The UTP Plan
Trade Data Feed^{SM} (UTDF^{SM})

Direct Subscriber Interface Specification

Version 14.4

Revised: November 2015

UTP Trade Data Feed (UTDF) Specifications

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Introduction

1.0   Introduction

1.1   Background

Section 12(f) of the Securities and Exchange Act of 1934 permits NASDAQ® to extend "unlisted trading privileges" (UTP) for its listed securities. Through UTP, other U.S. exchanges and markets are able to quote and trade issues listed on the NASDAQ Stock Market®. Under the UTP Plan, all U.S. exchanges, that quote and trade NASDAQ listed securities, must provide their data to a centralized securities information processor (SIP) for data consolidation and dissemination.

NASDAQ, in its current role as the UTP SIP for the UTP Plan, supports following data feed products:

- **UTP Quotation Data Feed**SM **(UQDF**SM**)** provides best bid and offer (BBO) quotes from the UTP participants as well as the consolidated national best bid and offer (National BBO) quotes for securities listed on the NASDAQ Stock Market®.

- **UTP Trade Data Feed**SM **(UTDF**SM**)** provides trade data from the UTP participants for securities listed on the NASDAQ Stock Market®.

- **OTC Montage Data Feed**SM **(OMDF**SM**)** provides data for over-the-counter brokers that quote securities listed on the NASDAQ Stock Market® via the Financial Industry Regulatory Authority (FINRA-formerly NASD) Alternative Display Facility (FINRA ADF). For information on this market center, please refer to the FINRA web site at www.finra.org/RegulatorySystems/ADF/index.htm.

Usage of the information contained on this data feed is subject to NASDAQ reporting and administrative policies as outlined in the *NASDAQ Data Feed Subscriber Agreement* and *NASDAQ Distributor Agreement*. Please consult with the appropriate personnel within your firm about your contractual requirements before implementing a new system.

Under the UTP plan, UQDF and UTDF are part of the Level 1 entitlement. For the fee schedule, please refer to the UTP Pricing page on NASDAQ Trader at http://www.nasdaqtrader.com/content/productsservices/pricelist/nasdaqomxpricelist.pdf.

1.2   Upcoming Data Feed Enhancements

At the request of the UTP Operating Committee, the UTP SIP has implemented a quarterly release schedule for the UTP data feeds.

There is a formal process by which the UTP Operating Committee will decide the enhancements to be included in each release. Both UTP participants and market data distributors may submit UTP data feed enhancement requests to NASDAQ for possible consideration. The UTP Operating Committee will periodically vote on which enhancement requests to include in the upcoming quarterly data feed release. Once the UTP Operating Committee has made its decision, NASDAQ will update the data feed format specifications as necessary.

Introduction

1.2.1   *Launch of Investors' Exchange LLC (IEX) as a New Participant to UTP Plan*

As announced in UTP Vendor Alert 2015-18, the UTP Operating Committee has received a request from Investors' Exchange LLC ("IEX"), to join the UTP Plan. The following Market Center Originator ID will be added as allowable values for UTP Quotation Data Feed (UQDF) and UTP Trade Data Feed (UTDF) data feeds:

- Investors' Exchange LLC, ("V")

Pending SEC approval, IEX plans to commence quoting and trading of Nasdaq-listed securities under the UTP plan in March 2016 with a phased rollout plan. IEX will maintain a rollout schedule on their web site.

Once activated IEX's hours of operation in UTP will be as follows:

Session	Start and End Times
Pre-Market Session	8:00 a.m. - 9:30 a.m. ET
Regular Market Session	9:30 a.m. - 4:00 p.m. ET
Post-Market Session	4:00 p.m. – 5:30 p.m. ET

Please refer to the IEX web site, for more information or questions related to IEX's entrance as a UTP Participant.

1.3   *Connectivity Options*

As of November 2004, the UTP operating committee authorized the UTP SIP to begin to offer direct access to its data feeds through the extranet providers. These extranet providers are connected directly to the NASDAQ primary data center and disaster recovery facility. Please visit the following links for the approved Direct Connectivity or extranet providers.

1.4 Scope

This document defines the communications interface and message format requirements for the output from **UTP Trade Data Feed (UTDF)**. All references to a time of day in this specification are in Eastern Standard/Daylight Time.

This document was last updated on **November 16, 2015**.   Please refer to Appendix G of this document for version control information. The UTP Plan reserves the right to add, delete, or modify the message formats outlined in this document as needed. In advance of any data format changes, NASDAQ will post a UTP Vendor Alert to the NASDAQ Trader[SM] Web site with the details of the release.

Although NASDAQ will attempt to update this specification on a quarterly basis, UQDF subscribers should read all UTP Vendor Alerts to ensure that they are have the most up-to-date information on technical and administrative changes. Vendors may request to receive automatic e-mail notification of NASDAQ Trader postings by sending a message to dataproducts@nasdaqomx.com.

2.0   Transmission Characteristics

2.1   Bandwidth Allocations

As noted below, the UTP SIP broadcasts two (a primary and a back-up) multicast groups for its data feeds. For this data feed, the UTP SIP disseminates data via three logical channels for each multicast group on the extranets. The current bandwidth allocation for the IP multicast channels are as follows:

2.1.1   Current Bandwidth Allocation Table

For additional information, please refer to UTP Vendor Alert #2015-05. The UTP Participants have updated their traffic projections for July, 2015, and completed its migration from a 1-second planning interval to 100-milliseconds (1/10 of a second). The use of the 100-millisecond interval better reflects system utilization during bursts of traffic. The maximum output traffic rates for UTP data services will be as follows:

New 100-Millisecond bandwidth recommendation, effective June 29, 2015:

UTP Data Feed	New Bandwidth Allocation Megabits Per 100-Millisecond (Mbp100ms) (per multicast group)
UTDF (A-CD)	6,666,666 bits per 100ms
UTDF (CE-FD)	6,666,666 bits per 100ms
UTDF (FE-LK)	6,666,667 bits per 100ms
UTDF (LL-PB)	6,666,667 bits per 100ms
UTDF (PC-SP)	6,666,667 bits per 100ms
UTDF (SQ-ZZ)*	6,666,667 bits per 100ms
Total	*40.00 (Mbp100ms)*

*Channel 6 will go to ZZZZ, accounting for all remaining securities.

In order to best utilize the bandwidth allocated, the UTP SIP may periodically rebalance the bandwidth apportionment between the channels by changing throttle limits.

Market data will be split between the six channels based on the first character of the issue symbol as detailed in the above table. Control messages and general administrative messages, which do not contain an issue symbol, will be disseminated on all channels.

Please note that UTP Plan reserves the right to modify the bandwidth allocation for these IP calls as system capacity dictates. Extranet customers are required to maintain sufficient network capacity to handle the data feed products ordered.

2.2   Transmission Protocol

2.2.1   Protocol Overview

Regardless of network option, SIP data feed transmissions will be transmitted in a non-interactive simplex mode using Internet Protocol (IP) multicast. A broadcast transmission with no answer back will be employed. A version of Cisco's Protocol Independent Multicast (PIM) routing protocol will be used to route multicast packets through the network. All transmissions will be in standard ASCII code with 7 data bits (8th bit is zero).

SIP data feeds are designed to adhere to Request for Comment (RFC) 1112 standard from The NIC Group for IP multicast protocol. This RFC states:

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Transmission Characteristics

IP multicasting is the transmission of an IP datagram to a "host group", a set of zero or more hosts identified by a single IP destination address. A multicast datagram is delivered to all members of its destination host group with the same "best-efforts" reliability as regular unicast IP datagrams, i.e., the datagram is not guaranteed to arrive intact at all members of the destination group or in the same order relative to other datagrams.

To minimize data loss, SIP provides primary and back-up groups for its data feed services. The data messages are identical for two groups with the exception of the following UDP message header field values: Source IP Address, Destination IP Address, UDP Source Port Number, and UDP Destination Port Number.

The purpose of two host groups is to provide an extra layer of data redundancy within the extranet and end-user networks. By reading and utilizing both multicast groups into their production environment, IP multicast customers can help to protect themselves against network anomalies which could cause interruptions in data flow. To minimize data loss, UTP SIP strongly recommends that data feed customers process both the primary and back-up groups within their networks.

2.2.2 Current IP Multicast Addresses

Each IP multicast stream will be assigned a unique Class D host group address for transmission via the extranets. The Class D addresses have been registered by UTP SIP with The NIC Group.

Data Feed	Primary Groups			Back-Up Groups		
	Class D IP Address	$Port_{16}$	$Port_{10}$	Class D IP Address	$Port_{16}$	$Port_{10}$
UTDF (A-CD)	224.0.1.92	D8F6	55542	224.0.1.93	D8F7	55543
UTDF (CE-FD)	224.0.1.94	D8F8	55544	224.0.1.95	D8F9	55545
UTDF (FE-LK)	224.0.1.96	D8FA	55546	224.0.1.97	D8FB	55547
UTDF (LL-PB)	224.0.1.98	D8FC	55548	224.0.1.99	D8FD	55549
UTDF (PC-SP)	224.0.1.100	D8FE	55550	224.0.1.101	D8FF	55551
UTDF (SQ-ZZ)*	224.0.1.102	D900	55552	224.0.1.103	D901	55553

*Channel 6 will go to ZZZZ, accounting for all remaining securities.

2.3 Transmission Block

Messages sent to data feed recipients are blocked to provide more efficient line utilization. Each block contains a maximum of 1000 data characters. Messages may not span blocks. Each message in a block ends in a Unit Separator (US) except the last message, which ends in an End of Text (ETX). With the exception of certain messages (e.g. Control messages), each message sent over this data feed contains a fixed format header and a text section that has a format and length that varies for each message type.

DATA BLOCK FORMAT

UDP/IP Headers	S O H	Message 1 header and text	U S	Message 2 header and text	U S	Message n header and text	E T X
	1000 Byte Block (Max) from SOH to ETX						

Transmission Characteristics

2.4   UDP/IP Headers

Each IP datagram includes the IP and UDP headers as well as the block text data. The datagram fields can be read left to right starting at the top and working your way down through the datagram.

	0	16	32
IP	VERSION 4 bits	HEADER LENGTH 4 bits	TYPE OF SERVICE 8 bits	TOTAL LENGTH (in bytes) 16 bits

	0			16		32
IP	VERSION 4 bits	HEADER LENGTH 4 bits	TYPE OF SERVICE 8 bits	TOTAL LENGTH (in bytes) 16 bits		
	IDENTIFICATION 16 bits			FLAGS 3 bits	FRAGMENT OFFSET 13 bits	
	TIME TO LIVE 8 bits		PROTOCOL 8 bits	IP HEADER CHECKSUM 16 bits		
	SOURCE IP ADDRESS 32 bits					
	DESTINATION IP ADDRESS 32 bits					
UDP	UDP SOURCE PORT NUMBER 16 bits			UDP DESTINATION PORT NUMBER 16 bits		
	UDP LENGTH 16 bits			UDP CHECKSUM 16 bits		
	UDP Data (BLOCK DATA < 1000 BYTES)					

2.5   Field Descriptions

2.5.1   IP Header Fields

The following field descriptions pertain to the IP header:

- **VERSION** – 4 bit field used to define the current version of the IP protocol for transmission. The value will be set to 4.
- **HEADER LENGTH** – 4 bit field to define the number of 32 bit words in the IP header portion of the datagram. For multicast packets being generated by NASDAQ, the value will be set to 5.
- **TYPE OF SERVICE** – 8 bit field with the first 3 bits generally ignored by most network equipment. The next 5 bits are set to zero. Based on this description this field will always have the value of zero (0) for all multicast packets.
- **TOTAL LENGTH** – 16 bit field contains the length in bytes of the entire IP datagram (including UDP header). Since the maximum length of the block text is 1000 bytes, the maximum value for this field is 1028.
- **IDENTIFICATION FIELD** – 16 bit field contains a value that is incremented by one for each packet sent by the system. Not supported for UDP/IP packets.
- **FLAGS AND FRAGMENT OFFSET** – Combined 16 bit field is only used when an IP datagram is fragmented. Not supported for UDP/IP packets.
- **TIME TO LIVE (TTL)** – 8 bit field contains a value that determines the number of routers that a datagram can pass through. Each router that forwards the datagram will decrement this value by one; when it reaches zero, the router throws it away. It is initially set to 32 by the multicast source systems.
- **PROTOCOL** – 8 bit field contains a value representing the next level encapsulated protocol. Since multicast uses UDP, the value is set to 0x17, which is 23 decimals.
- **HEADER CHECKSUM** – 16 bit field contains a checksum made up of the IP header fields only. The calculation is based on the one's complement sum of the header broken into 16 bit words.

Transmission Characteristics

- **IP SOURCE ADDRESS** – 32 bit field contains the Registered Class C address of the multicast datagram source system. Address may vary depending on origin (system and location) of NASDAQ data. NASDAQ strongly warns customers against coding their systems for a particular IP source address. **NASDAQ will <u>not</u> notify data feed customers in advance when it changes the origin of data.**
- **IP DESTINATION ADDRESS** – 32 bit field contains the Registered Class D address for each IP Multicast Group. Please see table above for a list of current multicast groups.

2.5.2   UDP Header Fields

The following field descriptions pertain to the UDP header:

- **UDP SOURCE PORT NUMBER** – 16 bit field identifies the $Port_{16}$ address for each IP multicast group. Please see table above for a list of the current source port numbers.
- **UDP DESTINATION PORT NUMBER** – 16 bit field identifies the $Port_{10}$ address for each IP multicast group. Please see table above for a list of the current destination port numbers.
- **UDP LENGTH** – 16 bit field contains the length in bytes of the UDP headers plus the Data Block. The maximum value is 1008.
- **UDP CHECKSUM** – 16 bit field contains a checksum made up of the UDP header plus the Data Block. In addition, it includes the UDP pseudo header, which is made up of selected fields from the IP headers such as Source Address, IP Destination Address, Protocol, and UDP Length. The calculation is based on the one's complement sum of the datagram broken into 16 bit words.

2.5.3   UDP Data Fields

The following field descriptions pertain to the Data Block transmission:

- **SOH AND ETX** – The start of a block of data will be indicated by the Start of Header (SOH) control character. The end of the block will be signified by an End of Text (ETX) control character.
- **US** – The Unit Separator (US) character is utilized in message blocks with multiple messages to signify the end of the preceding message but not the end of the block.
- **BLOCK TEXT** – The block text may consist of one or more messages. A message may not span block boundaries. A message shall consist of a Message Header and a Message Text. Each message in a block shall be delimited by a US character except the last message, which will be delimited by an ETX character.
- **DATA FORMAT** – Alphanumeric fields will be left justified and space (hex 20) filled unless otherwise noted. Numeric fields will be right justified and zero (hex 30) filled unless otherwise noted.

