Nasdaq NOIView
Version 3.0

1. Overview

Nasdaq NOIView 3.0 is a direct data feed product offered by The Nasdaq Stock Market®, which features the following data elements:

- o Net Order Imbalance Data: In the minutes leading up to the Nasdaq Opening and Closing Crosses as well as IPO/Halt/Imbalance Cross, Nasdaq disseminates the indicative clearing price and net order imbalance in the Nasdaq execution system. Because the calculation includes non-displayable as well as displayable order types, the net order imbalance indicator (NOII) is the best predictor of the Nasdaq opening and closing prices available to the public.

- o Administrative messages, such trading actions and symbol directory for Nasdaq-listed issues:

  - o Stock trading action messages are used to inform market participants when a security is halted / paused, released for quotation and released for trading.

  - o Stock symbol Directory messages provide basic security data such as the market tier and Financial Status Indicator.

Please note that NOIView is a filtered Nasdaq data feed product. The NOII and administrative messages are also supported on the Nasdaq TotalView-Aggregated data feed.

2. Architecture

The NOIView 3.0 feed is made up of a series of sequenced messages. Each message is variable in length based on the message type. The messages that make up the NOIView 3.0 protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

Nasdaq offers the NOIView 3.0 data feed in three protocol options:

- o SoupBinTCP

- o Compressed via SoupBinTCP

- o MoldUDP64

Please note that, for each data center connection, NOIView 3.0 messages will be disseminated via a single outbound data channel.

3. Data Types

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

Prices are integer fields, supplied with an associated precision. When converted to a decimal format, prices are in a fixed point format, where the precision defines the number of decimal places. For example, a field flagged as Price (4) has an implied 4 decimal digits.

Timestamps reflects the Nasdaq system time at which the outbound message was generated. Nasdaq states time as the number of nanoseconds past midnight. The time zone is U.S. Eastern Time.

All alphanumeric fields are left-justified.   Padding spaces appear on the right as necessary.

4. Message Formats

Nasdaq NOIView 3.0 supports three basic types of messages:

- o System Events

- o Nasdaq Net Order Imbalance Indicators

- o Administrative Data

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

4.1 System Event Message

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

SYSTEM EVENT MESSAGE				
Name	*Offset*	*Length*	*Value*	*Notes*
Message Type	0	1	"S"	System Event Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the system event was generated.
Event Code	9	1	Alpha	Refer to System Event Codes below

SYSTEM EVENT CODES	
Code	*Explanation*
"O"	*Start of Messages.* This is always the first message sent in any trading day.
"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.
"X"	*Clear NOII - Opening Cross Data.* This message signals that firms may clear NOII cache for the regular Opening Cross.
"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.
"C"	*End of Messages.* This is always the last message sent in any trading day. For initial implementation of the integrated Nasdaq system, this message will be disseminated between 8:00 and 9:00 p.m., ET.

4.2 Administrative Message

4.2.1 Stock Directory

At the start of each trading day, Nasdaq disseminates stock directory messages for all active symbols in the Nasdaq execution 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.

STOCK DIRECTORY				
Name	*Offset*	*Length*	*Value*	*Notes*
Message Type	0	1	Alphanumeric	R = Stock Directory Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Integer	Time Stamp
Stock	9	8	Alphanumeric	Denotes the security symbol for the issue in the Nasdaq execution system.
Market Category	17	1	Alphanumeric	Indicates Listing market or listing market tier for the issue
Financial Status Indicator	18	1	Alphanumeric	For Nasdaq-listed issues, this field indicates when a firm is not in compliance with Nasdaq continued listing requirements.

