

# NASDAQ OMX BX TotalView-ITCH 3.2

For BX Trading Venue and [BX Listing Market](#)

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## NASDAQ OMX BX TotalView-ITCH 3.2

# 1 Overview

## 1. Product Description

NASDAQ OMX BX TotalView-ITCH ("BX TotalView-ITCH") is a direct data feed product offered by NASDAQ OMX BX.

BX TotalView-ITCH 3.2 is being released in association with the equity symbology initiative and will support issue symbols up to 8 characters in total length.

BX TotalView-ITCH features the following data elements that support trading on the BX exchange in all exchange-listed equities securities:

- **Order level data with attribution:** The BX TotalView-ITCH data feed provides its full order depth using the standard ITCH format. ITCH uses a series of messages of order messages to track the life of a customer order.<sup>1</sup> As an added feature, the message formats will support market participant attribution. BX TotalView-ITCH carries order level data for all U.S. exchange-listed equities.
- **Trade messages:** To ensure that customers have complete information about BX market order flow, NASDAQ OMX BX TotalView-ITCH supports a trade message to reflect a match of a non-displayable order in the BX system.
- **Administrative messages**, such trading actions and symbol directory messages:
  - Trading action messages are used to inform market participants when a security is halted or released for trading.
  - Symbol Directory messages provide basic security data such as the market tier and Financial Status Indicator.
  - Market participant position message carries the Primary Market Maker status, Market Participant status and Market Maker mode fields used by some firms to comply with market regulations.
- **Event controls**, such as start of day, end of day and emergency market halt/resume.

## 2. Upcoming Product Enhancements

As noted above, the BX TotalView-ITCH 3.2 feed is designed to support the expanded equity symbols up to 8 characters in total length.

In addition, the BX TotalView-ITCH 3.2 is designed to support BX listing market functionality. NASDAQ OMX has filed with the U.S. Securities and Exchange Commission (SEC) to establish listing standards for the BX exchange. [All new values and enhanced functionality to support the BX Listing Market is highlighted in blue to assist subscribing customers in identifying the changes.](#)

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<sup>1</sup> NASDAQ OMX BX TOTALVIEW-ITCH is an outbound market data feed only. The ITCH protocol does not support order entry. For information on NASDAQ OMX BX order entry protocols, please refer to the Trading Services section of the NASDAQ OMX Trader website.

With the introduction of the BX Listing Market, NASDAQ OMX will enhance the BX trading system to support an opening and closing cross process. In addition, NASDAQ OMX will introduce the following enhancements to the BX TotalView-ITCH 3.2 data feed product:

- **Symbol Directory messages:** NASDAQ OMX will add a new Market Category Code of “B” to clearly identify securities listed on the BX Listing Market.
- **Net Order Imbalance Indicator (NOII) messages:** In the minutes leading up to the new opening and closing crosses, BX TotalView-ITCH will disseminate the indicative clearing price and net order imbalance for BX-listed securities only. Because the calculation includes non-displayable as well as displayable order types in the BX market system, the Net Order Imbalance Indicator (NOII) is the best predictor of the BX opening and closing prices available to the public for BX-listed securities.
- **Cross Trade messages:** The BX TotalView-ITCH data feed will also support a separate Cross Trade message format to clearly denote the price and volume executed during the opening and closing cross process in the BX system for BX-listed securities only.

## 2 Architecture

The NASDAQ OMX BX TotalView-ITCH 3.2 feed is made up of a series of sequenced messages. Each message is variable in length based on the message type and is composed of non-control ASCII bytes. The messages that make up the NASDAQ OMX BX TotalView-ITCH 3.2 protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

This data feed will be offered in three protocol options:

- [SoupBINTCP](#)
- [Compressed](#) via SoupTCP
- [MoldUDP64](#)

## 3 Data Types

All numeric fields are composed of a string of ASCII coded digits, right justified and space filled on the left.

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

Prices are given in decimal format with 6 whole number places followed by 4 decimal digits. The whole number portion is padded on the left with spaces; the decimal portion is padded on the right with zeros. The decimal point is implied by position; it does not appear inside the price field.

## 4 Message Formats

The NASDAQ OMX BX TotalView-ITCH feed is composed of a series of messages that describe orders added to, removed from and executed on NASDAQ OMX BX as well as disseminate Cross and Stock Directory information.