2.6   Retransmission Capability

The UTP SIP front-end processor will log messages transmitted to recipients. The message formats are defined in subsequent sections of this document. This log will be accessible as a record of messages sent, and will provide a full retransmission capability. Message types not logged and therefore unavailable for retransmission include:

Message Category	Type	Value
C	T	Line Integrity

Transmission Characteristics

Retransmission requests may be made by sending an electronic mail message to retranq@nasdaqomx.com. Retransmission requests will only be honored during the period from the Start of Day (Category C – Type I) message through the End of Retransmission Request (Category C – Type K) message. The recipient can specify by message sequence number which message range the recipient would like retransmitted. Please call to SIP Operations at +1 203 926 3400 should you experience any issues with retransmission requests.

To ensure proper identification of each vendor, a line specific password must be supplied to the operator taking the request. To request a retransmission, the firm must provide the following information to SIP Operations Center:

- Data Feed Subscriber's Firm Name
- Assigned Retransmission Password
- Missing Message Sequence Number(s)
- Contact Name and Telephone Number

Retransmissions will be assigned a low priority in the outgoing message queue in order to prevent any delay or interference with current message delivery. As with original transmissions, retransmissions are broadcast to all direct connect subscribers on both networks. **It is the responsibility of the data feed recipient to ignore retransmitted messages not intended for their firm.** Retransmission messages can be identified by the following attributes:

- Message Blocking: Retransmission messages will never be mixed with current messages in the same message block, but current message blocks and retransmission blocks can be interspersed.
- Message Sequence Number: The message header will contain the same message sequence number as the original message. Please note that if the Message Sequence Number is reset, no intra-day messages sent prior to the reset control message can be retransmitted.
- Retransmission Requester: The message header will contain the unique two-character retransmission requester assigned to the intended recipient. Each firm is given a unique two-character retransmission requester that they should code for in its system. Refer to section 3.4 for more information on the retransmission requester.
- Date/Time: The message header will contain the same date and time stamp as the original message.

To obtain the retransmission requester and passwords for your firm, please contact NASDAQ Market Data Distribution 301.978.5307 or via electronic mail at dataproducts@nasdaqomx.com.

3.0   Message Header

As requested by the Policy/Technical Committees, the SIPs will make modifications to the Message Header Protocol to support new Participant Timestamp information in the inbound protocol specifications and the outbound data feed specifications (UQDF, UTDF & OMDF).

With the recent addition of the **second timestamp requirement** the following proposed changes are schedule to be implemented in **July2015**, until such time the existing message format will continue to be supported.

The following details the message header formats **POST** implementation. This will be a Hot-Cut release and all data recipients will be required to process the new header formats or risk loss of data.

MULTICAST OUTBOUND UTP TIMESTAMP CHANGE			
EXISTING OUTBOUND MESSAGE HEADER FORMAT		**PROPOSED OUTBOUND MESSAGE HEADER FORMAT (includes Participant Timestamp 2**	
Field Name	Length	**Field Name**	**Length**
Message Category	1	Message Category	1
Message Type	1	Message Type	1
Session Identifier	1	Session Identifier	1
Retransmission Requestor	2	Retransmission Requestor	2
Message Sequence Number	8	Message Sequence Number	8
Market Center Originator ID	1	Market Center Originator ID	1
Time Stamp (HHMMSSnnn)	9	**SIP Time Stamp**	**6**
(Not Applicable)	N/A	**Reserved**	**3**
Reserved (UQ/OM); Sub Market Center ID (UT)	1	Reserved (UQ/OM); Sub Market Center ID (UT)	1
(Not Applicable)	N/A	**Participant Timestamp 1**	**6**
(Not Applicable)	N/A	**Participant Timestamp 2**	**6**
(Not Applicable)	N/A	**Transaction ID**	**7**
Total Length	24	**Total Length**	**43**

Note: Alphanumeric fields are left justified and space filled unless otherwise specified. Numeric fields are right justified and zero filled unless otherwise specified.

Message Header

3.1   *Message Category*

The Message Category is a 1 byte, alphanumeric character. This field, along with the Message Type, identifies the message. The following table defines the Message Categories that UTDF can transmit:

Category	Usage
T	Trade-related messages
A	Administrative
C	Control
V	Volume

3.2   *Message Type*

The Message Type is a 1 byte, alphanumeric character. This field, along with the Message Category, identifies the message. The following defines the Message Types that UTDF can transmit:

Trade Messages:

Category	Type	Usage
T	A	Short Form Trade Report (no change)
T	W	Long Form Trade Report
T	Y	Trade Correction
T	Z	Trade Cancel/Error
T	H	Prior Day As-Of

Control Messages:

Category	Type	Usage
C	I	Start of Day
C	J	End of Day
C	O	Market Session Open
C	C	Market Session Close
C	X	End of Trade Reporting
C	K	End of Retransmission Requests
C	Z	End of Transmissions
C	T	Line Integrity
C	L	Sequence Number Reset
C	S	End of Consolidated Last Sale Eligibility

Administrative & Volume Messages:

Category	Type	Usage
A	A	General Administrative Message
A	B	Issue Symbol Directory Message
A	H	Cross SRO Trading Action
A	K	Market Center Trading Action
A	V	Reg SHO Short Sale Price Test Restricted Indicator

Message Header

A	Z	Closing Trade Summary Report
V	M	Total Consolidated & Market Center Volume
A	C	Market Wide Circuit Breaker Decline Level Message
A	D	Market Wide Circuit Breaker Status Message
A	P	Price Band Message

With the implementation of the message header change, **scheduled for July 27, 2015**, the Session Identifier will no longer differentiate between sessions. Instead this field will be revised to indicate what version of a header format vendors should be expecting.

3.3   *Message Header Format / Session Identifier*

This is a 1 byte, alphabetic field. The associated values are as follows:

Code	Value
A	Current Message Header Format - All Market Sessions or Session Independent (Session differentiation to be retired)
U	Current Message Header Format - U.S. Market Session (including pre-and post-market) (Session differentiation to be retired)
1	New Message Header Format (Session no longer differentiated)

3.4   *Retransmission Requester*

The Retransmission Requester is a 2 byte, Alphanumeric, space-filled identifier that signifies the intended recipient of the message. Retransmissions will be sent to all recipients, and it is the responsibility of each recipient to discard retransmitted messages not requested by him. The exception is a retransmission with an "R" Retransmission Requester, which denotes a retransmission addressed to all recipients.

Certain specific or global retransmission codes exist. For the UTDF, the codes are as follows:

Code	Value
O (space)	An original transmission to all recipients
R (space)	A retransmission to all recipients
T (space)	A test cycle transmission to all recipients.
Specific Vendor ID	To be assigned on vendor-by-vendor basis.

These retransmission codes are upper case and space filled. The UTP SIP will also assign a special two-character retransmission requester to each direct subscriber. Customers should code their system to process the two-character code assigned to their firm as well as the three global values outlined above.

3.5   Message Sequence Number (MSN)

The Message Sequence Number is designed to identify each message for tracking purposes. At the beginning of each operational cycle this number will begin with zero as the first message, and will be incremented by one each time a new message is transmitted with the following exceptions:

- Regular retransmission messages have the sequence number of the original message.
- Line Integrity Messages (Category C – Type T) contain the sequence number of the last message transmitted that was not a retransmitted message.
- Sequence Number Reset Messages (Category C – Type L) contain the number to which the Message Sequence Number counter is to be reset. This number will be either zero or some number greater than the highest number previously transmitted.
- The following control messages will be transmitted three times to ensure positive recognition: End of Day (Category C – Type J), End of Retransmission Requests (Category C – Type K), and End of Transmissions (Category C – Type Z). For each of these message types, the message sequence counter is incremented by one on the first message of the transmission sequence only.
- The following control messages will contain a message sequence number of zero: Start of Day (Category C – Type I) and Start of Test Cycle (Category C – Type M).   Type I messages will be transmitted three times to ensure positive recognition, but will have zero as the sequence number on all three messages.   Please note that the start of each test cycle will begin with zero.

Refer to Section 9 of this document for additional information on UTDF control messages.

3.6   Market Center Originator ID

The Market Center is a 1 byte, alphanumeric character that indicates the UTP participant or system that originated the message.

Code	Value	Code	Value
A	NYSE MKT	N	NYSE Euronext
B	NASDAQ OMX BX	P	NYSE Arca Exchange
C	National Stock Exchange	Q	NASDAQ OMX
D	FINRA ADF	V	Investors' Exchange LLC
E	Market Independent (Generated by SIP)	W	Chicago Board Options Exchange
I	International Securities Exchange	X	NASDAQ OMX PHLX
J	EDGA Exchange, Inc	Y	BATS Y-Exchange, Inc
K	EDGX Exchange, Inc	Z	BATS Exchange Inc
M	Chicago Stock Exchange		

3.7   SIP TimeStamp

The SIP Time Stamp field will be redefined to provide the SIP Timestamp in terms of the number of microseconds since midnight EST. The value will be revised and reduced in size. Revised timestamp will represent the number of microseconds since midnight EST. The value will be a 6-byte string of ASCII-displayable characters relative to ASCII space (" ") representative of a base95 number, examples are as follows:

Event	Wall Time ET	base95						Microseconds from midnight
SOD	03:58:00.000000	!	p	>	N	L	M	14280000000
Participant entry	04:00:00.000000	!	q	k	J	r	C	14400000000
Market Open	09:30:00.000000	$	G	t	2	a		34200000000
Random Time	10:15:05.123456	$	i	)	>	A	g	36905123456
Market Close	16:00:00.000000	'	J	0	l	L	M	57600000000
EOD	20:10:00.000000	)	D	@	&	?	>	72600000000
EOT	20:16:00.000000	)	H	g	z	R		72960000000

Please Note: For the Market Close Example the base95 code is:
('J0lLM = "single quote, Uppercase J, zero, lowercase L, uppercase L, Uppercase M)

3.8   Reserved

The new message header format will add a new 3 byte reserved field for future use. This field will be space filled.

3.9   Sub-Market Center Identifier

This one-byte alphanumeric field will be used for NASD reported trades to indicate the originating market center of a trade transaction. FINRA, as the regulator of the over-the-counter market, is responsible for reporting internalized trades of its member firms. FINRA may, however, align with other UTP participant exchanges to facility the collection, verification, and reporting of internalized trade transactions to the UTP SIP.

Since the FINRA acts as the regulator for all over-the-counter transactions, the UTDF Market Center ID field will carry the value of "D" for FINRA, when the transaction is collected as part of a joint trade reporting facility, the UTP SIP will indicate the originating UTP market center in the Sub-Market Center field.

Since it is possible for each UTP participant to align with FINRA in creating a trade reporting facility the Sub Market Center Value will be aligned with the UTP market center originator ID.

The following values are allowable:

Code	Value	Code	Value
A	NYSE MKT TRF	P	NYSE Arca TRF
B	NASDAQ OMX BX TRF	Q	NASDAQ OMX TRF
C	National Stock Exchange TRF	V	Investors' Exchange, LLC
I	International Securities Exchange TRF	W	Chicago Board Options Exchange TRF
J	EDGA Exchange, Inc TRF	X	NASDAQ OMX PHLX TRF
K	EDGX Exchange, Inc TRF	Y	BATS Y-Exchange Inc TRF
M	Chicago Stock Exchange TRF	Z	BATS Exchange Inc TRF
N	NYSE Euronext TRF	<space>	No sub-market; Trade originates from FINRA Alternative Display Facility.

Please refer to section 7 for processing guidelines

3.10   Participant TimeStamp1

A participant-provided timestamp representing the number of microseconds since midnight EST. The value will be a 6-byte string of ASCII-displayable characters relative to ASCII space (" ") representative of a base95 number. The SIP will simply pass through the value provided by the participant where applicable; for transactions originating from participants not using the new input content and for SIP-generated messages, this field will contain all space (six ASCII ' ' characters).

- **If from an Exchange**: denotes the Exchange Matching Engine Publication timestamp for a transaction. Exchanges use a clock sync methodology ensuring that timestamps are accurate within tolerances of 100 microseconds or less.
- **If from the FINRA Alternative Display Facility (ADF) and/or a FINRA Trade Reporting Facility (TRF):** denotes the time of execution that a FINRA member reports to the FINRA ADF or a FINRA TRF. FINRA shall convert times that its members report to it in seconds or milliseconds to microseconds and shall provide such times to the Processor in microseconds since midnight Eastern Time (ET).

3.11   Participant TimeStamp2

Will be used by the FINRA ADF and/or a FINRA TRF to provided timestamp representing the number of microseconds since midnight EST. The value will be a 6-byte string of ASCII-displayable characters relative to ASCII space (" ") representative of a base95 number. The SIP will simply pass through the value provided by the participant where applicable; for transactions originating from participants not using the new input content and for SIP-generated messages, this field will contain all space (six ASCII ' ' characters).

- **If from an Exchange:** Timestamp 2 will be blank.
- **If from the FINRA Alternative Display Facility (ADF) or a FINRA Trade Reporting Facility (TRF):**
    - **If the FINRA ADF or a FINRA TRF provides a proprietary feed of trades reported by the facility, then the FINRA facility will publish the time of the transmission as also published on the facility's proprietary trade feed.** The TRF or ADF shall convert times that it reports trades on its proprietary trade feed in seconds or milliseconds to microseconds and shall provide such times to the Processor in microseconds since midnight Eastern Time (ET).
    - **If the FINRA ADF or the FINRA TRF facility does not have a proprietary trade feed, Timestamp 2 will be blank.**

3.12   Transaction ID

Transaction ID is 7 bytes Alphanumeric, including special characters. The Transaction ID field is intended for UTP SIP internal use only and Data Recipients should ignore/disregard this field to the extent that it does not impact their normal data processing.

4.0 Data Formats

This section outlines the message formats used to disseminate information on the UTP Trade Data Feed. The field values for the message formats are described in Section 6 of this document.

4.1 NASDAQ Trade Related Messages

The following message formats are used to disseminate Trade Reports, Trade Corrections, and Trade Cancellations/Errors for NASDAQ listed securities. For processing guidelines, please refer to Section 7 of this specification.

4.1.1 Short-Form Trade Report

Category T – Type A

The UTP SIP will use the short form of trade report message format only if the UTP participant's transaction meets the following criteria:

- The Issue Symbol is 5 characters or less;
- Price can be stated in 6 bytes (see Appendix A for price format table);
- Price is stated in US Dollars;
- Sale Condition modifier is not equal to "R" (Seller); and
- Report volume is 999,999 shares or less.

Issue Symbol	Sale Condition	Price Denominator	Price	Report Volume	Consolidated Price Change Indicator
5	1	1	6	6	1

20 BYTES

4.1.2 Long-Form Trade Report

Category T – Type W

For trade reports that do <u>not</u> meet the criteria for a short record, the Long Form Trade Report format will be created.

Issue Symbol	Trade Through Exempt Flag	Sale Condition	Seller's Sale Days	Price Denominator
11	1	4	2	1

Price	Currency	Report Volume	Consolidated Price Change Indicator
10	3	9	1

42 BYTES

Data Formats

4.1.3   Trade Correction Message

Category T – Type Y

This format will be used to correct trade data from a transaction that was entered by a UTP participant earlier in the session. Original trade information is preceded by a label section and followed by a corrected trade section. A summary of information for the day's transactions in the issue will follow the corrected consolidated trade information.