Market Category codes:

Code	Definition
Nasdaq-Listed Instruments	
Q	Nasdaq Global Select Market^{SM}
G	Nasdaq Global Market^{SM}
S	Nasdaq Capital Market®
Non-Nasdaq-Listed Instruments	
N	New York Stock Exchange (NYSE)
A	NYSE American
P	NYSE Arca
M	NYSE Texas
Z	BATS Z Exchange
V	Investors' Exchange, LLC

Financial Status Indicator codes:

Code	Definition
Nasdaq-Listed Instruments	
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
C	Creations and/or Redemptions Suspended for Exchange Traded Product

				N	Normal (Default): Issuer Is NOT Deficient, Delinquent, or Bankrupt
				Non-Nasdaq-Listed Instruments	
				\<space\>	Not available. Firms should refer to SIAC feeds for code if needed.
Round Lot Size	19	4	Integer	Denotes the number of shares that represent a round lot for the issue	
Round Lots Only	23	1	Alphanumeric	Indicates if Nasdaq system limits order entry for issue	

Round Lots Only:

Code	Definition
Y	Nasdaq system only accepts round lots orders for this security.
N	Nasdaq system does not have any order size restrictions for this security. Odd and mixed lot orders are allowed.

Field	Offset	Length	Type	Description
Issue Classification	24	1	Alphanumeric	Identifies the security class for the issue as assigned by Nasdaq. See Appendix for allowable values.
Issue Sub-Type	25	2	Alphanumeric	Identifies the security sub-type for the issue as assigned by Nasdaq. See Appendix for allowable values.
Authenticity	27	1	Alphanumeric	Denotes if an issue or quoting participant record is set-up in Nasdaq systems in a live/production, test, or demo state. Please note that firms should only show live issues and quoting participants on public quotation displays.

Authenticity:

Code	Definition
P	Live/Production
T	Test

Field	Offset	Length	Type	Description
Short Sale Threshold Indicator	28	1	Alphanumeric	Indicates if a security is subject to mandatory close-out of short sales under SEC Rule 203(b)(3).

Short Sale Threshold Indicator:

Code	Definition
Y	Issue is restricted under SEC Rule 203(b)(3)
N	Issue is not restricted
\<space\>	Threshold Indicator not available

Field	Offset	Length	Type	Description
IPO Flag	29	1	Alphanumeric	Indicates if the Nasdaq security is set up for IPO release. This field is intended to help Nasdaq market participant firms comply with FINRA Rule 5131(b).

Code	Definition
Nasdaq-Listed Instruments	
Y	Nasdaq listed instrument is set up as a new IPO security
N	Nasdaq listed instrument is not set up as a new IPO security
Non-Nasdaq-Listed Instruments	
\<space\>	Not available

LULD Reference Price Tier	30	1	Alphanumeric	Indicates which Limit Up / Limit Down price band calculation parameter is to be used for the instrument. Refer to LULD Rule for details.

Code	Definition
1	Tier 1 NMS Stocks and select ETPs
2	Tier 2 NMS Stocks
<space>	Not applicable

ETP Flag	31	1	Alphanumeric	Indicates whether the security is an exchange traded product (ETP):

Code	Definition
Y	Instrument is an ETP
N	Instrument is not an ETP
<space>	Not available

| ETP Leverage Factor | 32 | 4 | Integer | Tracks the integral relationship of the ETP to the underlying index.   Example: If the underlying Index increases by a value of 1 and the ETP's Leverage factor is 3, indicates the ETF will increase/decrease (see Inverse) by 3.

Leverage Factor is rounded to the nearest integer below, e.g. leverage factor 1 would represent leverage factors of 1 to 1.99.

This field is used for LULD Tier I price band calculation purposes.

ETP Leverage Factor currently not supported for Non-Nasdaq listed ETP's. |
|---|---|---|---|---|

Inverse Indicator	36	1	Alphanumeric	Indicates the directional relationship between the ETP and underlying index.

Code	Definition
Y	ETP is an Inverse ETP
N	ETP is not an Inverse ETP

Example: An ETP Leverage Factor of 3 and an Inverse value of 'Y' indicates the ETP will decrease by a value of 3.

