caps. Firm identifier for the order entry firm. One logical OUCH account can potentially enter orders for multiple field is blank-filled, the default firm for the OUCH account will be used. | Blank-filled (spaces) |
| 3 | MinQty | 4 | Integer | MinQty must be a round lot. | 0 (zero), no minimum quantity |
| 4 | CustomerType | 1 | Char | R = Retail Designated Order N = Not Retail Designated (default) | Space, use port default |
| 5 | MaxFloor | 4 | Integer | Represents the portion of your order that you wish to have displayed. | 0 (zero), no Max Floor |
| 6 | PriceType | 1 | Char | L = limit (default) P = market peg M = midpoint peg R = primary peg Q = market maker peg m = midpoint | 'L', limit |
| 7 | PegOffset | 4 | Signed Price | Offset amount for the pegged value. | 0 (zero), no peg offset |
| 9 | DiscretionPrice | 8 | Price | Discretion price for Discretionary Order. | 0 (zero), no discretion price |
| 10 | DiscretionPriceType | 1 | Alpha | L = limit (default) P = market peg M = midpoint peg R = primary peg | 'L', limit |
| 11 | DiscretionPegOffset | 4 | Signed Price | Offset amount for the pegged value of the Discretionary Price. | 0 (zero), no offset |
| 12 | PostOnly | 1 | Alpha | P = Post Only (Mid-point Post Only not available on BX) N = No (default) | N', no post only |
| 13 | RandomReserves | 4 | Integer | Shares to do random reserve with. | 0 (zero), no random reserves |
| 14 | Route | 4 | Alpha | | Not applicable |
| 15 | ExpireTime | 4 | Integer | Seconds to live. Must be less than 86400 (number of seconds in a day) | 0 (zero), no expire time |
| 16 | TradeNow | 1 | Alpha | Y = yes N = no (default) | Space, use port default |

| OptionTag | Option | Size ¹ | Type | Notes | Default ² |
|-----------|----------------------|-------------------|---------|--|---------------------------------|
| 17 | HandleInst | 1 | Alpha | I = imbalance only (CrossType O and C) O = retail order type 1 (CrossType R) T = retail order type 2 (CrossType R) Q = retail price improvement (CrossType R) B = Extended Life + Continuous (CrossType E) D = Direct Listing Capital Raise (CrossType H) | Space, no handling instructions |
| 18 | BBO Weight Indicator | 1 | Alpha | "0" = 0-0.2% "1" = 0.2%-1% "2" = 1%-2% "3" = greater than 2% space = unspecified (default) "S" = Sets the QBBO while joining the NBBO "N" = Improves the NBBO upon entry | Not applicable |
| 22 | Display Quantity | 4 | Numeric | Used in the Order Restated Message only. Represents an update of an order's displayed quantity (i.e. an order with reserves). | Not applicable |
| 23 | Display Price | 8 | Price | Used in the Order Restated Message only. Represents an update of an order's displayed price. | Not applicable |
| 24 | Group ID | 2 | Numeric | Customer Group ID – identifies specific entity | 0 (zero), no Group ID |
| 25 | Shares Located | 1 | Alpha | Shares located for short sale order Y = yes N = no (default) | 'N', no |
| 26 | Locate Broker | 4 | Alpha | Broker code from which the locate has been acquired for short sale orders | Not applicable |
| 27 | Side | 1 | Alpha | B= buy S = sell T = sell short E = sell short exempt | Not applicable |
| 28 | UserRefIdx | 1 | Numeric | User Reference Index - identifies the channel within the given port | Not applicable |

¹ The Size cited is that of just the optional field itself, not the encasing TagValue element

² Default value applies only to the Enter Order message. When a tag is unspecified on a Replace Order message, the value will be defaulted to the tag value used in the original Enter Order message (except for SharesLocated and LocateBroker which need to be specified for each Replace Order request).

Appendix B – Order Cancel Reasons

Order Cancel Reasons

| Reason | Explanation |
|--------|--|
| 'D' | This order cannot be executed because of a regulatory restriction (e.g.: trade through restrictions). |
| 'E' | Closed. Any DAY order that was received after the closing cross is complete in a given symbol will receive this cancel reason. |
| 'F' | Post Only Cancel. This Post Only order was cancelled because it would have been price slid for NMS. |

Order Cancel Reasons

| Reason | Explanation |
|--------|---|
| 'G' | Post Only Cancel. This Post Only order was cancelled because it would have been price slid due to a contra side displayed order on the book |
| 'H' | Halted. The on-open order was canceled because the symbol remained halted after the opening cross completed. |
| 'I' | Immediate or Cancel Order. |
| 'K' | This order cannot be executed because of Market Collars |
| 'Q' | Self Match Prevention. The order was cancelled because it would have executed with an existing order entered by the same MPID. |
| 'S' | Supervisory. The order was manually canceled or reduced by an NASDAQ supervisory terminal. |
| 'T' | Timeout. The Time In Force for this order has expired |
| 'U' | User requested cancel. Sent in response to a Cancel Request Message. |
| 'X' | Open Protection. Orders that are cancelled as a result of the Opening Price Protection Threshold. |
| 'Z' | System cancel. This order was cancelled by the system. |
| 'e' | Company Direct Listing Capital Raise order exceeds allowable shares offered |