Note: The Message Sequence Number (MSN) in the label represents the sequence number of the original trade.

Label:

Original MSN	Issue Symbol
8	11

Original Trade Information:

Trade Through Exempt Flag	Sale Condition	Seller's Sale Days	Price Denominator	Price	Currency	Report Volume
1	4	2	1	10	3	9

Corrected Trade Information:

Trade Through Exempt Flag	Sale Condition	Seller's Sale Days	Price Denominator	Price	Currency	Report Volume
1	4	2	1	10	3	9

Consolidated Trade Summary Information:

Consolidated High Price Denominator	Consolidated High Price	Consolidated Low Price Denominator	Consolidated Low Price	Consolidated Last Sale Price Denominator	Consolidated Last Sale Price
1	10	1	10	1	10

Consolidated Last Sale Price Market Center	Currency	Consolidated Volume	Consolidated Price Change Indicator
1	3	11	1

128 BYTES

4.1.4   Trade Cancel/Error Message

Category T – Type Z

This format will be used to cancel a trade transaction that was entered by a UTP participant earlier in the session. A detailed summary section containing information for the issue will follow the original trade section.

Note: The MSN in the label represents the message sequence number of the original trade.

Label:

Original MSN	Issue Symbol	Function
8	11	1

Original Trade Information:

Trade Through Exempt Flag	Sale Condition	Seller's Sale Days	Price Denominator	Price	Currency	Report Volume
1	4	2	1	10	3	9

Summary Information:

Consolidated High Price Denominator	Consolidated High Price	Consolidated Low Price Denominator	Consolidated Low Price	Consolidated Last Sale Price Denominator	Consolidated Last Sale Price
1	10	1	10	1	10

Consolidated Last Sale Price Market Center	Currency	Consolidated Volume	Consolidated Price Change Indicator
1	3	11	1

99 BYTES

4.1.5   Prior Day As-Of Trade Message

Category T – Type H

This format will be used to report or cancel a trade transaction that was entered by a UTP participant, which occurred earlier than the current day.

Issue Symbol	Prior Day MSN	Trade Through Exempt Flag	Sale Condition	Seller's Sale Days	Price Denominator
11	8	1	4	2	1

Price	Currency	Report Volume	Prior Day Trade Date/Time*	As-Of Action
10	3	9	7	1

57 BYTES

*Prior Day Trade Date/Time will continue to follow the existing translation as defined in section 6 Field Descriptions

Data Formats

4.2   Administrative & Volume Messages

The following message formats are used to disseminate administrative data for NASDAQ listed securities. For processing guidelines, please refer to Section 8.0 of this document.

4.2.1   General Administrative Message
Category A – Type A

This free format, variable length text message may be used to notify data feed subscribers of special situations. The administrative message can be used anytime throughout the day.

Text
1 – 300

Up to 300 BYTES

4.2.2   CROSS SRO Trading Action Message
Category A - Type H

This fixed format message will be used to inform subscribers of trading actions – such as halts, pauses, quotation resumptions and trading resumptions – impacting the trading of a NASDAQ-listed issue across all UTP participants.

Issue Symbol	Action	Action Date/Time	Reason Code
11	1	7	6

25 BYTES

4.2.3   Closing Trade Summary Report
Category A – Type Z

The Closing Trade Summary Report will be disseminated three times daily at the following times:

- The initial report will be disseminated at approximately 4:30 p.m., ET, and will reflect the closing price for UTP participants who choose to have their official closing price calculated in time for this report as well as the preliminary closing prices for the consolidated market and other UTP participants in NASDAQ-listed issues.
- This second report will be disseminated at 5:20 p.m., ET, and will reflect the closing price for UTP participants who choose to have their official closing price calculated in time for this report as well as the preliminary closing prices for the consolidated market and other UTP participants in NASDAQ-listed issues.
- The final instance of the Closing Trade Summary report will be generated upon receipt of the last End of Trading Reporting control message from UTP participants (approximately 20:10 Eastern Time). This report will contain the final closing price and volume data for the consolidated market as well as all UTP participants in a NASDAQ-listed issue.

If the market center provides an official closing price value, the UTP SIP will populate the "Market Center Closing Price Indicator" value in the message attachment with the

Data Formats

value of "M". If the market center does not provide an official closing price value, the message will reflect the final last sale eligible trade received by the UTP SIP from the market center for the given issue.

For all instances of the Closing Trade Summary Report, the message shall consist of a consolidated trade summary followed by any associated market center attachment(s). Please note that firms should process all three instances of the Closing Trade Summary Report for the most up-to-date and accurate information.

Note: Under certain market event circumstances, the UTP SIP reserves the right to amend the time of dissemination for any one or all of the closing trade summary reports without prior notification.

Label – Consolidated Trade Summary:

Issue Symbol	Daily Consolidated High Price Denominator	Daily Consolidated High Price	Daily Consolidated Low Price Denominator	Daily Consolidated Low Price	Consolidated Closing Price Denominator
11	1	10	1	10	1

Consolidated Closing Price	Consolidated Closing Price Market Center ID	Currency	Consolidated Volume	Trading Action Indicator	Number of Market Center Attachments
10	1	3	11	1	2

62 BYTES

Attachment(s) – Market Center Closing Price & Volume Summary:

Market Center ID	Market Center Closing Price Denominator	Market Center Closing Price	Market Center Volume	Market Center Close Indicator
1	1	10	11	1

24 BYTES

4.2.4   Total Consolidated & Market Center Volume

Category V – Type M

The Total Consolidated & Market Center Volume message will be used to relay intra-day values for the current total cumulative consolidated share volume and each active market center current cumulative volume activity as reported by all UTP participants in all NASDAQ issues. The consolidated volume report reflects trading activity up to the time that the message was generated. Only market centers with positive volume will be disseminated for a given time interval.

The Total Consolidated Volume Report message format consists of two parts:

- **Message Label:** This section provides the current total cumulative consolidated share volume. It also denotes how many market center attachments are being relayed as part of this message.

- **Message Attachment(s):** This section provides the market center identifier and the current market center volume for the given time interval.

Label – Consolidated Volume:

Total Consolidated Volume	Number of Market Center Attachments
12	2

Attachment(s) – Market Center Volume:

Market Center Identifier	Current Market Center Volume
1	12

4.2.5   *Market Center Trading Action*

Category A – Type K

This fixed format message will inform UTP data feed subscribers of when a UTP participant invokes or releases a market center-specific trading halt / trading pause for a NASDAQ-listed security.   In contrast to the Cross SRO Trading Action (Category A – Type H) data format, the Market Center Trading Action (Category A – Type K) message impacts trading activity only for the UTP participant identified in the Market Center (MC) ID field.

Other UTP participants may continue to quote and trade the issue as normal.   Because the issue remains active on other markets, it is incumbent on the UTP participant sending the Market Center Trading Action message to request the UTP SIP to do a quote wipeout or to mark any quotation data that it submits to the UTP SIP with a non-NBBO eligible quotation condition value during a market center-specific trading halt / trading pause.

Issue Symbol	Action	Action Date/Time*	Market Center (MC) ID
11	1	7	1

20 BYTES

*Action Date/Time will continue to follow the existing Date/Time translation as defined in section 6 Field Descriptions.

Data Formats

4.2.6   *Issue Symbol Directory Message*

Category A – Type B

The Issue Symbol Directory message provides basic company and trading information for NASDAQ-listed securities.

At the request of the UTP Operating Committee, The UTP SIP will be adding a new Issue Sub-Type field to the directory message format in the 4th Quarter 2015.   The new two-byte field will be added to the end of the existing Issue Symbol Directory message format.

Each Issue Symbol Directory message shall consist of the following data fields:

Issue Symbol	Old Issue Symbol	Issue Name	Issue Type	Market Tier
11	11	30	1	1

Authenticity	Short Sale Threshold Indicator	Round Lot Size	Financial Status Indicator	Issue Sub-Type (To be added in 4th Quarter 2015)
1	1	5	1	2

62 Bytes – Current; 64 Bytes – Future

4.2.7   *Regulation SHO Short Sale Price Test Restricted Indicator*

Category A – Type V

In November 2010, the Securities and Exchange Commission (SEC) implemented 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, the UTP SIP will introduce a Reg SHO Short Sale Price Test Restricted Indicator.   As part of the pre-opening spin process, NASDAQ, as the primary listing market, will generate Reg SHO Short Sale Price Test Restricted Indicator messages indicating the Rule 201 status for all NASDAQ-listed securities.   NASDAQ will also send the Reg SHO Short Sale Price Test Restricted Indicator message in the event of an intraday status change.

Each Reg SHO Short Sale Price Test Restricted Indicator message shall consist of the following data fields:

Issue Symbol	Reg SHO Action
11	1

12 BYTES

Data Formats

4.2.8 *Limit Up-Limit Down Price Band Message*

Category A - Type P

The Securities and Exchange Commission (SEC) adopted a Plan, to be implemented in two phases, to provide for a market-wide Limit Up–Limit Down (LULD) mechanism intended to address extraordinary market volatility in NMS Stocks. The new LULD procedures are designed to prevent trades in individual NMS Stocks from occurring outside of specified Upper and Lower Limit Price Bands.

This fixed format message will be used to inform subscribers of the price band in affect for the issue.

Issue Symbol	LULD Price Band Indicator	LULD Price Band Effective Time*	Price Denominator	Limit Down Price	Price Denominator	Limit Up Price
11	1	9	1	10	1	10

43 BYTES

* LULD Price Band Effective Time field will be modified to contain a "wall time" time value precise to the microsecond level for the new message format (i.e. Message Header Format/Session Identifier = '1') in the format "HMSnnnnnn"

4.2.9 *Market Wide Circuit Breaker Decline Level Message*

Category A - Type C

A Market Wide Circuit Breaker (MWCB) Level message will inform participants and the UTP data recipients what the daily MWCB breach points are set to for the current trading day.

The MWCB Levels will generally remain in effect for the remainder of the current trading day and will be reset each trading day based on the prior day's closing value of the S&P 500 index. However, there can be situations where the breach levels were set due to erroneous activity. In this case the breach levels may reset and disseminate the MWCB breach levels again. Participants and UTP data recipients should process and use the most recently disseminated levels for that trading day.

MWCB Denominator	MWCB Level 1	Reserved	MWCB Level 2	Reserved	MWCB Level 3	Reserved
1	12	3	12	3	12	3

46 Bytes

Data Formats

4.2.10 Market Wide Circuit Breaker Status message

Category A - Type D

A Market Wide Circuit Breaker (MWCB) Status message will inform participants and the UTP data recipients when a MWCB has breached one of the established levels.

The MWCB Status message will be generated **once** for each level if the S&P 500 declines past the established breaker decline level for the trading day.

MWCB Status Level Indicator	Reserved
1	3

4 Bytes

4.3 Control Messages

Control messages consist of a message header only. For processing information, please refer to Section 9 of this document.

Field Occurrences

5.0   Field Occurrences Within Messages

This table provides the Message Category and Message Type for the UTDF format for each message field. Please note that the following abbreviations will be used to identify message attachments.

- AT = Attachment to Closing Trade Summary Report or Total Consolidate & Market Center Volume messages.

Field Name	Message Category	Message Type
A		
Action	A	H
	A	K
Action Date/Time	A	H
	A	K
As-Of Action	T	H
Authenticity	A	B
C		
Consolidated Closing Price	A	Z
Consolidated Closing Price Denominator	A	Z
Consolidated Closing Price Market Center ID	A	Z
Consolidated High Price	T	Y, Z
Consolidated High Price Denominator	T	Y, Z
Consolidated Last Sale Market Center	T	Y, Z
Consolidated Last Sale Price	T	Y, Z
Consolidated Last Sale Price Denominator	T	Y, Z
Consolidated Low Price	T	Y, Z
Consolidated Low Price Denominator	T	Y, Z
Consolidated Price Change Indicator	T	A, W, Y, Z
Consolidated Volume	T	Y, Z
	A	Z
Current Market Center Volume	V	M (AT)
Currency	T	W, Y, Z
	T	H
	A	Z
D		
Daily Consolidated High Price	A	Z
Daily Consolidated High Price Denominator	A	Z
Daily Consolidated Low Price	A	Z
Daily Consolidated Low Price Denominator	A	Z
F		
Financial Status Indicator	A	B
Function	T	Z
I		
Issue Name	A	B

UTP Trade Data Feed (UTDF) Specifications

Field Occurrences

Field Name	Message Category	Message Type
Issue Sub-Type	A	B
Issue Symbol (Short Form)	T	A
Issue Symbol (Long Form)	T	W, Y, Z
	T	H
	A	Z, H, K, V, P
Issue Type	A	B
L		
Limit Down Price	A	P
Limit Up Price	A	P
LULD Price Band Effective Time	A	P
LULD Price Band Indicator	A	P
M		
Market Tier (formerly known as Market Category)	A	B
Market Center Closing Price	A	Z (AT)
Market Center Closing Price Denominator	A	Z (AT)
Market Center ID	A	Z (AT)
	A	K
	V	M (AT)
Market Center Close Indicator	A	Z (AT)
Market Center Volume	A	Z (AT)
Market Wide Circuit Breaker (MWCB) Level 1, 2 or 3	A	C
MWCB Status Indicator	A	D
MWCB Denominator	A	C
N		
Number of Market Center Attachments	A	Z
	V	M
O		
Old Issue Symbol	A	B
Original Message Sequence Number (MSN)	T	Y, Z
P		
Price (Short Form)	T	A
Price (Long Form)	T	W, Y, Z
	T	H
Price Denominator	T	A, W, Y, Z
	T	H
	A	P
Prior Day Message Sequence Number (MSN)	T	H
Prior Day Trade Date/Time	T	H
R		
Reason Code	A	H

Field Occurrences

Field Name	Message Category	Message Type
Reg SHO Action	A	V
Report Volume (Short Form)	T	A
Report Volume (Long Form)	T	W, Y, Z
	T	H
Reserved	A	C, D
Round Lot Size	A	B
S		
Sale Condition	T	A, W, Y, Z
	T	H
Seller's Sale Days	T	W, Y, Z
	T	H
Short Sale Threshold Indicator	A	B
T		
Text	A	A
Total Consolidated Volume	V	M
Trade Through Exempt Flag	T	W, Y, Z
	T	H
Trading Action Indicator	A	Z

6.0   Field Descriptions

Unless otherwise denoted, all Alphabetic and Alphanumeric fields will be left justified and space filled; all Numeric fields will be right justified and zero filled.

A

Action

   Category A – Type H; Category A – Type K

1 byte, Alphanumeric. The Action is used to indicate the current trading status for the stated issue.

As part of the new NASDAQ Market Center IPO opening process, the UTP SIP will redefine the "T" action code to denote a trading resumption for the UTP market centers. For more information on how Trading Halt messages will be disseminated under the proposed NASDAQ rule filing, please refer to section 8.2 of this document.