4.2.2 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

* The paused status will be disseminated for Nasdaq-listed securities only. Trading pauses on non- Nasdaq listed securities will be treated simply as a halt.

STOCK TRADING ACTION				
Name	*Offset*	*Length*	*Value*	*Notes*
Message Type	0	1	"H"	Stock Trading Action Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the stock trading action message was generated
Stock	9	8	Alphanumeric	Denotes the security symbol for the issue in the Nasdaq execution system.
Current Trading State	17	1	Alphanumeric	Reflects the current trading state for the issue "H" = Halted across all U.S. equity markets / SROs "P" = Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only) "Q" = Quotation only period for cross-SRO halt or pause "T" = Trading on Nasdaq
Reason	18	4	Alphanumeric	Reflects the Market Ops or MarketWatch code for the trading state change. Refer to Appendix C for values.

4.2.3 Reg SHO Short Sale Price Test Restricted Indicator

In February 2011, 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.

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
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the Reg SHO message was generated
Stock	9	8	Alphanumeric	Stock symbol right padded with spaces.

Reg SHO Action	17	1	Alphanumeric	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 Net Order Imbalance Indicator (NOII)

- Nasdaq begins disseminating Net Order Imbalance Indicators (NOII) at 9:25 a.m. for the Opening Cross and 3:50 p.m. for the Closing Cross.
- Between 9:25 and 9:28 a.m. and 3:50 and 3:55 p.m., Nasdaq disseminates the NOII information every 10 seconds.
- Between 9:28 and 9:30 a.m. and 3:55 and 4:00 p.m., Nasdaq disseminates the NOII information every second.
- For Nasdaq Halt, IPO and Pauses, NOII messages will be disseminated at 1 second intervals starting 1 second after quoting period starts/trading action is released.
- For more information, please see the FAQ on Opening and Closing Crosses.
- Nasdaq will also disseminate an Extended Trading Close (ETC) message from 4:00 p.m. to 4:05 p.m. at five second intervals.
- For more information, please see the FAQ on Extended Trading Close.

NOII MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Message Type	0	1	"I"	NOII Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the NOII message was generated
Paired Shares	9	8	Integer	Indicates the total number of shares that are eligible to be matched at the Current Reference Price.
Imbalance Shares	17	8	Integer	Number of shares not paired at the Current Reference Price.
Imbalance Direction	25	1	Alphanumeric	Indicates the market side of the imbalance "B" = buy imbalance "S" = sell imbalance "N" = no imbalance "O" = insufficient orders to calculate "P" = Paused
Stock	26	8	Alphanumeric	Denotes the security symbol for which the NOII message is being generated
Far Price	34	4	Price (4)	A hypothetical auction-clearing price for cross orders only.
Near Price	38	4	Price (4)	A hypothetical auction-clearing price for cross orders as well as continuous orders.

Current Reference Price	42	4	Price (4)	Indicates price at which the NOII shares are being calculated.
Cross Type	46	1	Alphanumeric	Denotes the type of Nasdaq cross for which the NOII message is being generated "O" = Open Cross "C" = Close Cross "H" = Intra-day Opening Cross for IPO and Halted / Paused securities "A" = Extended Trading Close
Price Variation Indicator	47	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% "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

4.4   Cross Trade Message

Cross Trade message indicates that Nasdaq has completed its cross process for a specific security. Nasdaq sends out a Cross Trade message for all active 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 security has been completed. (Note: For the halted / paused securities, firms should use the Trading Action message to determine when an issue has been released for trading.)

For most issues, 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.