### 4.1 Time Messages

For bandwidth efficiency reasons, NASDAQ OMX BX will use separate time stamp messages for the NASDAQ OMX BX TotalView-ITCH 3.2 product. The messages will be sequenced so that data feed recipients can apply the time stamps properly. The time stamp is broken into two separate messages: seconds and milliseconds. Please note that the timestamp for new seconds will always be immediately followed by a time stamp for new milliseconds.

#### 4.1.1 Seconds Message

This message is sent every second for which at least one message is being generated.

SECONDS MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"T"	Seconds Message.
Second	1	5	Numeric	Number of seconds since midnight.

#### 4.1.2 Milliseconds Message

This message is sent every millisecond for which at least one message is being generated.

MILLISECONDS MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"M"	Milliseconds Message.
Millisecond	1	3	Numeric	Number of milliseconds since last second.

### 4.2 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	1	"S"	System Event Message.
Event Code	1	1	Alphanumeric	See System Event Codes below.

NASDAQ OMX BX supports the following event codes on a daily basis on the BX TotalView-ITCH 3.2 feed

SYSTEM EVENT CODES	
Code	Explanation
"O"	<i>Start of Messages.</i> Outside of time stamp messages, the start of day message is the first message sent in any trading day.
"S"	<i>Start of System hours.</i> This message indicates that the system is open and ready to start accepting orders.
"Q"	<i>Start of Market hours.</i> This message is intended to indicate that Market Hours orders are available for execution.

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"M"	<i>End of Market hours.</i> This message is intended to indicate that Market Hours orders are no longer available for execution.
"E"	<i>End of System hours.</i> This indicates that the system is now closed and will not accept any new orders today. It is still possible to receive Broken Trade messages and Order Delete messages after the End of Day.
"C"	<i>End of Messages.</i> This is always the last message sent in any trading day.

In the event of an emergency market condition (EMC), NASDAQ OMX BX will also support the following event codes on BX TotalView-ITCH 3.2.

SYSTEM EVENT CODES – AS NEEDED	
Code	Explanation
"A"	<i>Emergency Market Condition – Halt:</i> This message is sent to inform NASDAQ OMX BX market participants that the EMC is in effect. No trading is allowed during the EMC.
"R"	<i>Emergency Market Condition – Quote Only Period:</i> This message is sent to inform NASDAQ OMX BX market participants that the EMC quotation only period is in effect.
"B"	<i>Emergency Market Condition – Resumption:</i> This message is sent to inform NASDAQ OMX BX market participants that EMC is no longer in effect.

## 4.3 Stock Related Messages

### 4.3.1 Stock Directory

At the start of each trading day, NASDAQ OMX BX disseminates stock directory messages for all active symbols in the system.

Market data redistributors should process this message to populate the Financial Status Indicator (required display field) and the Market Category (recommended display field) for NASDAQ-listed issues [and BX-listed](#).

STOCK DIRECTORY				
Name	Offset	Length	Value	Notes
Message Type	0	1	"R"	Stock Directory Message
Stock	1	8	Alphabetic	Denotes the security symbol for the issue in the feed.
Market Category	9	1	Alphanumeric	Indicates listing market center or listing market tier for the issue  "N" = New York Stock Exchange (NYSE) "A" = NYSE Amex "P" = NYSE Arca "Q" = NASDAQ Global Select Market <sup>SM</sup> "G" = NASDAQ Global Market <sup>SM</sup> "S" = NASDAQ Capital Market <sup>®</sup> "Z" = BATS BZX Exchange "B" = <a href="#">BX-Listing Market</a> Space = Not available
Financial Status Indicator	10	1	Alphanumeric	For NASDAQ-listed <a href="#">or BX-listed issues</a> , this field indicates when a firm is not in compliance with NASDAQ <a href="#">or BX</a> continued listing requirements.