The associated values are as follows:

Code	Value
H	Trading Halt
Q	Quotation Resumption
T	Trading Resumption – UTP's
P	Volatility Trading Pause

Action Date/Time

   Category A – Type H; Category A – Type K

7 bytes, Alphanumeric (including special characters). The Action Date/Time field will reflect the time of the most recent attribute change (action or reason code). The Action Date/Time is stated in the following format:

Date Year	Date Month	Date Day	Time Hour	Time Minute	Time Second
2	1	1	1	1	1

Date Year: The year the transaction occurred. This two-byte field will be stated in numeric format, with possible values 00 to 99.

Date Month: The month the transaction occurred.   This one byte field is stated in ASCII text format. The numeric month value will be converted into a single ASCII character based on the Date/Time translation table.

Date Day: The day of the month the transaction occurred. This one byte field is stated in ASCII text format. The day value will be converted into a single ASCII character based on the Date/Time translation table.

Time Hour: The hour of the day the transaction occurred in military time. This one byte field is stated in ASCII text format. The hour value will be converted into a single ASCII character based on the Date/Time translation table.

Field Descriptions

Time Minute: The minute of the hour the transaction occurred. This one byte field is stated in ASCII text format. The minute value will be converted into a single ASCII character based on the Date/Time translation table.

Note: The Date/Time translation table is located in Appendix F of this document.

As-Of Action
Category T – Type H

1 byte, Alphanumeric. The field denotes if the transaction being reported is an As-Of trade or an As-Of cancel from a prior business day. The associated values are as follows:

Code	Value
A	As-Of Trade addition
C	As-Of Trade cancel

Authenticity
Category A – Type B

1 byte, Alphanumeric. The field 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. The associated values are as follows:

Code	Value
P	Live/Production
T	Test
D	Demo
X	Deleted

C

Consolidated Closing Price
Category A – Type Z

10 bytes, Numeric. This field reflects the price of the final last sale-eligible trade transaction for the trading day reported by a UTP participant during operational hours (4:00 AM – 8:00 PM ET). The price is represented in a combination of whole dollar and decimal digits. The Consolidated Closing Price Denominator field should be used to determine how to process this field.

Consolidated Closing Price Denominator
Category A – Type Z

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition of the Consolidated Closing Price field. Refer to Appendix A for associated values.

Field Descriptions

Closing Price Market Center ID
   Category A – Type Z

1 byte, Alphanumeric. This field indicates the market center identifier for the UTP participant that reported the Consolidated Closing Price for a given security.   (Note: If the first and only trade of the day for an issue is canceled or if there were no last sale-eligible trades during the day, this field will be space filled.) The associated values are as follows:

Code	Value
A	NYSE MKT
B	NASDAQ OMX BX
C	National Stock Exchange
D	FINRA ADF
I	International Securities Exchange
J	EDGA Exchange, Inc
K	EDGX Exchange, Inc
M	Chicago Stock Exchange
N	NYSE Euronext
P	NYSE Arca
Q	NASDAQ OMX
V	Investors' Exchange LLC
W	Chicago Board Options Exchange
X	NASDAQ OMX PHLX
Y	BATS Y-Exchange, Inc
Z	BATS Exchange, Inc

Consolidated High Price
   Category T – Type Y; Category T – Type Z

10 bytes, Numeric. This field reflects the price of the highest, last-sale eligible trade price entered by a UTP participant for the security up to the time when the Trade Correction or Trade Cancel/Error message was disseminated. The price is represented in a combination of whole dollar and decimal digits. The Consolidated High Price Denominator field should be used to determine how to process this field.

Consolidated High Price Denominator:
   Category T – Type Y; Category T – Type Z

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition of the Consolidated High Price field in the summary portion of the Trade Correction or Trade Cancel/Error message. **Refer to Appendix A for associated values.**

Field Descriptions

Consolidated Last Sale Market Center
    Category T – Type Y; Category T – Type Z

1 byte, Alphanumeric. This field denotes the market center identifier for the UTP participant responsible for the Consolidated Last Sale Price for the issue. (Note: If the first and only trade of the day for an issue is canceled or if there were no last sale-eligible trades during the day, this field will be space filled.) **Refer to the Consolidated Closing Market Center ID for associated values.**

Consolidated Last Sale Price
    Category T – Type Y; Category T – Type Z

10 bytes, Numeric. This field reflects the latest last-sale eligible trade report submitted by a UTP participant up to the time of the trade cancellation or correction. The price is represented in a combination of whole dollar and decimal digits. The Consolidated Last Sale Price Denominator field should be used to determine how to process this field.

Consolidated Last Sale Price Denominator
    Category T – Type Y; Category T – Type Z

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition of the Consolidated Last Sale Price in the message. **Refer to Appendix A for associated values.**

Consolidated Low Price
    Category T – Type Y; Category T – Type Z

10 bytes, Numeric. This field reflects the lowest, last-sale eligible trade price reported by a UTP participant up to the time of the trade cancellation or correction was disseminated. The price is represented in a combination of whole dollar and decimal digits. The Consolidated Low Price Denominator field should be used to determine how to process this field.

Consolidated Low Price Denominator
    Category T – Type Y; Category T – Type Z

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition of the Consolidated Low Price in the market summary portion of the Trade Correction or Trade Cancel/Error message. Refer to Appendix A for associated values.

Field Descriptions

Consolidated Price Change Indicator
Category T – Types A, W, Y, Z

1 byte, Numeric. This field indicates which consolidated prices were impacted by a given transaction. The associated values are as follows:

Code	Value
0	No prices changed
1	Consolidated Last price changed
2	Consolidated Low price changed
3	Consolidated Last and low prices changed
4	Consolidated High price changed
5	Consolidated Last and Consolidated High prices changed
6	Consolidated High and Consolidated Low prices changed
7	All Consolidated prices changed

Consolidated Volume
Category T – Type Y; Category T – Type Z; Category A – Type Z

11 bytes, Numeric. This field reflects the total consolidated share volume reported by all UTP participants in the issue. In the Trade Correction or Trade Cancel/Error message, the consolidated volume reflects trading activity up to the time that the message was generated. In the Closing Trade Summary Report, the consolidated volume reflects trading activity reported by UTP participants during the US market session (including pre- and post-market sessions). Please note that this field may be zero filled if there are no valid trade reports in the issue. Please also note, that it is possible to have volume without a last sale or closing price, if all trades are reported to occur outside normal market hours. (9:30 AM – 4:00 PM).

Current Market Center Volume
Category V – Type M (Attachment)

12 bytes Numeric. This field indicates the total number of shares traded by the given market center in non-test issues, up to the time that the volume message was generated.

Field Descriptions

Currency
    Category T – Types W, Y, Z; Category A – Type Z

3 bytes, Alphanumeric. This field defines the currency of an issue in ISO Currency codes. The current value is as follows:

Code	Value
USD	US Dollars
<Space>	Space filled

D

Daily Consolidated High Price
    Category A – Type Z

10 bytes, Numeric. This field reflects the price of the highest last-sale eligible trade price entered for the security by any UTP participant during the operational hours (4:00 AM – 8:00 PM ET). The price is represented in a combination of whole dollar and decimal digits. The Daily Consolidated High Price Denominator field should be used to determine how to process this field.

Daily Consolidated High Price Denominator
    Category A – Type Z

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition of the Daily Consolidated High Price field in the Closing Trade Summary Report message. **Refer to Appendix A for associated values.**

Daily Consolidated Low Price
    Category A – Type Z

10 bytes, Numeric. This field reflects the price of the lowest last-sale eligible trade price entered for the security by any UTP participant during the operational hours (4:00 AM – 8:00 PM ET). The price is represented in a combination of whole dollar and decimal digits. The Daily Consolidated Low Price Denominator field should be used to determine how to process this field.

Daily Consolidated Low Price Denominator
    Category A – Type Z

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition of the Daily Consolidated Low Price field in the Closing Trade Summary Report message. **Refer to Appendix A for associated values.**

Field Descriptions
F

<u>**Financial Status Indicator**</u>
Category A – Type B

1 byte, Alphanumeric.   This field denotes the current financial status of the issuer. The allowable values are as follows:

Code	Value
C	Creations and/or Redemptions Suspended for Exchange Traded Product
D	Deficient: Issuer Failed to Meet NASDAQ Continued Listing Requirements
E	Delinquent: Issuer Missed Regulatory Filing Deadline
Q	Bankrupt: Issuer Has Filed for Bankruptcy
N	Normal (Default): Issuer Is NOT Deficient, Delinquent, or Bankrupt.
G	Deficient and Bankrupt
H	Deficient and Delinquent
J	Delinquent and Bankrupt
K	Deficient, Delinquent, and Bankrupt

Notes: External Market Data Distributors must provide the Financial Status Indicator field for NASDAQ-listed securities to their customer displays. Once the Financial Status Indicator field is in place, NASDAQ plans to discontinue the use of fifth character symbol suffixes for delinquent or bankrupt issues.

<u>**Function**</u>
Category T - Type Z

1 byte, Numeric. This field denotes if the original trade report is being cancelled or was reported in error. The associated values are:

Code	Value
C	Cancel
E	Error

I

<u>**Issue Name**</u>
Category A – Type B

30 bytes, Alphanumeric. This field denotes the firm name for the issue in the NASDAQ system. Please note that NASDAQ may need to abbreviate name due to the thirty-byte limitation.

Field Descriptions

Issue Sub-Type

Category A – Type B

2 byte, alphanumeric.   This field will be added to the Issue Symbol Directory message format in the 4th Quarter 2015.   Once added, this field will identify the security sub-type for the issue as assigned by Nasdaq.

The allowable values are:

Code	Value		Code	Value
A	Trust Preferred		M	Equity Linked Note
AI	Alpha Index ETNs		MF	Managed Fund Shares
B	Index Linked Note		ML	ETN-Multi-Factor Index-Linked Securities
C	Common Shares		MT	Managed Trust Securities
CB	Commodity Based Trust Shares		N	NY Registry Shares
CF	Commodity Futures Trust Shares		O	Income Depositary Shares
CL	Commodity-Linked Securities		P	Third Party Trust Certificate
CM	Commodity Index Trust Shares		PP	Poison Pill
CO	Collateralized Mortgage Obligation		PU	Partnership Units
CT	Currency Trust Shares		Q	Closed End Funds
CU	Commodity-Currency-Linked Securities		R	Reg-S
CW	Currency Warrants		RC	Commodity-Redeemable Commodity-Linked Securities
D	Global Depositary Shares		RF	ETN-Redeemable Futures-Linked Securities
E	ETF-Unit Investment Trust		RT	REIT
EG	Equity Gold Shares		RU	Commodity-Redeemable Currency-Linked Securities
EI	ETN-Equity Index-Linked Securities		S	SEED
EM	Exchange Traded Managed Fund (ETMF)		SC	Spot Rate Closing
EN	Exchange Traded Note		SI	Spot Rate Intraday
EU	Equity Units		T	Tracking Stock
F	HOLDRS		TC	Trust Certificates
FI	ETN-Fixed Income-Linked Securities		TU	Trust Units
FL	ETN-Futures-Linked Securities		U	Portal
G	Exchange Traded Debt		V	Contingent Value Right
I	ETF-Management Investment Company		W	Trust Issued Receipts
IR	Interest Rate		WC	World Currency Option
IW	Index Warrant		X	Trust
IX	Index-Linked Exchangeable Notes		Y	Other
J	Corporate Backed Trust Security		Z	N/A
L	Contingent Litigation Right/Warrant			
LL	Limited Liability Company			

(Note: The list above reflects the allowable values in the Nasdaq security master database.   Only a subset of these values are currently in use.)

UTP Trade Data Feed (UTDF) Specifications

Field Descriptions

Issue Symbol (Short-Form)
Category T – Type A; Category A – Type P

5 bytes, Alphanumeric. This field indicates the security identifier assigned by NASDAQ for a given issue. To download the NASDAQ symbol directory, please visit the NASDAQ Trader web site at http://www.nasdaqtrader.com/Trader.aspx?id=symbollookup. To access the list of security additions, deletions, or changes for NASDAQ-listed securities, please use the NASDAQ Equities Daily List available at http://www.nasdaqtrader.com/Trader.aspx?id=DailyListPD.

Issue Symbol (Long-Form)
Category T – Types W, Y, Z; Category A – Types B, H, K, V, Z

11 bytes, Alphanumeric. This field indicates the security identifier assigned by NASDAQ for a given issue.

Issue Type
Category A – Type B

1 byte, Alphanumeric. This field identifies the security class for the issue as assigned by NASDAQ. The associated values are as follows:

Code	Value	Code	Value
A	American Depository Receipt	P	Preferred Stock
B	Bond	Q	Other Securities
C	Common Stock	R	Rights
F	Depository Receipt	S	Shares of Beneficial Interest
I	144A	T	Convertible Debenture
L	Limited Partnership	U	Unit
N	Note	V	Units of Beneficial Interest
O	Ordinary Shares	W	Warrant

 (Note: The list above reflects the allowable values in the Nasdaq security master database.   Only a subset of these values are currently in use.)

L

LULD Price Band Indicator
Category A – Type P

1 byte, Alphanumeric. The LULD Price Band Indicator denotes the event that initiated the price band message being disseminated.

Code	Value
A	Opening Update
B	Intra-Day Update
C	Restated Value
D	Suspended during trading halt or trading pause
E	Re-Opening Update
F	Outside price band rule hours
<space>	None provided

Field Descriptions

LULD Price Band Effective Time (Existing Message Header)
  Category A – Type P

9 bytes, numeric field. The LULD Price Band Effective Time field denotes the military time (to the nearest millisecond) that the Price Band originally became effective. The time format is HHMMSSCCC.

LULD Price Band Effective Time
  Category A – Type P

9 bytes, alphanumeric field (including special characters). LULD Price Band Effective Time field will be modified to contain a "wall time" time value precise to the microsecond level for the new message format (i.e. Message Header/Session Identifier = '1') in the format "HMSnnnnnn", where:
- o H: an ASCII-displayable character representing the hours portion of the timestamp; values are defined in Appendix F
- o M: an ASCII-displayable character representing the minutes portion of the timestamp; values are defined in Appendix F
- o S: an ASCII-displayable character representing the seconds portion of the timestamp; values are defined in Appendix F
- o nnnnnn: microsecond portion of timestamp (numeric)

Limit Down Price
        Category A – Type P

10 bytes, numeric. The Limit Down Price represents the lower boundary of the price range for executable quotes. A Limit State occurs when the National Best Ask Price is equal to the Limit Down Price.

Limit Up Price
        Category A – Type P

10 bytes, numeric. The Limit Up Price represents the upper boundary of the price range for executable quotes. A Limit State occurs when the National Best Bid Price is equal to the Limit Up Price.

M

Market Tier (formerly known as Market Category)
  Category A – Type B

1 byte, Alphanumeric. This field denotes the listing market classification for the given security. The associated values are as follows:

Code	Value
Q	NASDAQ Global Select Market
G	NASDAQ Global Market
S	NASDAQ Capital Market

Field Descriptions

Market Center Closing Price

Category A – Type Z (Attachment)

10 bytes, Numeric. Located in the attachment to the Closing Trade Summary Report message. This field reflects the final closing price entered by the associated UTP participant. The price is represented in a combination of whole dollar and decimal digits.   The Closing Price Denominator field should be used to determine how to process this field.