CROSS TRADE MESSAGE				
Name	**Offset**	**Length**	**Value**	**Notes**
Message Type	0	1	"Q"	Cross Trade Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the stock trading action message was generated
Shares	9	8	Integer	The number of shares matched in the Nasdaq Cross.
Stock	17	8	Alphanumeric	The security symbol associated with the cross trade message.
Cross Price	25	4	Price (4)	The price at which the cross occurred. Refer to Data Types for field processing notes.

| Match Number | 29 | 8 | Integer | The Nasdaq generated day-unique Match Number of this execution. |
| Cross Type | 37 | 1 | Alphanumeric | The Nasdaq cross session for which the message is being generated. "O" = Nasdaq Opening Cross. "C" = Nasdaq Closing Cross. "H" = Cross for IPO and halted / paused securities. |

4.5 IPO Quoting Period Update

Indicates the anticipated IPO quotation release time of a security.

IPO Quoting Period Update				
Name	**Offset**	**Length**	**Value**	**Notes**
Message Type	0	1	"K"	IPO Release Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the IPO message was generated
Stock	9	8	Alphanumeric	Denotes the security symbol for the issue in the Nasdaq execution system.
IPO Quotation Release Time	17	4	Integer	Denotes the IPO release time for quotation to the nearest second. Format: HHMMSS NOTE: If the quotation period is being canceled/postponed, we should state that 1. IPO Quotation Time will be set to 0 2. IPO Price will be set to 0
IPO Quotation Release Qualifier	21	1	Alphanumeric	**Code** / **Description** A / **Anticipated quotation release time** *This value would be used when Nasdaq Market Operations initially enters the IPO instrument for release.* C / **IPO release canceled/postponed** *This value would be used when Nasdaq Market Operations cancels or postpones the release of the IPO instrument.*
IPO Price	22	4	Price (4)	Denotes the IPO price to be used for intraday net change calculations. 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.

4.6 Direct Listing with Capital Raise Price Discovery Message

The following message is disseminated only for Direct Listing with Capital Raise (DLCR) securities. Nasdaq begins disseminating messages once per second as soon as the DLCR volatility test has successfully passed.

Direct Listing with Capital Raise Price Discovery Message

Name	Offset	Length	Value	Notes
Message Type	0	1	"O"	Direct Listing with Capital Raise Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Integer	Nanoseconds since midnight
Stock	9	8	Alpha	Stock symbol, right padded with spaces
Open Eligibility Status	17	1	Alpha	Indicates if the security is eligible to be released for trading "N": Not Eligible "Y": Eligible
Minimum Allowable Price	18	4	Price (4)	20% below Registration Statement Lower Price
Maximum Allowable Price	22	4	Price (4)	80% above Registration Statement Highest Price
Near Execution Price	26	4	Price (4)	The current reference price when the DLCR volatility test has successfully passed
Near Execution Time	30	8	Integer	The time at which the near execution price was set
Lower Price Range Collar	38	4	Price (4)	Indicates the price of the Lower Auction Collar Threshold (10% below the Near Execution Price)
Upper Price Range Collar	42	4	Price (4)	Indicates the price of the Upper Auction Collar Threshold (10% above the Near Execution Price)

5. Support

For general product support for Nasdaq data feeds, please contact clientsuccess@nasdaq.com.

Appendix A

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
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 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
MWCQ	Market Wide Circuit Breaker Resumption
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

Note: At this time, Nasdaq does not support Reason codes for Trading Resumption actions. Nasdaq also does not support the Reason codes in the pre-opening Trading Action spins.

Appendix B

Issue Classification Values
Identifies the security class for the issue as assigned by Nasdaq

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	Value
A	American Depositary Share
B	Bond
C	Common Stock
F	Depository Receipt
I	144A
L	Limited Partnership
N	Notes
O	Ordinary Share
P	Preferred Stock
Q	Other Securities
R	Right
S	Shares of Beneficial Interest
T	Convertible Debenture
U	Unit
V	Units/Benif Int
W	Warrant