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				<p>“D” = Deficient  “E” = Delinquent  “Q” = Bankrupt  “S” = Suspended  “G” = Deficient and Bankrupt  “H” = Deficient and Delinquent  “J” = Delinquent and Bankrupt  “K” = Deficient, Delinquent and Bankrupt</p> <p>Space = Company is in compliance, if NASDAQ-listed or BX-listed issue</p> <p>For NYSE, NYSE Amex, NYSE Arca and BATS issues, this field will also be space-filled. Redistributors should refer to SIAC feeds for code if needed.</p>
Round Lot Size	11	6	Numeric	Indicates the number of shares that represent a round lot for the issue
Round Lots Only	17	1	Alphabetic	<p>Indicates if NASDAQ or BX system limits order entry for issue</p> <p>“Y” = Only round lots are accepted in this stock  “N” = Odd/mixed lots are allowed</p>

### 4.3.2 Stock Trading Action

Administrative messages are used to indicate the current trading status of a security to the trading community.

Prior to the start of system hours, NASDAQ OMX BX will send out a Trading Action spin. In the spin, NASDAQ OMX BX will send out a Stock Trading Action message with the “T” (Trading Resumption) for all NASDAQ- and other exchange-listed securities that are eligible for trading at the start of the system hours. If a security is absent from the pre-opening Trading Action spin, firms should assume that the security is being treated as halted in the NASDAQ OMX BX platform at the start of the system hours. Please note that securities may be halted in the NASDAQ OMX BX system for regulatory or operational reasons.

After the start of system hours, the Trading Action message will be used to relay changes in trading status for an individual security. Messages will be sent when a stock is halted or paused, is released for quotation, or is released for trading.

STOCK TRADING ACTION				
Name	Offset	Length	Value	Notes
Message Type	0	1	“H”	Stock Trading Action Message.
Stock	1	8	Alphanumeric	Stock symbol right padded with spaces.
Trading State	9	1	Alphabetic	<p>Indicates the current trading state for the stock. Allowable values:</p> <p>“H” = Halted/Paused on across all U.S. equity markets  “Q” = Quotation only period for cross-market halt or pause  “T” = Trading on BX</p>
Reserved	10	1	Alphanumeric	Reserved.
Reason	11	4	Alphanumeric	Trading Action reason. For the list of reason

				codes, please refer to Appendix C.
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### 4.3.3 Reg SHO Short Sale Price Test Restricted Indicator

In November 2010, the Securities and Exchange Commission (SEC) will implement changes to Rule 201 of the Regulation SHO (Reg SHO). For details, please refer to [SEC Release Number 34-61595](#). In association with the Reg SHO rule change, NASDAQ will introduce the following Reg SHO Short Sale Price Test Restricted Indicator message format.

For NASDAQ-listed issues, NASDAQ will support a full pre-opening spin of Reg SHO Short Sale Price Test Restricted Indicator messages indicating the Rule 201 status for all active issues. NASDAQ will also send the Reg SHO Short Sale Price Test Restricted Indicator message in the event of an intraday status change.

For other exchange-listed issues, NASDAQ will relay the Reg SHO Short Sale Price Test Restricted Indicator message when it receives an update from the primary listing exchange.

NASDAQ will process orders based on the most Reg SHO Restriction status value.

REG SHO RESTRICTION				
Name	Offset	Length	Value	Notes
Message Type	0	1	"Y"	Reg SHO Short Sale Price Test Restricted Indicator
Stock	1	8	Alpha	Stock symbol right padded with spaces.
Reg SHO Action	9	1	Alpha	Denotes the Reg SHO Short Sale Price Test Restriction status for the issue at the time of the message dissemination. Allowable values are:  "0" = No price test in place  "1" = Reg SHO Short Sale Price Test Restriction in effect due to an intra-day price drop in security  "2" = Reg SHO Short Sale Price Test Restriction remains in effect

### 4.3.4 Market Participant Position

At the start of each trading day, NASDAQ OMX BX disseminates a spin of market participant position messages. The message provides the Primary Market Maker status, Market Maker mode and Market Participant state for each NASDAQ OMX BX market participant firm registered in an issue. Market participant firms may use these fields to comply with certain marketplace rules.

Throughout the day, NASDAQ OMX BX will send out this message only if NASDAQ Operations changes the status of a market participant firm in an issue.

