NASDAQ Best Bid and Offer (QBBO)
Version 1.0

Note: This version of the NASDAQ Best Bid and Offer (QBBO) service is designed to support symbols up to six characters only.

As noted in Data Technical News #2009-3, NASDAQ OMX is releasing a new version of QBBO to support expanded symbol fields. Given NYSE's announced plans to move to longer ticker symbols, NASDAQ OMX is requiring that direct data feed subscribers migrate to the new QBBO (Version 1.1) data formats between April 2010 and December 2010.

While NASDAQ OMX plans to support this version of the QBBO data formats through December 2010, the feed will carry data only for those securities with a ticker symbol (inclusive of suffixes) of six characters or less. This feed will be discontinued at the close of business on December 31, 2010.

1   Product Description

NASDAQ Best Bid and Offer (QBBO) is a direct data feed product offered by The NASDAQ Stock Market, LLC. QBBO provides the exchange's best bid and offer position for securities listed on the NASDAQ, New York Stock Exchange (NYSE), NYSE Amex and U.S. regional exchanges.

Market data distributors may use the QBBO data feed to feed dynamically updating stock tickers, portfolio trackers, trade alert programs, time and quote graphs, and other display systems. For market data administration purposes, QBBO is part of the NASDAQ Basic entitlement.

For pricing and ordering information:

- Refer to Market Data section of the NASDAQ OMX Trader website.
- Contact the NASDAQ OMX Global Data Products Account Team at +1 301 978 5307 or +45 33 93 33 66.

2   Network Protocol Options

For direct data feed subscribers, NASDAQ will offer QBBO in the following protocol options:

- SoupTCP
- Compression over SoupTCP
- MoldUDP

In order to match the NASDAQ Basic entitlement structure, QBBO will support three outbound channels for both protocol options. The QBBO data set will be channelized based on the listing market of a security.

Data Channel	Securities coverage
1	NYSE-listed issues

2	NYSE Amex- and U.S. regional stock exchange-listed issues
3	NASDAQ-listed issues

3　Architecture

QBBO will be 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 QBBO protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

4   Data Types

All numeric fields are represented in ASCII digits and are right-justified. Padding spaces appear on the left as necessary.

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.

Timestamp reflects the NASDAQ system time at which the outbound message was generated. NASDAQ states time as the number of milliseconds past midnight. The time zone is U.S. Eastern Time. All alpha fields are left-justified. Padding spaces appear on the right as necessary.

5   Message Formats

5.1   System Event Message

The System Event message is used to signal key market or data feed control events. QBBO will support the System Event messages.

SYSTEM EVENT MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Time Stamp	0	8	Numeric	Time stamp
Message Type	8	1	Alphanumeric	S = System Event
Event Code	9	1	Alphanumeric	Denotes the type of event for which the message is being generated. See list below for allowable values.

On a daily basis, QBBO will support the following event codes:

SYSTEM EVENT CODES – DAILY	
Code	*Explanation*
O	*Start of Transmissions*: Denotes that QBBO has started its daily transmission schedule
S	*Start of System Hours*: This message indicates that NASDAQ is open and ready to start accepting orders.
Q	*Start of Market Hours:* This message is intended to indicate that Market Hours orders are available for execution.
M	*End of Market Hours:* This message is intended to indicate that Market Hours orders are no longer available for execution.
E	*End of System Hours:* It indicates that NASDAQ is now closed and will not accept any new orders today.
C	*End of Transmissions:* Denotes that QBBO has completed its daily transmission schedule.

In the event of an emergency market condition (EMC), QBBO will also support the following event codes:

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

5.2   Administrative Messages

5.2.1 Stock Directory

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

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

STOCK DIRECTORY MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Time Stamp	0	8	Numeric	Time Stamp.
Message Type	8	1	Alphanumeric	R = Stock Directory
Issue Symbol	9	6	Alphanumeric	NASDAQ-assigned indicator for issue for which the directory message is being generated. For details on NASDAQ symbology, please refer to Appendix B.

Market Category	15	1	Alphanumeric	Denotes the listing market for the issue. The allowable values are:

Code	Value
T	Non-NASDAQ-Listed Issue (NYSE-, NYSE Amex-, and regional exchange-listed security)
Q	NASDAQ Global Select Market
G	NASDAQ Global Market
S	NASDAQ Capital Market
<Space>	Not available

Financial Status Indicator	16	1	Alphanumeric	For NASDAQ-listed issues, this field indicates when a firm is not in compliance with NASDAQ continued listing requirements. The allowable values are:

Code	Value
D	Deficient
E	Delinquent
Q	Bankrupt
G	Deficient and Bankrupt
H	Deficient and Delinquent
J	Delinquent and Bankrupt
K	Deficient, Delinquent, and Bankrupt
<space>	Company is in compliance with NASDAQ listing standards OR Issue is not listed on NASDAQ

5.2.2 Stock Trading Action

NASDAQ uses this administrative message to indicate the current trading status of a security to the trading community.

Prior to the start of system hours, NASDAQ will send out a Trading Action spin. In the spin, NASDAQ 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 platform at the start of the system hours.   Please note that securities may be halted in the NASDAQ system for regulatory or operational reasons.

After the start of system hours, NASDAQ will use the Trading Action message to relay changes in trading status for an individual security. Messages will be sent when a stock is:

- Halted / paused
- Released for quotation
- Released for trading.