Appendix D

Issue Sub-Type Values

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	**Value**
A	Preferred Trust Securities
AI	Alpha Index ETNs
B	Index Based Derivative
C	Common Shares
CB	Commodity Based Trust Shares
CF	Commodity Futures Trust Shares
CL	Commodity-Linked Securities
CM	Commodity Index Trust Shares
CO	Collateralized Mortgage Obligation
CT	Currency Trust Shares
CU	Commodity-Currency-Linked Securities
CW	Currency Warrants
D	Global Depositary Shares
E	ETF-Portfolio Depositary Receipt
EG	Equity Gold Shares
EI	ETN-Equity Index-Linked Securities
EM	Exchange Traded Managed Funds*
EN	Exchange Traded Notes
EU	Equity Units
F	HOLDRS
FI	ETN-Fixed Income-Linked Securities
FL	ETN-Futures-Linked Securities
G	Global Shares
I	ETF-Index Fund Shares
IR	Interest Rate
IW	Index Warrant
IX	Index-Linked Exchangeable Notes
J	Corporate Backed Trust Security
L	Contingent Litigation Right
LL	Identifies securities of companies that are set up as a Limited Liability Company (LLC)
M	Equity-Based Derivative
MF	Managed Fund Shares
ML	ETN-Multi-Factor Index-Linked Securities
MT	Managed Trust Securities
N	NY Registry Shares
O	Open Ended Mutual Fund
P	Privately Held Security
PP	Poison Pill
PU	Partnership Units
Q	Closed-End Funds
R	Reg-S
RC	Commodity-Redeemable Commodity-Linked Securities
RF	ETN-Redeemable Futures-Linked Securities
RT	REIT
RU	Commodity-Redeemable Currency-Linked Securities
S	SEED
SC	Spot Rate Closing
SI	Spot Rate Intraday

T	Tracking Stock
TC	Trust Certificates
TU	Trust Units
U	Portal
V	Contingent Value Right
W	Trust Issued Receipts
WC	World Currency Option
X	Trust
Y	Other
Z	Not Applicable

* Nasdaq is planning to introduce Exchange Traded Managed Funds (ETMFs) in 2015. EMTF prices will be stated in proxy price on this feed. Nasdaq is expected to issue vendor display requirements for this new asset class.

Appendix D

Documentation Revision Control Log

April 28, 2023: Nasdaq NOIView Version 3.0
Introduction of Direct Listing with Capital Raise Message and new Imbalance Direction of Paused to NOII Message

July 14, 2022: Nasdaq NOIView Version 3.0
Due to the launch of non-integer leverage factors, updated the Value/Description field of ETP Leverage Factor from section 4.2.1 page 5.

September 12, 2017: Nasdaq NOIView Version 3.0
Nasdaq added a new Market Category code in the Symbol Directory messages for the Investors' Exchange,   LLC to distinguish IEX--listed issues. New market category code is "V".

March 6, 2015: Nasdaq NOIView Version 3.0
Released a new version of NOIView documentation to include new Issue Sub-Type Code "EM" for Exchange Traded Managed Funds.

December 5, 2014: Nasdaq TotalView-ITCH Version 5.0
Released a new version of TotalView-ITCH documentation to include missing Issue Sub-Type Codes (Appendix E):
- AI – Alpha Indexes ETNs
- CO – Collateralized Mortgage Obligation
- EU – Equity Units
- F – HOLDRS
- IR – Interest Rate
- IW – Index Warrant
- J – Corporate Backed Trust Security
- PP – Poison Pill
- Q – Closed -End Funds
- RT – REIT
- SC – Spot Rate Closing
- SI – Spot Rate Intraday
- WC – World Currency Option
- X – Trust
- Y – Other
- Z – NA

January 8, 2014: Nasdaq NOIView Version 3.0
Released a new version of NOIView documentation to support the following change:
- Corrected Cross Trade Message Type to 'Q'

October 1, 2013: Nasdaq NOIView Version 3.0
Released a new version of NOIView documentation to support the following change:
- Conversion to Binary

August 2, 2013: Nasdaq NOIView Version 3.0
Released a new version of the NOIView documentation to support the following changes:
- Updated field offsets in the Symbol Directory Message
- Changed the IPO Quotation Release Message Type to "K"