MARKET PARTICIPANT POSITION				
Name	Offset	Length	Value	Notes
Message Type	0	1	"L"	Market Participant Position message
MPID	1	4	Alphabetic	Denotes the market participant identifier for which the position message is being generated
Stock	5	8	Alphanumeric	Denotes the security symbol for which the position is being generated

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Primary Market Maker	13	1	Alphanumeric	Indicates if the market participant firm qualifies as a Primary Market Maker in accordance with NASDAQ OMX BX marketplace rules  "Y" = Primary market maker "N" = Non-primary market maker
Market Maker Mode	14	1	Alphanumeric	Indicates the quoting participant's registration status in relation to SEC Rules 101 and 104 of Regulation M  "N" = Normal "P" = Passive "S" = Syndicate "R" = Pre-syndicate "L" = Penalty
Market Participant State	15	1	Alphanumeric	Indicates the market participant's current registration status in the issue  "A" = Active "E" = Excused/Withdrawn "W" = Withdrawn "S" = Suspended "D" = Deleted



## 4.4 Add Order Message

An Add Order Message indicates that a new order has been accepted by the system and was added to the displayable book. The message includes a day-unique Order Reference Number used to track the order. NASDAQ OMX BX TotalView-ITCH will support two variations of the Add Order Message format.

NASDAQ OMX BX will support two variations of the Add Order message format.

### 4.4.1 Add Order – No MPID Attribution

This message will be generated for unattributed orders in the NASDAQ OMX BX system.

ADD ORDER MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"A"	Add Order Message.
Order Reference Number	1	12	Numeric	The unique reference number assigned to the new order. The order reference number is increasing, but not necessarily sequential.
Buy/Sell Indicator	13	1	Alphabetic	The type of order being added.  "B" = Buy order. "S" = Sell order.
Shares	14	6	Numeric	The total number of shares associated with the order being added to the book.
Stock	20	8	Alphanumeric	The security symbol for which the order is being added.
Price	28	10	Numeric	The display price of the new order. Refer to Data Types for field processing notes.

### 4.4.2 Add Order – MPID Attribution

This message will be generated for attributed orders and quotations entered into the NASDAQ OMX BX system.

ADD ORDER – MPID ATTRIBUTION MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"F"	Add Order Message.
Order Reference Number	1	12	Numeric	The unique reference number assigned to the new order. The order reference number is increasing, but not necessarily sequential.
Buy/Sell Indicator	13	1	Alphabetic	The type of order being added.  "B" = Buy order. "S" = Sell order.
Shares	14	6	Numeric	The total number of shares associated with the order being added to the book.
Stock	20	8	Alphanumeric	The security symbol for which the order is being added.
Price	28	10	Numeric	The display price of the new order. Refer to Data Types for field processing notes.
Attribution	38	4	Alphabetic	Market participant identifier associated with the entered order.

## 4.5 Modify Order Messages

Modify Order Messages always include the Order Reference Number of the Add Order to which the update applies. To determine the current display shares for an order, NASDAQ OMX BX TotalView-ITCH 3.2 subscribers must deduct the number of shares stated in the Modify Message from the original number of shares stated in the Add Order Message with the same reference number. NASDAQ OMX BX may send multiple Modify Order Messages for the same order reference number and the effects are cumulative. When the number of display shares for an order reaches zero, the order is dead and should be removed from the book.

### 4.5.1 Order Executed Message

This message is sent whenever an order on the book is executed in whole or in part. It is possible to receive several Order Executed Messages for the same order if that order is executed in several parts. The multiple Order Executed Messages on the same order are cumulative.

By combining the executions received separately via two types of Order Executed Messages and Trade Messages, it is possible to build a complete view of all non-cross executions that happen on NASDAQ OMX BX. Cross execution information is available in one bulk print via the Cross Trade Message.

ORDER EXECUTED MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"E"	Order Executed Message.
Order Reference Number	1	12	Numeric	The order reference number associated with the executed order.
Executed Shares	13	6	Numeric	The number of shares executed.
Match Number	19	12	Numeric	The BX generated day-unique Match Number of this execution. The match number is also referenced in the Trade Break Message.

### 4.5.2 Order Executed With Price Message

This message is sent whenever an order on the book is executed in whole or in part at a price different from the initial display price. Since the execution price is different than the display price of the original Add Order, the message includes a price field within this execution message.

It is possible to receive multiple Order Executed and Order Executed with Price messages for the same order if that order is executed in several parts. The multiple Order Executed messages on the same order are cumulative.