STOCK TRADING ACTION MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Time Stamp	0	8	Numeric	Time Stamp.
Message Type	8	1	Alphanumeric	H = Trading Action
Issue Symbol	9	6	Alphanumeric	NASDAQ-assigned indicator for issue for which the stock trading action message is being generated. For details on NASDAQ symbology, please refer to Appendix B.
Security Class	15	1	Alphabetic	Indicates the primary listing market for the issue. Allowable values are: <table><tr><td>Code</td><td>Value</td></tr><tr><td>Q</td><td>NASDAQ Listed Issue</td></tr><tr><td>N</td><td>NYSE</td></tr><tr><td>A</td><td>NYSE Amex</td></tr><tr><td>P</td><td>NYSE Arca</td></tr></table>
Current Trading State	16	1	Alphabetic	Reflects the current trading state for the issue. The allowable values are: <table><tr><td>Code</td><td>Value</td></tr><tr><td>H</td><td>Halted or paused on NASDAQ and all UTP participants</td></tr></table>

				V	Halted or paused on NASDAQ OMX
				Q	Quotation only period for cross-SRO halt or pause
				R	Quotation only period for NASDAQ OMX only halt or pause
				T	Trading on NASDAQ
Reason	17	4	Alphanumeric		Reflects the Market Ops or MarketWatch code for the trading state change. Refer to Appendix C for current code list.

Note: For NASDAQ-listed securities, NASDAQ conducts a cross when it releases an IPO security or when it re-opens a seasoned security after a trading halt or trading pause. To facilitate price transparency for its crosses, NASDAQ disseminates a Net Order Imbalance Indicator (NOII) message via the **NASDAQ TotalView** product suite at 5-second intervals during the quotation only period of the Trading Action release.   The NOII data is especially valuable because it includes all order types (displayable and non-displayable) in its calculation.

5.3   Quotation Message

QBBO will broadcast a real-time update every time that the exchange's best bid and offer quote is updated during the trading day.

QBBO QUOTATION MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Time Stamp	0	8	Numeric	Time stamp
Message Type	8	1	Alphanumeric	Q = QBBO Quotation Message
Stock	9	6	Alphanumeric	Denotes the NASDAQ market center system issue identifier for which the QBBO quotation message is being generated.
Security Class	15	1	Alphabetic	Indicates the primary listing market for the stock. The allowable values are as follows: **Code / Value** T — Non-NASDAQ-listed security Q — NASDAQ-listed security
NASDAQ Best Bid Price	16	10	Numeric	Denotes the NASDAQ best bid price – the highest price for market buy order(s) in the NASDAQ system. Price format is $$$$$$dddd.
NASDAQ Best Bid Size	26	9	Numeric	Denotes the aggregated number of shares available for display

				within the NASDAQ market center system at the NASDAQ best bid Price.
NASDAQ Best Offer Price	16	10	Numeric	Denotes the NASDAQ exchange's best offer price – the lowest price for market sell order(s) in the NASDAQ system. Price format is $$$$$$dddd.
NASDAQ Best Offer Size	26	9	Numeric	Denotes the aggregated number of shares available for display within the NASDAQ market center system at the NASDAQ Best Offer Price.

6 Contact Information

Questions about the NASDAQ Basic entitlement and QBBO specification document may be directed to NASDAQ OMX Global Data Products at +1 301 978 5307.

Questions about QBBO transmissions may also be directed to NASDAQ OMX Operations Center.

Appendix A - Stock Symbol Convention

For bandwidth efficiency reasons, NASDAQ supports a 6-byte symbol field on its proprietary order, quotation and trade data feed products.

For most classes of securities, this field length is sufficient to support the exchange-assigned symbol. For NYSE- and NYSE Amex-listed securities with subordinate issue types, however, NASDAQ may modify the trading symbol to fit the allotted field size on the data feeds.   For the current symbol convention matrix, please refer to the Ticker Symbol Conversion for CQS Securities page on the NASDAQ OMX Trader website.

For NASDAQ-listed issues, NASDAQ currently restricts its symbol length to a maximum of 5 characters.   For common stock issuances, NASDAQ will assign a symbol of 1 to 4 characters in length. For subordinate securities, NASDAQ 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 character symbol suffixes, please refer to Current List of Fifth Character Symbol Suffixes for NASDAQ-listed Issues on the NASDAQ OMX Trader website.

Appendix B – Trading Action Reason Codes

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

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

For both issue types, NASDAQ may also halt trading for operational reasons.

NASDAQ will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, NASDAQ also attempts to provide the reason for each trading action update. For bandwidth efficiency reasons, NASDAQ uses 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 Stock Trading Pause In Effect
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
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 Stock 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
R1	New Issue Available
R2	Issue Available
IPOQ	IPO Security Released for Quotation (NASDAQ Securities Only)

IPOE	IPO Security — Positioning Window Extension (NASDAQ Securities Only)
<space>	Reason Not Available

For the current list of regulatory halts, please refer to the Trading Halts page on the NASDAQ OMX Trader website.

Appendix C – Documentation Version Control Log

QBBO Version 1.00   **September 17, 2008**
Initial release of the QBBO data feed specification for internal NASDAQ use.

QBBO Version 1.00   **October 30, 2008**
Modified the Stock Directory and the Stock Trading Action message formats to match the NASDAQ Last Sale (NLS) data formats.

QBBO Version 1.00   **September 21, 2009**
Corrected line channel numbering to match MoldUDP address list.

QBBO Version 1.00   **May 25, 2010**
Added two new Trading Action – Reason Code values (T5 and T7) for the Single Stock Trading Pause.

QBBO Version 1.00   **July 2, 2010**
NASDAQ OMX added new Action Trading code(s) to the Stock Trading Action message for the NASDAQ Volatility Guard trading pause.

QBBO Version 1.00   **October 14, 2010**
NASDAQ OMX fixed a documentation error related to the Stock Trading Action message.