Market Center Closing Price Denominator

Category A – Type Z (Attachment)

1 byte, Alphanumeric. Located in the attachment to the Closing Trade Summary Report message. This field denotes the whole dollar and decimal digit composition of the Market Center Closing Price field. Refer to Appendix A for associated values.

Market Center ID

Category A – Type K; Category A – Type Z (Attachment); Category V – Type M (Attachment)

1 byte, Alphanumeric. This field indicates the UTP participant for whom the information is provided in the attachment or the UTP participant requesting a market center trading action. The associated values are as follows:

Code	Value
A	NYSE MKT
B	NASDAQ OMX BX
C	National Stock Exchange
D	FINRA ADF
I	International Securities Exchange
J	EDGA Exchange, Inc
K	EDGX Exchange, Inc
M	Chicago Stock Exchange
N	NYSE Euronext
P	NYSE Arca Exchange
Q	NASDAQ OMX
V	Investors' Exchange LLC
W	Chicago Board Options Exchange
X	NASDAQ OMX PHLX
Y	BATS Y-Exchange, Inc
Z	BATS Exchange Inc

Field Descriptions

Market Wide Circuit Breaker Status Level Indicator
     Category A – Type D

1 byte, Alphanumeric, including special characters. This field indicates the MWCB level that has been breached. The associated values are as follows:

Code	Value
1	Market Wide Circuit Breaker Decline Level 1 Breached (7% decline)
2	Market Wide Circuit Breaker Decline Level 2 Breached (13% decline)
3	Market Wide Circuit Breaker Decline Level 3 Breached (20% decline)

Market Wide Circuit Breaker Level 1, Level 2 and Level 3 Values
     Category A – Type C

12 bytes, Numeric. The MWCB level 1, level 2 and level 3 value identifies the daily established decline levels breached and is represented in a combination of whole dollar and decimal digits. The MWCB Denominator field should be used to determine how to process this field.

Market Wide Circuit Breaker Denominator
     Category A – Type C

1 byte, alphanumeric. This field denotes the whole dollar and decimal digit composition of a Price field. MWCB Denominator field will follow a slightly different format. **Please refer to Appendix A1 for associated values.**

Market Center Close Indicator
   Category A – Type Z (Attachment)

1 byte, Alphanumeric. Located in the market center attachment to the Closing Trade Summary Report message, this field indicates if the closing price is reflective of an "M" sale condition transaction. As noted in section 7.5.1 of this document, transactions with an "M" sale condition modifier are <u>not</u> included in the consolidated last sale price calculation. If the market center is responsible for the consolidated closing price in the label, it is possible that the message attachment contains a separate and different value.

The associated values are:

Code	Value
M	Market Center Closing Price is based on transaction with "M" sale condition modifier.
Blank	Market Center Closing Price is not based on a transaction with an "M" sale condition modifier.

Field Descriptions

Market Center Volume
    Category A – Type Z (Attachment)

11 bytes, Numeric. Located in the market center attachment to the Closing Trade Summary Report message, this field indicates total share volume reported by the UTP participant during the current business day.

N

Number of Market Center Attachments
    Category A – Type Z; Category V – Type M (label)

2 bytes, Numeric. This field indicates the number of market center attachments to be included in the closing report for a given issue symbol. Allowable values are 00 to 20.

O

Old Issue Symbol – New
    Category A – Type B

11 bytes, Alphanumeric. This field denotes the NASDAQ issue symbol previously assigned to the associated issue. This field will be populated only on the day that a security symbol changes. Otherwise, this field will be space filled.

Original Message Sequence Number
    Category T - Type Y; Category T - Type Z

8 bytes, Numeric. The Original MSN, located in the label section of Trade Correction or Trade Cancel/Error message, denotes the original trade sequence number of the trade report to be modified. If the Original Message Sequence Number is unavailable for any reason (e.g., due a message number reset), this field will be zero filled.

P

Price (Short Form)
    Category T – Type A

6 bytes, Numeric. This field reflects the Price for the trade transaction being reported by the UTP participant. The price is represented in a combination of whole dollar and decimal digits. The Price Denominator field should be used to determine how to process this field.

Price (Long Form)
    Category T – Types W, Y, Z

10 bytes, Numeric. This field reflects the Price for the trade transaction being reported by the UTP participant. The price is represented in a combination of whole dollar and decimal digits. The Price Denominator field should be used to determine how to process this field.

Field Descriptions

Price Denominator
Category T - Type A; Category T - Types W, Y, Z; Category A – Types C, D

1 byte, Alphanumeric. This field denotes the whole dollar and decimal digit composition for the Price field in the message. **Refer to Appendix A for associated values.**

Prior Day Message Sequence Number (MSN)
Category T – Type H

8 bytes, Numeric. The Prior Day MSN, denotes the original trade sequence number of the trade report to be canceled As-Of. This field will be zero filled for As-Of trade reports that are being added for a prior day.

Prior Day Trade Date/Time
Category T – Type H

7 bytes, Alphanumeric. The Prior Day Trade Date/Time field will reflect the date and time for which the As-Of transaction was reported for cancels or should have been reported for new trades. The Prior Day Trade Date/Time is stated in the following format:

Date Year	Date Month	Date Day	Time Hour	Time Minute	Time Second
2	1	1	1	1	1

Date Year: The year the transaction occurred. This two-byte field will be stated in numeric format, with possible values 00 to 99.

Date Month: The month the transaction occurred.   This one byte field is stated in ASCII text format. The numeric month value will be converted into a single ASCII character based on the Date/Time translation table.

Date Day: The day of the month the transaction occurred. This one byte field is stated in ASCII text format. The day value will be converted into a single ASCII character based on the Date/Time translation table.

Time Hour: The hour of the day the transaction occurred in military time. This one byte field is stated in ASCII text format. The hour value will be converted into a single ASCII character based on the Date/Time translation table.

Time Minute: The minute of the hour the transaction occurred. This one byte field is stated in ASCII text format. The minute value will be converted into a single ASCII character based on the Date/Time translation table.

Note: The Date/Time translation table is located in Appendix F of this document

UTP Trade Data Feed (UTDF) Specifications

Field Descriptions
R

Reason Code
    Category A – Type H

6 bytes, Alphanumeric. This alphanumeric field indicates the reason for the current trading action status for an issue at the cross SRO level. The allowable values are as follows:

Code	Value
T1	Halt News Pending
T2	Halt News Dissemination
T5	Single Stock Trading Pause In Affect
T6	Regulatory Halt Extraordinary Market Activity
T8	Halt ETF
T12	Trading Halted; For information requested by NASDAQ
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
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
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; maint. req. 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
IPOE	IPO security – positioning window extension
MWCQ	Market Wide Circuit Breaker Resumption
Space	Reason Not Available

Please note that NASDAQ will generate a new Cross SRO Trading Action message whenever one of the attributes in the Trading Action message was to change.   The Action Date/Time field within the Trading Action message would reflect the time of the most recent data element change.

Notes: News Codes H4 and H9 will ordinarily be activated in situations where an SEC trading suspension is terminated and a NASDAQ trading halt is terminated, but the issuer in either instance is not in compliance with specific NASDAQ requirements in NASD rule 4120 and its interpretations. H4 and H9 codes indicate a qualifications halt and quotations may not be displayed until the issuer meets NASDAQ requirements or is given a temporary exception.

Field Descriptions

Reg SHO Action
 Category A – Type V

1 byte, Numeric. This field indicates the Reg SHO short sale price test status for a NASDAQ-listed issue at the time of dissemination.   The allowable values are:

Code	Value
0	No price test in effect
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

Report Volume (Short Form)
 Category T – Type A

6 bytes, Numeric. This field represents share volume as reported by the UTP participant for the trade transaction. For volumes greater than 999,999 shares, the long form trade report message format shall be used.

Report Volume (Long Form)
 Category T – Types W, Y, Z

9 bytes, Numeric. This field represents share volume as reported by the UTP participant for the trade transaction. (Note: For trade transactions of 1,000,000,000 shares or more, the data will be disseminated as Administrative free-form text message.)

Reserved:
 Category A – Types C, D

1 byte, Alphanumeric. Space filled. This field is reserved for future use.

Round Lot Size
 Category A – Type B

5 bytes, Numeric. This field indicates the number of shares that make up a round lot for the given security. Allowable values are 00001 to 99999. For most NASDAQ issues, the round lot size is 100 shares.

Field Descriptions

S

Sale Condition (1 byte representation)
Category T – Types A

1 byte, Alphanumeric (including special characters). This field is used to denote the sale condition associated with a trade transaction.

Code	Value	Code	Value
@	Regular Sale	R	Seller
A	Acquisition	S	Split Trade
B	Bunched Trade	T	Form T
C	Cash Sale	U	Extended trading hours (Sold Out of Sequence)
D	Distribution	V	Contingent Trade
E	Placeholder for future use	W	Average Price Trade
F	Intermarket Sweep	X	Cross Trade
G	Bunched Sold Trade	Y	Yellow Flag Regular Trade
H	Price Variation Trade	Z	Sold (out of Sequence)
I	Odd Lot Trade	1	Stopped Stock (Regular Trade)
K	Rule 155 Trade (AMEX)	4	Derivatively priced
L	Sold Last	5	Re-Opening Prints
M	Market Center Official Close	6	Closing Prints
N	Next Day	7	Qualified Contingent Trade ("QCT")
O	Opening Prints	8	Placeholder For 611 Exempt
P	Prior Reference Price	9	Corrected Consolidated Close (per listing market)
Q	Market Center Official Open		

UTP Trade Data Feed (UTDF) Specifications

Field Descriptions

Sale Condition (4 byte representation)
Category T - Types W, Y, Z

4 byte, Alphanumeric (including special characters). This field is used to denote the sale condition modifier which applies to the trade report and any subsequent modifiers, which provide the additional trade details. Only one sale condition in each level from left to right is permissible from each of the categories listed below:

Level1 – Byte Settlement Type	Level 2 – Byte Reason for TT Exemption	Level 3 Byte Extended Hours or Sold	Level 4 – Byte SRO Trade Detail
@ = Regular Trade	**F** = Intermarket Sweep	**T** = Form T	**1** = Stopped Stock
C = Cash	**O** = Opening Prints	**L** = Sold Last	**A** = Acquisition
N = Next Day	**4** = Derivatively Priced	**Z** = Sold (Out of Sequence)	**B** = Bunched
R = Seller	**5** = Re-Opening Prints	**U** = Extended trading hours - Sold Out of Sequence	**D** = Distribution
Y = Yellow Flag	**6** = Closing Prints		**E** = Placeholder
	7 = ~~Placeholder For 611 Exempt~~ Qualified Contingent Trade ("QCT")		**G** = Bunched Sold Trade
	8 = Placeholder For 611 Exempt		**H** = Price Variation Trade
	9 = Corrected Consolidated Close (per listing market)		**I** = Odd Lot Trade
			K = Rule 155
			M = Market Center Official Close Price
			P = Prior Reference Price
			Q = Market Center Official Open Price
			S = Split Trade
			V = ~~Stock-Option Trade~~ Contingent Trade
			W = Average Price Trade
			X = Cross Trade
	<Space>	**<Space>**	**<Space>**

Refer to Appendix B – Glossary of Terms for a definition of each sale condition.

Seller's Sale Days
Category T – Types W, Y, Z

2 bytes, Numeric. If the sale condition code is equal to "R" (Seller), this field will reflect the number of days that may elapse before delivery of the stock. If the sale condition is not "R", this field will be zero filled.

Short Sale Threshold Indicator
Category A – Type B

1 byte, Alphanumeric. This field indicates if a security is subject to mandatory close-out of short sales under SEC Rule 203(b)(3). The allowable values are as follows:

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

T

Text
  Category A – Type A

Up to 300 characters, Alphanumeric. Free-form text is used to notify data feed subscribers of special situations.

Total Consolidated Volume
  Category V – Type M (label)

12 bytes, Numeric. This field reflects the total consolidated share volume for all NASDAQ-listed issues at the time of dissemination. The total consolidated volume reflects trading activity reported by all UTP participants during the US market session (including pre- and post-market sessions) up to the time the message is generated.

Trade Through Exempt Flag
  Category T – Type W, Y, Z: Category T - Type H

1 byte, Alphanumeric. This field represents that the trade is not subject to trade through rule 611 of SEC Reg. NMS. The allowable values are:

Code	Value
X	611 Trade Through exempt
<space>	not 611 Trade Through exempt

Trading Action Indicator
  Category A – Type Z

1 byte, Alphanumeric. The Trading Action Indicator indicates if there is trading halt in affect for the issue at the cross SRO level at the market close. The associated values are as follows:

Code	Value
H	Trading Halt In Effect
Space	Regular Trading In Effect

7.0   Trade Message Processing

7.1   Vendor Display Rule

The US Securities and Exchange Commission (SEC) dictates how UTP data is to be displayed in its Vendor Display Rule (Rule 11Ac1-2, 17 CFR 240.11Ac1-2). For more information, please refer to the SEC website at http://www.sec.gov.

7.2   Hours of Operation

The hours of operation for the UTP Plan are 04:00 to 20:00. In order to handle pre-opening and post-closing processing, the UTP SIP operational hours will be slightly longer. Please refer to Appendix C for the current UQDF Schedule of Transmissions.

Please note that each UTP market center has the right to set its own hours of operation.

The UTP SIP may operate on a modified schedule on select holidays. In such an event, NASDAQ will publish a Vendor Alert with the modified schedule for the UTP data feed products on the NASDAQ Trader web site.

7.3   Scope of Data

Under the UTP Plan, the UTP SIP will process quotation and trade data from registered UTP participants for all NASDAQ listed securities only. The NASDAQ Issue Symbol Directory is available for download from the NASDAQ Trader website at (http://www.nasdaqtrader.com/Trader.aspx?id=symbollookup).

NASDAQ handles security additions, deletions, and modifications as part of its normal overnight processing. UTDF subscribers should process the NASDAQ Daily List from the NASDAQ Trader website to ensure that they have the most up-to-date Issue Symbol Directory information. Please note that NASDAQ also provides dividend data (such as cash and stock distribution amount and ex-date) via the Dividend Daily List. To access the Daily Lists, please refer to (http://www.nasdaqtrader.com/Trader.aspx?id=symbollookup).

7.4   Intra-Day Trade Processing

The U.S. market session runs from 09:30 to 16:00. During the US Session, all UTP participants are expected to submit quotation and trade data to the UTP SIP on a timely basis. UTP participants may also elect to enter quotation and trade data during the pre-market session (from 04:00 to 09:29:59) and post-market session 16:00 to 20:00. Please note that trades that occurred during the pre- and post-market sessions should be reported with an appropriate extended hour's sale condition modifier.