These executions may be marked as non-printable. If the execution is marked as non-printed, it means that the shares will be included into a later bulk print (e.g., in the case of cross executions). If a firm is looking to use the NASDAQ OMX BX TotalView-ITCH 3.2 data in time-and-sales displays or volume calculations, it is recommended that firms ignore messages marked as non-printable to prevent double counting.

ORDER EXECUTED WITH PRICE MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"C"	Order Executed Message.
Order Reference Number	1	12	Numeric	The reference number of the order that was executed.
Executed Shares	13	6	Numeric	The number of shares executed.
Match Number	19	12	Numeric	The NASDAQ OMX BX generated day-unique Match Number of this execution. The match number is also referenced in the Trade Break Message.
Printable	31	1	Alphabetic	Indicates if the execution should be reflected on time and sale displays and volume calculations.  "N" = Non-printable "Y" = Printable
Execution Price	32	10	Numeric	The price at which the order execution occurred. Refer to Data Types for field processing notes.

### 4.5.3 Order Cancel Message

This message is sent whenever an order on the book is modified as a result of a partial cancellation.

ORDER CANCEL MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"X"	Order Cancel Message.
Order Reference Number	1	12	Numeric	The reference number of the order being canceled or reduced.
Canceled Shares	13	6	Numeric	The number of shares to be removed from the display size of the order as the result of a cancellation.

### 4.5.4 Order Delete Message

This message is sent whenever an order on the book is being cancelled. All remaining shares are no longer accessible so the order should be removed from the book.

ORDER DELETE MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"D"	Order Delete Message.
Order Reference Number	1	12	Numeric	The reference number of the order being canceled or reduced. References a previously sent Add Order Message.

### 4.5.5 Order Replace Message

This message is sent whenever an order on the book has been cancelled and replaced. All remaining shares from the original order are no longer accessible, and must be removed. The new order details are provided for the replacement, along with a new order reference number which will be used henceforth. The side, stock, and attribution (if any) remain the same as the original order, so they are not given in this message.

ORDER REPLACE MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"U"	Order Replace Message.
Original Order Reference Number	1	12	Numeric	The original reference number of the order being replaced.
New Order Reference Number	13	12	Numeric	The new reference number for this order. Note that new reference numbers mean new time priority, so this order belongs below other orders at the same price in priority.
Shares	25	6	Numeric	The new total displayed quantity.
Price	31	10	Numeric	The new display price for the order. Refer to Data Types for field processing notes.

## 4.6 Trade Messages

### 4.6.1 Trade Message (Non-Cross)

The Trade Message is designed to provide execution details for normal match events involving non-displayable order types. (Note: There is a separate message for cross events.)

- Since no Add Order Message is generated when a non-displayed order is initially received, the system cannot use the Order Executed message for all matches. Therefore this message was developed to indicate when a match occurs between non-displayable order types. A Trade Message is transmitted each time a non-displayable order is executed in whole or in part. It is possible to receive multiple Trade Messages for the same order if that order is executed in several parts. Trade Messages for the same order are cumulative.

Trade Messages should be included in NASDAQ OMX BX time-and-sales displays as well as volume and other market statistics. Since Trade Messages do not affect the book, however, they may be ignored by firms just looking to build and track the NASDAQ OMX BX display.

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TRADE MESSAGE (NON-CROSS)				
Name	Offset	Length	Value	Notes
Message Type	0	1	"P"	Trade Message Identifier
Order Reference Number	1	12	Numeric	The unique reference number assigned to the order on the book being executed.  Effective December 6, 2010, NASDAQ OMX will populate the Order Reference Number field within the Trade (Non-Cross) message as zero. For the ASCII versions of the TotalView-ITCH data feeds, the field will be space-padded zero.
Buy/Sell Indicator	13	1	Alphabetic	The type of non-display order on the book being matched. "B" =Buy order "S" =Sell order  <b>Effective 07/14/2014, this field will always be "B" regardless of the resting side.</b>
Shares	14	6	Numeric	The number of shares being matched in this execution.
Stock	20	8	Alphanumeric	The security symbol associated with the match execution.
Price	28	10	Numeric	The match price of the order. Refer to Data Types for field processing notes.
Match Number	38	12	Numeric	The BX generated session-unique Match Number for this trade. The Match Number is referenced in the Trade Break Message.