Appendix C – Order Reject Reasons

Order Reject Reasons

| Reason | Explanation |
|--------|----------------------------|
| 0×0001 | Quote Unavailable |
| 0×0002 | Destination Closed |
| 0×0003 | Invalid Display |
| 0×0004 | Invalid Max Floor |
| 0×0005 | Invalid Peg Type |
| 0×0006 | Fat Finger |
| 0×0007 | Halted |
| 0×0008 | ISO Not Allowed |
| 0×0009 | Invalid Side |
| 0×000A | Processing Error |
| 0×000B | Cancel Pending |
| 0×000C | Firm Not Authorized |
| 0×000D | Invalid Min Quantity |
| 0×000E | No Closing Reference Price |
| 0×000F | Other |
| 0×0010 | Cancel Not Allowed |
| 0×0011 | Pegging Not Allowed |
| 0×0012 | Crossed Market |
| 0×0013 | Invalid Quantity |
| 0×0014 | Invalid Cross Order |
| 0×0015 | Replace Not Allowed |
| 0×0016 | Routing Not Allowed |
| 0×0017 | Invalid Symbol |

Order Reject Reasons

| Reason | Explanation |
|--------|--|
| 0×0018 | Test |
| 0×0019 | Late LOC Too Aggressive |
| 0×001A | Retail Not Allowed |
| 0×001B | Invalid Midpoint Post Only Price |
| 0×001C | Invalid Destination |
| 0×001D | Invalid Price |
| 0×001E | Shares Exceed Threshold |
| 0×001F | Exceeds Maximum Allowed Notional Value |
| 0×0020 | Risk: Aggregate Exposure Exceeded |
| 0×0021 | Risk: Market Impact |
| 0×0022 | Risk: Restricted Stock |
| 0×0023 | Risk: Short Sell Restricted |
| 0×0024 | Risk: ISO Not Allowed. |
| 0×0025 | Risk: Exceeds ADV Limit |
| 0×0026 | Risk: Fat Finger |
| 0×0027 | Risk: Locate Required |
| 0×0028 | Risk: Symbol Message Rate Restriction |
| 0×0029 | Risk: Port Message Rate Restriction |
| 0×002A | Risk: Duplicate Message Rate Restriction |
| 0×002B | Risk: Short Sell Not Allowed |
| 0×002C | Risk: Market Order Not Allowed |
| 0×002D | Risk: Pre-Market Not Allowed |
| 0×002E | Risk: Post-Market Not Allowed |
| 0×002F | Risk: Short Sell Exempt Not Allowed |
| 0×0030 | Risk: Single Order Notional Exceeded |
| 0×0031 | Risk: Max Quantity Exceeded |
| 0×0032 | Reg SHO State Not Available |
| 0×0033 | Risk: IPO Market Buy Not Allowed |

Appendix D – Liquidity Codes

Liquidity Flags

| Flag | Value | Markets |
|------|--|----------------|
| A | Added | All markets |
| C | Closing Cross | Nasdaq only |
| e | Retail designated execution that added displayed liquidity | Nasdaq/BX only |
| H | Halt/IPO Cross | Nasdaq only |
| i | After hours closing cross | Nasdaq only |
| J | Non-displayed adding liquidity | All markets |
| j | RPI (Retail Price Improving) order provides liquidity | BX only |
| k | Added liquidity via a midpoint order | All markets |

Liquidity Flags

| Flag | Value | Markets |
|------|---|-------------------------|
| K | Halt Cross | Nasdaq only |
| L | Closing Cross (imbalance-only) | Nasdaq only |
| M | Opening Cross (imbalance-only) | Nasdaq only |
| m | Removed liquidity at a midpoint | All markets |
| N | Passive midpoint execution | Nasdaq/BX only |
| n | Midpoint Extended Life Order execution | Nasdaq only |
| O | Opening Cross | Nasdaq only |
| p | Removed price improving non-displayed liquidity | BX only |
| q | RMO Retail Order removes non-RPI midpoint liquidity | BX only |
| R | Removed | All markets |
| r | Retail Order removes RPI liquidity | BX only |
| t | Retail Order removes price improving non-displayed liquidity other than RPI liquidity | BX only |
| u | Added non-displayed liquidity via a Reserve order | All markets |
| 0 | Supplemental order execution | Nasdaq only |
| 7 | Displayed, liquidity-adding order improves the NBBO | Nasdaq/BX only |
| 8 | Displayed, liquidity-adding order sets the QBBO while joining | Nasdaq/BX only the NBBO |
| 1 | RPI order provides liquidity, No RPII | BX only |

Appendix E – Revision History

| Revision # | Date | Change |
|------------|------------|--|
| 1.0 | 10/4/2022 | Added the orders entered message to Data Types section |
| 1.01 | 2/10/2023 | Added GroupID and SharesLocated to the Optional Appendage table |
| 1.02 | 5/2/2023 | Removed “Trade Correction Message” section and removed Reference Price and Reference Price Type as optional fields |
| 1.03 | 12/28/2023 | Added Mass Cancel, Disable Order Entry, and Enable Order Entry message types |
| 1.04 | 5/1/2024 | Clarified optional appendage behavior in the header of relevant message type sections. |