Administrative & Volume Message Processing

7.4.1   Market Center Originator ID

In UTDF message header, there is a one-character Market Center Originator ID field. This field will be used to identify the UTP participant that initiates the trade, control, or administrative message. To date, the following Originator ID values have been assigned to UTP participants:

Code	Value
A	NYSE MKT
B	NASDAQ OMX BX
C	National Stock Exchange
D	FINRA ADF
I	International Securities Exchange
J	EDGA Exchange, Inc
K	EDGX Exchange, Inc
M	Chicago Stock Exchange
N	NYSE Euronext
P	NYSE Arca Exchange
Q	NASDAQ OMX
V	Investors Exchange LLC
W	Chicago Board Options Exchange
X	NASDAQ OMX PHLX
Y	BATS Y-Exchange, Inc
Z	BATS Exchange Inc

If the message is generated by the UTP SIP system itself, the Originator ID will be "E".

Originator ID Code	UTP Participant Name
E	Market Independent (SIP)

7.5   Message Contents

UTP participants are permitted to enter trade data for all NASDAQ listed securities. Please note that it is the responsibility of each UTP participant to validate the quality and integrity of its data prior to submission to the UTP SIP. All trade-related messages will contain the following data fields:

- Issue Symbol
- Sale Condition Modifier
- Price
- Report Volume

UTP Trade Data Feed (UTDF) Specifications

Administrative & Volume Message Processing

7.5.1   Sale Condition

The Sale Condition field is used to indicate the type of trade transaction entered by a UTP participant. For a description of each modifier, please refer to Appendix B – Glossary of Terms. Market data subscribers may use this field to determine when to update the high, low, and last sale prices and volume for an issue.

As part of SEC Regulation NMS UTP participants will be required to identify trade transactions that have been exempted from the trade through rule.

7.5.1.1.   UTP Trade Condition Matrix

Modifier	Condition	Consolidated Processing Guidelines		Market Center Processing Guidelines		Update Volume
		Update High/Low	Update Last	Update High/Low	Update Last	
@	Regular Sale	Yes	Yes	Yes	Yes	Yes
A	Acquisition	Yes	Yes	Yes	Yes	Yes
B	Bunched Trade	Yes	Yes	Yes	Yes	Yes
C	Cash Sale	No	No	No	No	Yes
D	Distribution	Yes	Yes	Yes	Yes	Yes
E	Placeholder Future Use	TBD	TBD	TBD	TBD	TBD
F	Intermarket Sweep	Yes	Yes	Yes	Yes	Yes
G	Bunched Sold Trade	Yes	No[1]	Yes	No[1]	Yes
I	Odd Lot Trade	No	No	No	No	Yes
H	Price Variation Trade	No	No	No	No	Yes
K	Rule 155 Trade (AMEX)	Yes	Yes	Yes	Yes	Yes
L	Sold Last	Yes	Yes[2]	Yes	Yes	Yes
M	Market Center Official Close	No	No	Yes	Yes	No
N	Next Day	No	No	No	No	Yes
O	Opening Prints	Yes	Yes	Yes	Yes	Yes
P	Prior Reference Price	Yes	No[1]	Yes	No[1]	Yes
Q	Market Center Official Open[3]	No	No	Yes	No	No
R	Seller	No	No	No	No	Yes
S	Split Trade	Yes	Yes	Yes	Yes	Yes
T	Form T	No	No	No	No	Yes
U	Extended trading hours (Sold Out of Sequence)	No	No	No	No	Yes
V	~~Stock-Option Trade~~	~~Yes~~	~~Yes~~	~~Yes~~	~~Yes~~	Yes
	Contingent Trade	No	No	No	No	Yes
W	Average Price Trade	No	No	No	No	Yes
X	Cross Trade	Yes	Yes	Yes	Yes	Yes
Y	Yellow Flag Regular Trade	Yes	Yes	Yes	Yes	Yes
Z	Sold (out of Sequence)	Yes	No[1]	Yes	No[1]	Yes
1	Stopped Stock (Regular Trade)	Yes	Yes	Yes	Yes	Yes
4	Derivatively priced	Yes	No[1]	Yes	No[1]	Yes
5	Re-Opening	Yes	Yes	Yes	Yes	Yes
6	Closing Prints	Yes	Yes	Yes	Yes	Yes
7	~~Placeholder For 611 Exempt~~	~~TBD~~	~~TBD~~	~~TBD~~	~~TBD~~	~~TBD~~
	Qualified Contingent Trade ("QCT")	No	No	No	No	Yes
8	Placeholder For 611 Exempt	TBD	TBD	TBD	TBD	TBD
9	Corrected Consolidated Close (per listing market)	Yes	Yes	No	No	No

[1] *UTDF Subscribers should only update the field values if the trade is the first or only last sale eligible trade transaction of the business day from any UTP participant.*

[2] *UTDF subscribers should update consolidated last sale field if received prior to the End of Last Sale Eligibility Control Message (16:01:30). After End of Last Sale Eligibility Control Message is received the*

transaction would only update the market center-specific last sale value but not the consolidated last sale value.

[3] *Please note that direct data recipients, which maintain individual market center open values, should use the "Q" value as the official market center opening value and populate data displays accordingly.*

Notes:
- For the sale condition modifier of "M" (Market Center Close Price), UTDF subscribers should note that this value is available to, but may not be supported by, all UTP participants. If a UTP Participant does not provide this sales condition code, UTDF subscribers should continue to show its final last sale eligible trade as the closing price for the market center.

- The "M" sale condition modifier will update the last sale price for the market center, but not the consolidated market. If the market center responsible for the consolidated last sale price submits a separate "M" transaction, it is possible that the two last sale values will not match.

- For the sale condition modifier of "Q" (Market Center Open Price), UTDF subscribers should note that this value is available to, but may not be supported by, all UTP participants.

7.5.1.2.   Use of Sale Condition Modifiers – Last Sale Reporting

As part of SEC Regulation NMS the UTP SIP will restructure the way trade reports are accepted from the Participants. Additionally the UTP SIP will restructure the manner in which trade reports will be disseminated utilizing a new trade through exempt flag and a new four byte sale condition field that when used in combination and in specific order more fully describe the characteristics of that particular trade.

Trade Through Exempt Flag:
The outbound specifications will be modified to include a new one byte value to identify trade transactions that have been exempted from the trade through rule.

Code	Value
X	611 Trade Through exempt
<space>	not 611 Trade Through exempt

Processing Assumptions:
It is the responsibility of each UTP participant to submit the sale conditions in their proper byte location and proper Trade Trough Exempt flag. UTDF will allow for the population of the sale condition values to be used in a specific byte location as follows:

Scenario A: If the trade record is marked as 611 exempt (X) then the allowable four bytes values are as follows:

Trade Through Exempt 611 Exempt	Level 1 – Byte Settlement Type	Level 2 – Byte Reason for TT Exemption	Level 3 Byte Extended Hours or Sold	Level 4 – Byte SRO Trade Detail
X	@, C, N, R or Y	F, O, 4, 5, 6, 7, 8, 9, <space>	T, L, Z, U, <space>	1, A, B, D, E, G, H, I, K, M, P, Q, S, V, W, X, <space>

UTP Trade Data Feed (UTDF) Specifications

Administrative & Volume Message Processing

Upon implementation of the July 2007 release the UTP SIP will permit Cash ("C"), Next Day ("N"), and Seller's Option ("R") settlement modifiers to be submitted in the Level 1 Byte field for Scenario B below.

Scenario B: If the trade record is marked as Not 611 exempt (space) then the allowable four bytes values are as follows:

Trade Through Exempt 611 Exempt	Level1 – Byte Settlement Type	Level 2 – Byte Reason for TT Exemption	Level 3 Byte Extended Hours or Sold	Level 4 – Byte SRO Trade Detail
<space>	@, C, N, R or Y	O, 5, 6, <space>	T, L, Z, U, <space>	1, A, B, D, E, G, H, I, K, M, P, Q, S, V, W, X, <space>

Sale Condition Matrix Four Byte Configuration:

Level 1 – Byte Settlement Type	Level 2 – Byte Reason for TT Exemption	Level 3 Byte Extended Hours or Sold	Level 4 – Byte Unusual Trade Detail
@ = Regular Trade	**F** = Intermarket Sweep	**T =** Form T	**1** = Stopped Stock
C = Cash	**O** = Opening Prints	**L** = Sold Last	**A** = Acquisition
N = Next Day	**4** = Derivatively Priced	**Z** = Sold (Out of Sequence)	**B** = Bunched
R = Seller	**5** = Re-Opening Prints	**U** = Extended trading hours - Sold Out of Sequence	**D** = Distribution
Y = Yellow Flag	**6 =** Closing Prints		**E =** Placeholder future use
	7 = ~~Placeholder 611 Exempt~~ Qualified Contingent Trade ("QCT)		**G** = Bunched Sold Trade
	8 = Placeholder 611 Exempt		**H** = Price Variation Trade
	9 = Corrected Consolidated Close (per listing market)		**I** = Odd Lot Trade
			K = Rule 155
			M = Market Center Official Close Price
			P = Prior Reference Price
			Q = Market Center Official Open Price
			S = Split Trade
			V = ~~Stock-Option Trade~~ Contingent Trade
			W = Average Price Trade
			X = Cross Trade
	<Space>	**<Space>**	**<Space>**

Note: For statistical update of the High/Low/Last, if there are multiple sale conditions within the trade record, a "no" update for any one of the statistics will take precedence for that related statistical record and no update will occur for the related value.

Example:

Trade Through Exempt 611 Exempt	Level 1 – Byte Settlement Type	Level 2 – Byte Reason for TT Exemption	Level 3 Byte Extended Hours or Sold	Level 4 – Byte SRO Trade Detail
X	@	4	<space>	<space>

For sale condition "4" (located in Level 2 of this message) the last value will update if it is the first or only trade of the day. As a result this trade example will have two outcomes to the statistical updates of high/low or last.

Statistical Update Results if transaction is first trade of the day:

Sale Condition Code	Update High/ Low Price	Update Last Sale Price	Update Volume
@4--	Yes	Yes	Yes

Statistical Update Results if transaction is not first trade of the day:

Sale Condition Code	Update High/ Low Price	Update Last Sale Price	Update Volume
@4--	Yes	No	Yes

7.5.2   Price

UTP participants submit quotations and trades in the following price format: $$$$$$.dddd (10 numeric bytes, with the first six characters representing the whole dollar amount of the price and the last four digits the decimal amount of the price).

To maximize the use of UTDF short form message formats, the UTP SIP may remove any leading or trailing zeros from the UTP participant's prices for outbound dissemination. The UTP SIP will <u>not</u>, however, round or materially alter the price itself.

7.5.3   Volume

The trade message contains only the share volume as reported by the UTP participant for an individual transaction. (Please note that some UTP participants may elect to report odd lot and mixed lot trades, although they are not required by the UTP Plan to do so. The UTP SIP will <u>not</u> round the report volume to the nearest round lot prior to dissemination.) While UTDF provides the consolidated daily volume field in the Trade Correction, Trade Cancel/Error, and Closing Trade Summary Report formats, it does not provide this statistic on a tick-by-tick basis.

To show an aggregated volume, market data vendors are responsible for performing the calculation on their end. Firms should factor trade cancel/error and trade correction as well as trade report messages into their algorithm.

Please note that an exchange may report either a zero or non-zero volume with its market center official closing value ("M" sale condition transaction) or market center official opening value ("Q" sale condition transaction). If the exchange chooses to report volume for the "M" and "Q" transactions, the information is intended for informational purposes only.   The exchange will also report the underlying transactions that comprise the closing and opening transactions. To prevent double counting of the volume, it is important the UTDF subscribers **<u>exclude</u>** the "M" and "Q" transactions from all volume calculations.

7.5.4   Consolidated Price Change Indicator

UTDF trade messages contain a Consolidated Price Change Indicator field to denote which <u>consolidated</u> prices to update as a result of the transaction. The Change Indicator field is included on the Trade Reports (long and short form), Trade Correction, and Trade Cancel/Error message formats. The associated values for this field are as follows:

Code	Value
0	No price changed
1	Consolidated Last price changed
2	Consolidated Low price changed
3	Consolidated Last and Consolidated Low prices changed

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Code	Value
4	Consolidated High price changed
5	Consolidated Last and Consolidated High prices changed
6	Consolidated High and Consolidated Low prices changed
7	All consolidated prices changed

Please note that all transactions will impact the consolidated volume. The Consolidated Price Change Indicator should be used for consolidated data displays only.

Note: Vendors that maintain a market-specific data display will need to perform their own calculations for each UTP participant using the Market Center Sale Condition modifier Matrix (see Section 7.5.1.2 above).

7.6   Trade Correction and Trade Cancel/Error Processing

If a transaction was misreported, a UTP participant may enter a cancel or correct the message by sending a subsequent message. In the outbound message format, the UTP SIP includes the Original Message Sequence Number (MSN) and trade characteristics to enable the UTDF subscriber to properly mark or remove the incorrect transaction from their database. If the original message sequence number is unavailable (e.g., due to an intra-day message sequence number reset), the UTP SIP will show the Original MSN field as zero-filled. If the Original MSN is unavailable, the subscriber may attempt to locate the transaction by using the trade characteristics (i.e., market center, price, sale condition, and report volume) in the original trade section of the message format.

Note: Vendors that maintain a market-specific data display will need to perform trade corrections and trade cancel/error calculations for each UTP participant using the Market Center Sale Condition modifier Matrix (see Section 7.5.1.2 above).

7.7   Net Change Calculation

7.7.1   Consolidated net change calculation for existing NASDAQ issues

UTDF does <u>not</u> include a net change indicator field. Data feed recipient must perform their own calculation for last sale-eligible trades. The formula should be as follows:

Net Change for Issue Symbol = Current Trade Price - Adjusted Previous Close Price

To obtain the Adjusted Previous Close, market data vendors will need to apply dividends to the Closing Price field from the prior day's Closing Trade Summary Report message. As noted above, market data vendors may obtain dividend information from the Dividend Daily List section of the NASDAQ Trader website at http://www.nasdaqtrader.com/dailylist/dailylist.stm. Dividend adjustments are typically applied to the closing price on the day prior to ex-date and reflected on the ex-date, the next business day. Cash dividends of $0.01 or greater should be subtracted from the closing price. For stock dividends, the closing price should be divided by the dividend amount.

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7.7.2 Consolidated net change calculation for newly listed securities

For Initial Public Offerings (IPOs), UTDF subscribers should use the IPO price as established by the issuer as the basis for the net change calculation. IPO price information will be relayed via a General Administrative message from NASDAQ Market Operations. If no IPO price is given, firms should use the price of the first last sale-eligible trade from the Listing Market as the basis for the net change calculation. For newly listed issuers that are moving to NASDAQ from another exchange, UTDF subscribers shall refrain from calculating a net change unless otherwise instructed by the Listing Market Center.

7.7.3 Market Centers Net Change

UTDF subscribers should also adjust the market center previous day's closing price for dividends. Unless the UTP participant otherwise specifies, the closing price adjustments for dividends should be the same for the market center as the consolidated data.