#### 4.6.2 Cross Trade Message

The Cross Trade message is only applicable for eligible BX-listed securities and indicates that BX has completed its cross process for a specific BX-listed security. BX sends out a Cross Trade message for all active BX-listed issues in the system following the Opening, Closing and EMC cross events. Firms may use the Cross Trade message to determine when the cross for each BX-listed security has been completed. (Note: For the halted securities, firms should use the Trading Action message to determine when an issue has been released for trading.)

For most BX-listed securities, the Cross Trade message will indicate the bulk volume associated with the cross event. If the order interest is insufficient to conduct a cross in a particular issue, however, the Cross Trade message may show the shares as zero.

To avoid double counting of cross volume, firms should not include transactions marked as non-printable in time-and-sales displays or market statistic calculations.

CROSS TRADE MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"Q"	Cross Trade Message
Shares	1	9	Numeric	The number of shares matched in the BX Cross.
Stock	10	8	Alphanumeric	The BX-listed security symbol associated with the cross trade message.
Cross Price	18	10	Numeric	The price at which the cross occurred. Refer to Data Types for field processing notes.

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Match Number	28	12	Numeric	The NASDAQ OMX BX generated day-unique Match Number of this execution.
Cross Type	40	1	Alphabetic	The BX cross session for which the message is being generated.  "O" = BX Opening Cross. "C" = BX Closing Cross. "H" = BX Cross for IPO and halted securities. "I" = BX Cross Network: Intraday Cross and Post-Close Cross

### 4.6.3 Broken Trade / Order Execution Message

The Broken Trade Message is sent whenever an execution on NASDAQ OMX BX is broken. An execution may be broken if it is found to be "clearly erroneous" pursuant to agreed upon Clearly Erroneous Policy. A trade break is final; once a trade is broken, it cannot be reinstated.

Firms that use the BX TotalView-ITCH 3.2 feed to create time-and-sales displays or calculate market statistics should be prepared to process the broken trade message. If a firm is only using the BX TotalView-ITCH feed to build a book, however, it may ignore these messages as they have no impact on the current book.

BROKEN TRADE MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"B"	Broken Trade Message.
Match Number	1	12	Numeric	The NASDAQ OMX BX Match Number of the execution that was broken. This refers to a Match Number from a previously transmitted Order Executed Message, Order Executed With Price Message, or Trade Message.

## 4.7 Net Order Imbalance Indicator (NOII) Message

NASDAQ OMX BX disseminates NOII data at 5-second intervals in the minutes leading up to the BX Opening Cross and BX Closing Cross.

- For the BX Opening Cross, NOII messages will be disseminated during the two minutes leading up to the start of market hours.
- For the BX IPO and Halt Crosses, NOII messages will be disseminated during the quote only period. The first NOII message will be disseminated approximately five seconds after the Stock Trading Action message with the "B" action value is disseminated.
- For the BX Closing Cross, NOII messages will be disseminated during the ten minutes leading up to the end of market hours.

Please note that BX generates this message only for those BX-listed securities that are eligible for the BX Opening and Closing Crosses.

NOII MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"I"	NOII Message
Paired Shares	1	9	Numeric	The total number of shares that are eligible to be matched at the Current Reference Price.
Imbalance Shares	10	9	Numeric	The number of shares not paired at the Current Reference Price.
Imbalance Direction	19	1	Alphabetic	The market side of the order imbalance. "B" = Buy imbalance "S" = Sell imbalance "N" = No imbalance "O" = Insufficient orders to calculate
Stock	20	8	Alphanumeric	The BX-listed security symbol associated with the NOII message.
Far Price	28	10	Numeric	A hypothetical auction-clearing price for cross orders only.
Near Price	38	10	Numeric	A hypothetical auction-clearing price for cross orders as well as continuous orders.
Current Reference Price	48	10	Numeric	The price at which the NOII shares are being calculated.
Cross Type	58	1	Alphabetic	The BX cross session for which the message is being generated. "O" = BX Opening Cross. "C" = BX Closing Cross. "H" = Cross for IPO and halted securities.
Price Variation Indicator	59	1	Alphanumeric	This field indicates the absolute value of the percentage of deviation of the Near Indicative Clearing Price to the nearest Current Reference Price. "L" = Less than 1% "1" = 1 to 1.99% "2" = 2 to 2.99% "3" = 3 to 3.99%