- Updated length of the IPO Quotation Release Time in the IPO Quotation Release Message. Also, included format of the field.
- Renamed the Compliance ID field to TrackingID

July 10, 2013: Nasdaq NOIView Version 3.0
Released a new version of the NOIView documentation to support the following changes:
- Added Enhanced Symbol Directory
- Added IPO Quotation Release Message
- Addition of an internal tracking number to select messaging
- Addition of 'C' to the Financial Status Indicator field in the Symbol Directory Message

March 9, 2013: Nasdaq NOIView Version 2.1
Released a new version of the NOIView documentation to support the following changes:
- 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.
  - o LUDS - Volatility Trading Pause – Straddle Condition

January 9, 2013: Nasdaq NOIView Version 2.1
Released a new version of the NOIView documentation to support the following changes:
- Added the following Trading Action Reason Code:
  - o MWC0 - Market Wide Circuit Breaker Halt – Carry over from previous day
- Removed the Trading State, "R", from the Stock Trading Action message.

November 6, 2012: Nasdaq NOIView Version 2.1
Released a new version of the NOIView 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:
  - o LUDP - Volatility Trading Pause
  - o MWC1 - Market Wide Circuit Breaker Halt – Level 1
  - o MWC2 - Market Wide Circuit Breaker Halt – Level 2
  - o MWC3 - Market Wide Circuit Breaker Halt – Level 3
  - o MWCQ - Market Wide Circuit Breaker Resumption
- Removed the Trading Action values related to the Volatility Guard Program. Removed Trading State, "V". Eliminated Trading Action Reason Codes, V1 and V2.

November 1, 2011: Nasdaq NOIView Version 2.1
Nasdaq added a new Market Category code in Stock Directory messages for the BATS BZX Exchange to distinguish BATS-listed issues. New market category code is "Z".

May 2, 2011: Nasdaq NOIView Version 2.1
Nasdaq added Cross Trade message format to the NOIView specification document. Nasdaq will begin to disseminate the Cross Trade message on NOIView in the June 2011 timeframe.

April 6, 2011: Nasdaq NOIView Version 2.1
Nasdaq added two new Trading Action – Reason codes to Appendix C for the Nasdaq Volatility Guard pilot program.   New Reason codes were V1 and V2.

November 11, 2010: Nasdaq NOIView Version 2.1
Nasdaq fixed an error in the Stock Trading Action message format introduced in July 2010.

November 4, 2010: Nasdaq NOIView Version 2.1
Nasdaq updated the Regulation SHO message definition to reflect the new SEC implementation date.

July 14, 2010: Nasdaq NOIView Version 2.1

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

July 2, 2010: Nasdaq NOIView Version 2.1
Nasdaq added new Action Trading code(s) to the Stock Trading Action message for the Nasdaq Volatility Guard trading pause.

May 25, 2010: Nasdaq NOIView Version 2.1
Nasdaq added two new Trading Action Reason code values (T5 and T7) for single security trading pause situations.

January 26, 2010: Nasdaq NOIView Version 2.1
Nasdaq releases a NOIView – Version 2.1 in support of equity symbology initiative. NOIView – Version 2.1 includes the following format 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 Catetgory field in Symbol Directory messages to delineate among NYSE-, NYSE Amex- and NYSE Arca-listed issues.

In addition, Nasdaq updated the NOIView document to reflect that Nasdaq Opening and Closing Cross process now includes NYSE, NYSE Amex and NYSE Arca issues.

February 20, 2007: Nasdaq NOIView Version 2.0

Nasdaq releases the NOIView 2.0 specification document to the public.

For efficiency reasons, Nasdaq plans to move the NOIView product to a new system platform in the second quarter of 2007.   In association with the platform change, Nasdaq will also modify the data formats to support 6-byte issue symbols as required under the new Nasdaq symbol plan.   Please see Nasdaq Vendor Alert #2007-012 for the detailed customer migration plans.