If there is no previous day's closing price for the market center, UTDF subscribers should observe the following rules:

- **New Market Center in Existing Issue:** When a Market Center becomes active in an issue for the first time; UTDF subscribers should use the adjusted consolidated closing price from the prior business day as the basis for market center-specific net change calculations.

- **Newly Listed Issue**: UTDF subscribers should follow the same processing rules outlined in section 7.7.1 for the consolidated market. Both the market center and consolidated net change calculations shall use the base value as provided by the Listing Market on the first day that an issue trades as a NASDAQ-listed issue.

7.8 Sub-Market Center Processing

The Sub-Market Center Identifier value will be used for NASD-reported trades to indicate the originating market center of a trade transaction. FINRA, as the regulator of the over-the-counter market, is responsible for reporting internalized trades of its member firms. FINRA may, however, align with other UTP participant exchanges to facilitate the collection; verification and reporting of internalized trade transactions to the UTP SIP.

Since FINRA acts as the regulator for all over-the-counter transactions, the UTDF Market Center/Originator ID field will carry the value of "D" for FINRA. When the transaction is collected as part of a joint trade reporting facility, the UTP SIP will indicate the originating UTP market center in the Sub-Market Center field.

All UTP participants are eligible to create a trade reporting facility (TRF). A sub-market identifier will be used to identify participant's transactions via a TRF. Vendors should be prepared to support the following values:

Code	Value
Q	NASDAQ OMX TRF
A	NYSE MKT TRF
B	NASDAQ OMX BX TRF
C	National Stock Exchange TRF
I	International Securities Exchange TRF
J	EDGA Exchange TRF
K	EDGX Exchange TRF
M	Chicago Stock Exchange TRF
N	NYSE Euronext TRF
P	NYSE Arca TRF
V	Investors' Exchange LLC
W	Chicago Board Options Exchange TRF
X	NASDAQ OMX PHLX TRF
Y	BATS Y-Exchange TRF
Z	BATS Exchange Inc TRF
<space>	No sub-market; Trade originates from FINRA Alternative Display Facility.

7.8.1   *Processing Example Sub-Market Center*

As an example on how this would be populated, in the new message header format, trades reported by the Trade Reporting Facility LLC (NASDAQ/NASD) would be designated as market center "D" and a the new sub market center identifier as "Q", those reported by any other exchange (once established) could be designated as market center "D" and a the new sub market center identifier as assigned by the UTP SIP once the participants joint facility is operational with FINRA. For example:

Market Center / Originator ID	Sub-Market Reporting Facility	Description
D	Q	UTP Participant Q/NASD facility
D	C	UTP Participant C/NASD facility

7.9   *Prior Day As-Of Trade Processing*

The Prior Day As-Of trade reporting is used to report a trade, which occurred earlier than the current day and was not reported or to report the cancellation of a trade that was reported in error on a previous day. Within the Prior Day As-Of message the Prior Day message sequence number and trade date will be populated for cancellation reports. Transactions being reported as-of will include the trade date but not the message sequence number.

The Prior Day As-Of Trades are being provided for public disclosure and are not intended to materially affect the statistical values (high/low/last) previously disseminated for the given day. These reports are intended to provide transparency on transaction that will be used, by the UTP SIP, as part of the SEC Regulation NMS Allocation Amendment. It is the responsibility of each direct data recipient to determine how to adjust historical data within their systems.

8.0 Administrative & Volume Message Processing Guidelines

UTDF uses administrative messages to communicate trading halt and end-of-day trade summary data for individual issues. In addition, UTDF supports a free-form text message for those items that do not lend themselves easily to a fixed format message format.

8.1 General Administrative Messages

The General Administrative Message (Category A – Type A) is a free form text message used to notify UTDF subscribers of special situations or trading conditions. The length of the Administrative Message is variable but cannot exceed a maximum of 300 characters. The General Administrative Message format may be generated by a UTP participant or by the UTP SIP Operations Center on an as-needed basis.

Since the General Administrative Message is a flexible format message, it is up to the individual data feed subscriber to decide how to process these messages. Firms may wish to code their systems to generate a systems alert for data operations as manual processing of the General Administrative message may be required.

In general, the General Administrative Message format is intended to relay market information that does not easily lend itself to fixed message formats. Over the years, however, the NASDAQ market center has used this message format to communicate initial public offering (IPO) data for its new Nation Market or Capital Market listings. NASDAQ will continue to support these messages via the UTDF data feed for subscribers.   To help subscribers, NASDAQ Market Operations will use the following language whenever possible:

8.1.1 IPO Message Text

NASDAQ Market Operations will send an administrative message to give the initial trading price for a new listing. At the request of market data vendors, NASDAQ Market Operations has defined standard language for these administrative messages.

For Initial Public Offerings (IPOs), the standard text is as follows:

IPO PRICE at [time quoted] [symbol] [IPO Price]….NASD

Example: IPO PRICE AT 10:25 XXXX 1500….NASD

For new issues that previously traded on another market center, the standard text is as follows:

SEASONED SECURITY FIRST TRADE PRICE [symbol] [price]….NASD

Example: First Trade Price XXXX 1500….NASD

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8.2   *Cross SRO Trading Action Messages*

NASDAQ, in its role as the listing market, may institute a trading halt or trading pause in an issue due to news dissemination or regulatory reasons, or to suspend trading in an issue due to listing qualification problems. Under the UTP plan, all market centers will observe and abide by the trading action of the listing market. NASDAQ will relay halt and suspension information to the UTP SIP via a Cross SRO Trading Action administrative message (Category A – Type H).

Please note that the Cross SRO Trading Action message is supported for operational as well as regulatory halts in this document.

The Cross SRO Trading Action contains the following fields:

- Issue Symbol
- Action
- Action Date/Time
- Reason Code

As defined in Section 6 of this document, there are three types of trading actions:

Code	Value
H	Trading Halt
Q	Quotation Resumption
T	Trading Resumption
P	Volatility Trading Pause

When a trading halt or trading pause is instituted, the listing market will send a Cross SRO Trading Action message with an Action field value of "H" to the UTP SIP and the reason code populated with the Halt Reason. Upon receipt of this message, the UTP SIP will zero out the BBO quotes of all UTP participants and suspend the calculation of the National BBO. Within the UTP Participant BBO Quote message, the National BBO Appendage Indicator will be set to "1" to indicate that no National BBO exists.

Please note that the UTP SIP will disseminate a Cross SRO Trading Action message whenever the Action and/or Reason value for an issue is updated. During a halt, the UTP SIP may update Reason value for an issue without changing the trading status for the issue.

The length of a trading halt or trading pause may vary from security to security. If a trading halt spans multiple days, the primary exchange will send a Cross SRO Trading Action message to the UTP SIP at the start of the business day.

When the listing market is ready to lift the halt, it will send another Cross SRO Trading Action with an Action of "Q" and quote resumption Reason. To ensure an orderly market, a quote-only window is provided for quoting participant to adjust their positions before trading resumes in the issue. During this positioning period, UTP participants may enter quotations in the issue. As UTP participants enter data, the UTP SIP will calculate a National BBO. During the positioning window, the National BBO should be considered to be indicative.

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Once an issue can begin trading, the listing market will send another Cross SRO Trading Action message with an Action value of "T" to indicate that trading is now allowed in the issue and the reason code populated with the trade resumption Reason. Upon receipt of the trading resumption message, the UTP SIP will resume the calculation of the National BBO provided that there are active UTP participants in the issue.

NASDAQ, as a primary listing market, has the authority to declare a five-minute trading pause for an individual security that does not exit a Limit State within 15 seconds.   To support this scenario, the UTP SIP is modifying the Trading Halt-Cross SRO message format to support a new "P" (Pause) action value as well as a new "LULDP" reason code.

8.3   Closing Trade Summary Report

Many investors require that the UTP SIP provide end-of-day price summary information.   The Closing Trade Summary Report administrative message (Category A – Type Z) is intended to provide the high price, low price, closing price, and volume for the consolidated market as well as the closing price and volume for each UTP participant in a NASDAQ-listed issue. At the request of the UTP participants and the market data community, the UTP SIP will generate three Closing Trade Summary Reports during the operational day. The transmission times are based on certain market events:

- The initial report will be disseminated at approximately 4:30 p.m., ET, and will reflect the closing price for UTP participants who choose to have their official closing price calculated in time for this report as well as the preliminary closing prices for the consolidated market and other UTP participants in NASDAQ-listed issues.
- This second report will be disseminated at 5:20 p.m., ET, and will reflect the closing price for UTP participants who choose to have their official closing price calculated in time for this report as well as the preliminary closing prices for the consolidated market and other UTP participants in NASDAQ-listed issues.
- The final instance of the Closing Trade Summary report will be generated upon receipt of the last End of Trading Reporting control message from UTP participants (approximately 20:10 Eastern Time). This report will contain the final closing price and volume data for the consolidated market as well as all UTP participants in a NASDAQ-listed issue.

For all instances of the Closing Trade Summary Report, the UTDF message will consist of two parts. The label of the message will contain the price summary and volume information for the consolidated market, and attachments will provide the closing price and volume for all market centers that actively traded the issue during the trading day. The UTP SIP will indicate if an issue is subject to a trading halt via the Trading Action Indicator field in the Closing Trade Summary Report message.

Please note that the UTP SIP will send a Closing Trade Summary Report for every NASDAQ-listed issue. If the issue did not trade during the day, the price and volume fields will be zero filled and the Consolidated Closing Market Center ID field will be left blank. If the issue traded but had no last sale-eligible transactions, the volume field will be populated but the price fields will be zero filled and the Consolidated Closing Market Center ID will be blank. For a list of last sale eligible trade conditions that can

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update the consolidate values and market center values, please refer to section 7.5.1 of this document.

Note: Since the new "M" (Market Center Official Close) sale condition modifier was introduced in 2003, the consolidated closing price may be set by a UTP participant that has a different official closing price from the price disseminated as the consolidated close. Consequently, UTDF subscribers should be prepared to accept different closing price values for the same market center in the two sections of the Closing Trade Summary Report message. The reason for this data difference is that the "M" sale condition will only affect the Market Center closing value and not the consolidated closing value. Since the "M" sale condition value may contain a different price than the UTP participant's regular trade transaction, it is possible for a UTP participant responsible for setting the Consolidated Closing Price in the message label to have a different Official Closing Value in the market center attachment as demonstrated in the example below:

Time	UTP Market Center	Transaction	Trade Price	Sale Modifier	Volume	Note
15:59:58	Q	Trade	$11.50	@	100	Regular sale = @
15:59:59	C	Trade	$11.65	@	100	
16:00:01	Q	Trade	$11.60	@	500	
16:00:04	Q	Trade	$11.55	@	1000	
16:01:30	Q	Trade	$11.59	M	0	UTP Submits "M" Modifier

The Closing Trade Summary Report would reflect the following data:

Time		Trade Price	Sale Modifier	Volume	Set by.
16:40	Consolidated	$11.55	@	1000	NASDAQ
Attachment	NASDAQ	$11:59	M	0	NASDAQ MC Close Value
Attachment	National	$11.65	@	100	National MC Last Sale eligible value

As a service to UTDF subscribers, NASDAQ added a new "Market Center Closing Indicator" field to the Closing Report Summary message attachment to denote when the market center closing price could be different from the consolidated closing price value.

8.4   Total Consolidated and Market Center Volume

The UTP SIP calculates the cumulative trading volume for all NASDAQ listed issues traded via the UTP plan and the cumulative individual market center volumes intra-day and disseminates these values at 30-minute intervals beginning at approximately 09:45. The final daily volume will be disseminated after the last End of Trading Reporting control message from a UTP participant (currently at approximately 18:35). With the implementation of the new SIP operational hours this will be disseminated at approximately 20:05.

The UTP SIP calculates the current total cumulative consolidated share volume and each active market center current cumulative volume activity as reported by all UTP

participants in all NASDAQ listed issue, intra-day and disseminates these values at 30-minute intervals beginning at approximately 09:45.

The final daily volume will be disseminated after the last End of Trading Reporting control message from a UTP participant approximately 20:05.

Note: The consolidated volume reflects trading activity up to the time that the message was generated. Only market centers with positive volume will be disseminated as attachments for a given time interval.

The UTP SIP calculation includes all NASDAQ-listed issue types, except test securities, in its total volume calculations. Within the NASDAQ Symbol Directory download file, there is a field that indicates if an issue is a test security. Firms that wish to emulate the UTP SIP Volume calculations may download the security file from the NASDAQ Trader web site at www.NASDAQtrader.com/trader/symboldirectory/symbol.stm.

8.5   *Market Center Trading Action Messages*

The UTP SIP supports a different message format to relay market center specific trading actions.   For trading halts and trading pauses that impact a single UTP participant, the UTP SIP will generate the Market Center Trading Action (Category A – Type K) message format.

The Market Center Trading Action contains the following fields:

- Issue Symbol
- Action
- Action Date/Time
- Market Center

This message will only be disseminated when there is a market center specific halt / pause situation in an individual security that impacts trading activity only on the market center generating the action. Trading and quoting activity may continue in other market centers

When a Market Center Trading Action is instituted, the UTP SIP will send a Market Center Trading Action message with an Action field value of "H" and the market center ID populated with the UTP participant requesting the action for their market place. If requested by the UTP participant, the UTP SIP will zero out the UTP BBO quotes for the identified market center. If the UTP participant does not request a quote wipeout, it is incumbent on the market center to update its quotation to a non-NBBO eligible quotation condition as long as the halt / pause is in effect.

The length of a Market Center Trading Action will vary from security to security and from market to market. If the action spans multiple days, the market center must send a Market Center Trading Action message to the UTP SIP at the start of each business day for which the issue is halted / paused on its market.

Market centers that utilize this function may observe a quotation only window or may simultaneously resume trading and quoting activity. To ensure consistency in messaging, that the UTP SIP will always send two Market Center Trading Action Messages to release the issue. The first will contain an Action value of "Q" to denote

quote resumption. Once an issue can begin trading, the market center will send another Market Center Trading Action message with an Action value of "T" to indicate that trading is now allowed in the issue.

8.6 *Issue Symbol Directory*

Since February 2007, NASDAQ has had the capability to accept and distribute NASDAQ-listed issues with 4-characters or less. In July 2007, the Securities and Exchange Commission (SEC) approved NASDAQ's filing to allow companies with three-letter stock symbols to keep their existing ticker symbols after switching to The NASDAQ Stock Market.

The UTP SIP will disseminate Issue Symbol Directory messages for all active issues in the NASDAQ market system at approximately 4:00 a.m. E.T.

Within the Issue Symbol Directory, NASDAQ will provide the following key data elements that redistributors should display to their end-users:

- **Short Sale Threshold Indicator:** As dictated by the SEC, NASDAQ provides this indicator to denote if a security is subject to mandatory close-out of short sales under Rule 203(b)(3).   To help firms adhere to this rule, NASDAQ recommends that redistributors include this indicator on displays.