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				"4" = 4 to 4.99% "5" = 5 to 5.99% "6" = 6 to 6.99% "7" = 7 to 7.99% "8" = 8 to 8.99% "9" = 9 to 9.99% "A" = 10 to 19.99% "B" = 20 to 29.99% "C" = 30% or greater Space = Cannot be calculated
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## 5 Support

- For general product support for NASDAQ OMX BX data feeds, please contact NASDAQ OMX Global Data Products at +1 301 978 5307 or [dataproduts@nasdaqomx.com](mailto:dataproduts@nasdaqomx.com).
- For technical support for NASDAQ OMX BX data feeds, please contact NASDAQ OMX Systems Engineering at [devsupport@nasdaqomx.com](mailto:devsupport@nasdaqomx.com).



## Appendix A

### Documentation Revision Control Log

#### **June 12, 2014: NASDAQ TotalView-ITCH Version 5.0**

Released a new version of TotalView-ITCH documentation to support the following change:

- Per [Data Technical News #2014-17](#), Revised the Buy/Sell Indicator value in the Trade Message (Non-Cross) to “Always ‘B’ regardless of resting side”

#### **November 1, 2013: BX TotalView-ITCH Version 3.2**

NASDAQ OMX released a new version of the TotalView-ITCH documentation to support details of expanded symbology (Appendix B).

#### **March 11, 2013: BX TotalView-ITCH Version 3.2**

NASDAQ OMX added the following Trading Action Reason Code for LULD to reflect when the National Best Bid is below the lower price band and/or the National Best Offer is above than the upper price band and the NMS Stock is not in a Limit State.

- LUDS - Volatility Trading Pause – Straddle Condition

#### **January 9, 2013: BX TotalView-ITCH Version 3.2**

NASDAQ OMX added the following Trading Action Reason Code:

- MWC0 - Market Wide Circuit Breaker Halt – Carry over from previous day

#### **January 8, 2013: BX TotalView-ITCH Version 3.2**

NASDAQ OMX removed the Trading Action State, “P”, from the Stock Trading Message.

#### **November 6, 2012: BX TotalView-ITCH Version 3.2**

Released a new version of the TotalView-ITCH documentation to support the following changes:

- Added the “P” value to the Trading State in the Stock Trading Message.
- Modified the values for the Trading Action Reason Codes. Added the following codes:
  - LUDP - Volatility Trading Pause
  - MWC1 - Market Wide Circuit Breaker Halt – Level 1
  - MWC2 - Market Wide Circuit Breaker Halt – Level 2
  - MWC3 - Market Wide Circuit Breaker Halt – Level 3
  - MWCQ - Market Wide Circuit Breaker Resumption
- Removed the Trading Action State, “V”, related to the Volatility Guard Program.

#### **November 1, 2011: BX TotalView-ITCH Version 3.2**

NASDAQ OMX updated the Market Category message to include the code “Z” for BATS-listed securities.

#### **December 17, 2010: BX TotalView-ITCH Version 3.2**

NASDAQ OMX updated the Cross Trade message to include the correct lengths and appropriate offsets for the Match Number and Cross Type fields.

#### **October 27, 2010: BX TotalView-ITCH Version 3.2**

NASDAQ OMX updated the Trade (Non-Cross) message format to remove the Timestamp field as this not applicable to this message. In addition, all offsets were updated appropriately.

#### **October 6, 2010: BX TotalView-ITCH Version 3.2**

NASDAQ OMX added a note to Trade (Non-Cross) message format stating that the Order Reference Number would be zero for all transactions as of December 6, 2010.

#### **July 14, 2010: BX TotalView-ITCH Version 3.2**

NASDAQ OMX added a new Regulation SHO Short Sale Price Test Restricted Indicator message format to be introduced in the fourth quarter of 2010.

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**July 2, 2010: BX TotalView-ITCH Version 3.2**

NASDAQ OMX added a new Trading State code value of "V" to the Stock Trading Action message to denote a NASDAQ Volatility Guard trading pause.

**May 25, 2010: BX TotalView-ITCH Version 3.2**

NASDAQ OMX added two new Trading Action Reason code values (T5 and T7) for single security trading pause situations.

**January 26, 2010 – BX TotalView-ITCH Version 3.2 (New Symbology)**

Released a new version of the BX TotalView-ITCH documentation to support the following changes:

- Increased length of the symbol field from 6 characters to 8 characters in multiple message formats in support of the equity symbology initiative.
- Modified the values for the Market Category field in Symbol Directory messages to delineate among NYSE-, NYSE Amex- and NYSE Arca-listed issues.
- Added note to Appendix B to reflect that NASDAQ OMX is reviewing its stock symbol conventions to determine if changes are needed.

## Appendix B

### Stock Symbol Convention

For NASDAQ-listed issues, NASDAQ OMX currently restricts its symbol length to a maximum of 8 characters. For common stock issuances, NASDAQ, PSX and BX will only assign root symbols of 1 to 4 characters in length with possible fifth and or sixth character denoting a suffix. In certain instances, a dot "." delimiter may be applied to symbols after the root and between the suffix eg., XXXX.A. For subordinate securities, NASDAQ and BX will assign a 5 character symbol for which the last character relays information about the issue class or issue type. For the current list of fifth and or six character symbol suffixes, please refer to [Ticker Symbol Convention](#) page on the NASDAQ OMX Trader website.

For NYSE-, NYSE MKT- and NYSE Arca-listed securities with subordinate issue types, please refer to [Ticker Symbol Convention](#) page on the NASDAQ OMX Trader website.

## Appendix C

### Trading Action – Reason Codes

For NASDAQ-listed issues, NASDAQ acts as the primary market and has the authority to institute a trading halt in an issue due to news dissemination or regulatory reasons.

For BX-listed issues, NASDAQ OMX BX acts as the primary market and has the authority to institute a trading halt in an issue due to news dissemination or regulatory reasons.

For CQS issues, NASDAQ and BX abide by any regulatory trading halts instituted by the primary or listing market as appropriate.

For all issue types, NASDAQ and/or BX may also halt trading for operational reasons.

NASDAQ and/or BX will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, NASDAQ and BX also attempt to provide the reason for each trading action update. For bandwidth efficiency reasons, NASDAQ and BX use a 4-byte code for the reason on its outbound data feeds.

REASON CODES FOR TRADING HALT ACTIONS	
Code	Value
T1	Halt News Pending
T2	Halt News Disseminated
T5	Single Security Trading Pause In Affect
T6	Regulatory Halt — Extraordinary Market Activity
T8	Halt ETF
T12	Trading Halted; For Information Requested by Listing Market
H4	Halt Non-Compliance
H9	Halt Filings Not Current
H10	Halt SEC Trading Suspension
H11	Halt Regulatory Concern
O1	Operations Halt; Contact Market Operations
LUDP	Volatility Trading Pause
LUDS	Volatility Trading Pause – Straddle Condition
MWC1	Market Wide Circuit Breaker Halt – Level 1
MWC2	Market Wide Circuit Breaker Halt – Level 2
MWC3	Market Wide Circuit Breaker Halt – Level 3
MWC0	Market Wide Circuit Breaker Halt – Carry over from previous day
IPO1	IPO Issue Not Yet Trading
M1	Corporate Action
M2	Quotation Not Available
Space	Reason Not Available

REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS	
Code	Value
T3	News and Resumption Times
T7	Single Security Trading Pause / Quotation Only Period
R4	Qualifications Issues Reviewed/Resolved; Quotations/Trading to Resume
R9	Filing Requirements Satisfied/Resolved; Quotations/Trading To Resume
C3	Issuer News Not Forthcoming; Quotations/Trading To Resume
C4	Qualifications Halt ended; Maintenance Requirements Met; Resume
C9	Qualifications Halt Concluded; Filings Met; Quotes/Trades To Resume
C11	Trade Halt Concluded By Other Regulatory Auth.; Quotes/Trades Resume
MWCQ	Market Wide Circuit Breaker Resumption
R1	New Issue Available

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R2	Issue Available
IPOQ	<a href="#">IPO Security Released for Quotation (NASDAQ and BX Securities Only)</a>
IPOE	<a href="#">IPO Security — Positioning Window Extension (NASDAQ and BX Securities Only)</a>
<i>Space</i>	Reason Not Available