- **Financial Status Indicator:** This field was added to the Issue Symbol Directory message as part of the message streamlining release in May 2005. In the interest of investor protection, NASDAQ will provide an indicator to denote if an issuer is delinquent in its regulatory filings, is deficient (below continuing listing standards), and/or bankrupt. NASDAQ will require that all external distributors provide this indicator on their end user displays.

- **Issue Type / Issue Sub-Type:**   These fields are intended to describe the Nasdaq instrument attributes.   Please note that Exchange Traded Managed Fund (ETMF) shares, which will be disseminated with the Issue Sub-Type of "EM", are quoted in proxy price format only.   Please refer to the ETMF product page on the Nasdaq Trader website for details on this asset class.

If at all possible, the UTP SIP recommends that redistributors integrate these indicators into their single security quote montages. For more information on NASDAQ's display recommendations and requirements, please refer to the NASDAQ Data Policies section of the NASDAQ Trader website at:
http://www.nasdaqtrader.com/content/AdministrationSupport/AgreementsData/datapolicies.pdf

8.7 Regulation SHO Short Sale Price Test Restricted Indicator

In May 2010, the SEC adopted amendments to Reg SHO under the Securities Exchange Act of 1934.   As outlined in Release Number 34-61595, the SEC is establishing a short sale-related circuit breaker that, if triggered, will impose a restriction on the prices at which securities may be sold short ("short sale price test" or "short sale price test restriction").

Under the amended rule, the SEC requires that the U.S. exchanges establish procedures to prevent the execution or display of a short sale order of a covered security at a price that is less than or equal to the current national best bid when the

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price of that security decreases by 10% or more from the prior day's adjusted closing price.

Once the price test restriction has been triggered, Rule 201 (also known as the Alternative Uptick Rule) would apply to short sale orders in that security for the remainder of the day as well as the following day.

In association with the SEC rule change, the UTP SIP will introduce a new Reg SHO Short Sale Price Test Restricted Indicator administrative message format on the UTP data feeds to indicate that an issue has breached the SEC Rule 201 short sale price test threshold.   On the UTP data feeds, the Reg SHO Short Sale Price Test Restricted Indicator message will be identified as Message Category A, Message Type V. The Reg SHO Short Sale Price Test Restricted Indicator message will include Issue Symbol and Reg SHO Action.   The defined values for the Reg SHO Action field will be as follows:

Reg SHO Action Code	Value
0	No Reg SHO Short Sale Price Test Restriction
1	Reg SHO Short Sale Price Test Restriction is in effect due to an intra-day price drop in security
2	Reg SHO Short Sale Price Test Restriction remains in effect

If the last price for a security falls by 10% or more from the adjusted prior day's NASDAQ Official Closing Price (NOCP) value, NASDAQ, as the primary market, will submit a Reg SHO Price Test Indicator message with a Reg SHO Action value of "1" (Short Sale Price Test Restriction In Effect Due to Intra-day Price Drop).   Once disseminated, UTP participants will be prohibited by rule from executing or displaying any short sale orders priced less than or equal to the prevailing national best bid price. Under Rule 201, the short sale price test restriction will remain in effect for the remainder of the current trading day and for the next trading day.

Under the rules, NASDAQ reserves the right to reverse the Reg SHO Price Test Indicator if it determines that the original trigger was based on a trade transaction that was subsequently ruled to be clearly erroneous or on an improperly adjusted prior day's closing value.   If NASDAQ is reversing the short sale price test restriction for an issue, it will generate a Reg SHO Action message with the Reg SHO Action value of "0" (No Reg SHO Short Sale Price Test Restriction) or "2" (Reg SHO Short Sale Price Test Remains In Effect) depending on the Reg SHO status of the NASDAQ-listed issue prior to the error.

Given that the short sale price test restriction spans multiple days, NASDAQ will disseminate Reg SHO Price Test Indicator messages for all NASDAQ-listed issues as part of its pre-opening processes on the UTP data feeds.   In the spin, NASDAQ will indicate whether or not the issue is subject to the SEC Rule 201 short sale price test based on the prior day's trading activity.   For those issues for which the Rule 201 restriction remains in effect, the Reg SHO Action value will be "2".   For all other issues, the Reg SHO Action value will be "0".

8.7   *Limit Up-Limit Down Functionality*

The Securities and Exchange Commission (SEC) has approved a plan (http://www.sec.gov/rules/sro/nms/2012/34-67091.pdf), to address extraordinary market volatility in NMS Stocks by establishing a new Limit Up–Limit Down (LULD) mechanism. The new LULD procedures are designed to prevent trades in individual NMS Stocks from occurring outside of specified Upper and Lower Limit Price Bands.

Overview of LULD Functionality
- Trade prices will be the basis for the calculation and publication of Price Bands for NMS Stocks.*
- Bid prices above the Upper Limit Price Bands and Offer prices below the Lower Limit Price Bands will be identified as Non-Executable and will not be included in the National Best Bid and/or National Best Offer calculations.
- National Best Bids that are below the Lower Limit Price Bands and National Best Offers that are above the Upper Limit Price Bands for NMS Stocks will be identified as Non-Executable.
- National Best Bids that are equal to the Upper Limit Price Bands and National Best Offers that are equal to the Lower Limit Price Bands for NMS Stocks will be identified as in Limit State.

* Exchange Traded Managed Funds (ETMFs) – Proxy prices will be used as the basis for calculation and publication of Price Bands.

Limit Up – Limit Down Price Band Messages
In support of the new LULD pilot program, the UTP SIP, shall calculate and disseminate to the public a Lower Price Band and an Upper Price Band for NASDAQ-listed securities during Regular Trading Hours.

The SIP shall calculate a Pro-Forma Reference Price on a continuous basis during Regular Trading Hours. If a Pro-Forma Reference Price has not moved by 1% or more from the Reference Price currently in effect, no new Price Bands shall be disseminated, and the current Reference Price shall remain the effective Reference Price.

When the Pro-Forma Reference Price has moved by 1% or more from the Reference Price currently in effect, the Pro-Forma Reference Price shall become the Reference Price, and the Processor shall disseminate new Price Bands based on the new Reference Price; provided however, that each new Reference Price shall remain in effect for at least 30 seconds.

LULD Changes to the Trading Action Messages
As noted above, NASDAQ, as a primary listing market, has the authority to declare a five-minute trading pause for an individual security that does not exit a Limit State within 15 seconds.   To support this scenario, the UTP SIP is modifying the Trading Halt-Cross SRO message format to support a new "P" (Pause) action value as well as a new "LULDP" reason code.

8.8   *Market Wide Circuit Breaker Changes*

The SEC has approved a joint SRO proposal to revise the existing market-wide circuit breakers, which halt trading in all NMS securities (as defined in Rule 600(b)(47) of Regulation NMS under the Act) in the event of extraordinary market volatility, in order to make them more meaningful in today's high-speed electronic markets.

As described in the SEC rule approval order, the market wide circuit breakers changes will: (i) replace the Dow Jones Industrial Average (DJIA) with the Standard & Poor's (S&P) 500 Index ("S&P 500") as the reference index; (ii) Recalculate the values of the threshold triggers daily rather than quarterly; (iii) reduce the 10%, 20%, and 30% market decline trigger percentages to 7%, 13%, and 20%; (iv) simply the length of the trading halts associated with each market decline level; and (v) streamline and extend the times when a market wide circuit breaker could be triggered.

The proposed Level 1, Level 2, and Level 3 circuit breakers would operate as follows:

Level 1 Halt - Before 3:25 p.m. – 15 minutes; at or after 3:25 p.m. – trading shall continue, unless there is a Level 3 halt.
Level 2 Halt - Before 3:25 p.m. – 15 minutes; at or after 3:25 p.m. – trading shall continue, unless there is a Level 3 halt.
Level 3 Halt - At any time – trading shall halt and not resume for the rest of the day.

In support of the new MWCB rules, the UTP SIP will be introducing two new administrative messages on UQDF, UTDF and OMDF.

8.8.1   *Market Wide Circuit Breaker (MWCB) Decline Levels message*

A Market Wide Circuit Breaker (MWCB) Level message will be disseminated as Category A - Type C to inform market participants of the daily MWCB decline points for the current trading day.

The MWCB Levels will generally remain in effect for the remainder of the current trading day and will be reset each trading day based on the prior day's closing value of the S&P 500 index. However, there can be situations where the decline levels were set due to erroneous activity. In this case the decline levels may reset and disseminate the MWCB decline levels again. Participants and UTP data recipients should process and use the most recently disseminated levels for that trading day.

8.8.2   *Market Wide Circuit Breaker Status message*

A Market Wide Circuit Breaker (MWCB) Status message will be disseminated to inform participants and the UTP data recipients when a MWCB has breached one of the established levels.

Following the Market Wide Circuit Breaker Status message, NASDAQ, as the primary market center, is expected to enter Trading Action – Cross SRO messages for all listed securities. To help differentiate MWCB actions from other halt actions, the UTP SIP will add new Reason code values as well.

The MWCB Status message will be generated **once** for each level if the S&P 500 declines past the established breaker decline level for the trading day.

9.0   Control Message Processing Guidelines

In April the UTP fully implemented the new Market Wide Circuit Breaker (MWCB) rule changes. The SEC approved a joint SRO proposal to revise the existing market-wide circuit breakers, which halt trading in all NMS securities (as defined in Rule 600(b)(47) of Regulation NMS under the Act) in the event of extraordinary market volatility, in order to make them more meaningful in today's high-speed electronic markets.

9.1   Overview

A Control message is a fixed format message that performs a specific system function. All Control Messages consist of a standard Message Header only. Please refer to Section 3.0 for the layout of the UTDF Message Header.

Control messages are used to notify UTDF subscribers of certain system events. The following control messages are supported on the UTDF data feed:

Category	Type	Usage
C	I	Start of Day
C	J	End of Day
C	O	Market Session Open
C	C	Market Session Close
C	K	End of Retransmission Requests
C	Z	End of Transmissions
C	T	Line Integrity
C	L	Sequence Number Reset
C	X	End of Trade Reporting
C	S	End of Consolidated Last Sale Eligibility

The following Control messages will be session-specific: Market Session Open, Market Session Close. All other control messages will be session independent. For a schedule of transmissions, please refer to Appendix C.

9.2   Control Message Description

9.2.1   Start Of Day

Category C - Type I

The Start of Day control message signifies the beginning of each operational cycle for SIP Processing. Each day, the Start of Day control message will be sent to inform SIP subscribers that all subsequent data transmitted will be real-time updates and should be treated accordingly. The message will be sent three times, at one-minute intervals, with the same Message Sequence Number (00000000) on each message.

9.2.2   End Of Day

Category C - Type J

The End of Day control message signals the end of active message dissemination for the UTP SIP operational cycle. The system shall generate and disseminate the End of Day control message upon receipt of the appropriate inbound control messages from all inbound sources. The End of Day message will be sent three times, at one-minute intervals. The first End of Day control message will contain a Message Sequence Number one greater than the highest

Control Message Processing

Message Sequence Number previously transmitted. The Message Sequence Numbers of the subsequent two control messages, however, will not be incremented.

9.2.3   Market Session Open

Category C - Type O

The Market Session Open Control Message signifies the opening of market systems for the session indicated in the Message Header. This message signifies the beginning of the Normal Market Session. The Message Sequence Number Field for the Session Open will contain a number one greater than the highest Message Sequence Number previously transmitted. Please note that each UTP participant may choose to provide a Market Session Open control message.

9.2.4   Market Session Close

Category C - Type C

The Session Close Control Message signals the closing of market systems for the session indicated in the Message Header. Upon receipt of this message, Vendors should close the appropriate market center security records in their files. The Message Sequence Number Field for the Market Session Close will contain a number one greater than the highest Message Sequence Number previously transmitted. Please note that each UTP participant may choose to provide a Market Session Close control message.

9.2.5   End of Trade Reporting

Category C – Type X

The End of Trade Reporting Control Message signals that a UTP participant has completed its trade entry and that no further data will be sent to the UTP SIP for the market session. Upon receipt of the last End of Trade Reporting control message, the UTP SIP will generate the Closing Trade Summary Report. The Message Sequence Number field will contain a number one greater than the highest Message Sequence Number previously transmitted.

9.2.6   End Of Retransmission Requests

Category C – Type K

This message signals that no further retransmission requests will be honored. The End of Retransmission Requests message will be sent three times, at one-minute intervals. The first End of Retransmission Requests control message will contain a Message Sequence Number one greater than the highest Message Sequence Number previously transmitted. The Message Sequence Numbers of the subsequent two control messages, however, will not be incremented. Although SIP operations may no longer accept retransmission requests after this control message is disseminated, it will disseminate retransmissions in queue.

9.2.7   End Of Transmissions

Category C – Type Z

The End of Transmissions Message signals that there will be no further transmissions of data sent through the UTP SIP line. This message will be transmitted at the end of the day, and will be the last message of the day. The End of Transmissions message will be sent three times, at one-minute intervals. The End of Transmissions control message will contain a Message Sequence Number one greater than the highest Message Sequence Number previously transmitted. The Message Sequence Numbers in the subsequent two control messages, however, will not be incremented.

9.2.8   Line Integrity

Category C – Type T

The Line Integrity Control Message will be transmitted at approximately one-minute intervals to verify the operational integrity of the UTP SIP message transmission, and will be intermixed with other messages. The Message Sequence Number will not be incremented for the Line Integrity Message. The Message Sequence Number will be equal to the message sequence number of the last message sent. Line Integrity Messages will not be retransmitted.

9.2.9   Sequence Number Reset

Category C – Type L

The Sequence Number Reset Message forces the resetting of the Sequence Number. The Sequence Number will either be reset to zero or to a number greater than the last number previously transmitted. Please note that, if the Sequence Number Reset message is sent, the UTP SIP will not be able to process retransmission requests for messages sent prior to the Sequence Number Reset control message.

9.2.10   End of Consolidated Last Sale Eligibility

Category C – Type S

This message was added as part of the September 2003 release. The End of Consolidated Last Sale Eligibility control message signals the closing of the trade-reporting window for consolidated last sale calculation eligibility.

Under the UTP plan, all participants must report trade transactions that impact the last sale price within 90 seconds of the normal market session close. The message will be generated 90 seconds after the market close message from the primary market. The Message Sequence Number field will contain a number one greater than the highest Message Sequence Number previously transmitted.

10.0   Format Release & Testing Guidelines

10.1   Release Notification

To keep pace with the changing business environment, UTP SIP may modify its data feed format specifications for UTP/SIP direct data feed customers. In advance of each release, UTP SIP will notify its direct connect customers of the format change via a Vendor Alert. The Notice will outline the scope of the changes as well as the testing and release schedule. Direct connect customers are required to modify and test their code based on NASDAQ notices.

In addition to the written communications, NASDAQ holds regular conference calls and in-person meetings to discuss upcoming initiatives with direct data feed customers.   For information on the conference calls and about in-person meetings, please contact your NASDAQ market data sales representative at 301.978.5307 or dataproducts@nasdaq.com.

10.2   Release Types

When the UTP SIP introduces new code, it will specify the release type in its outbound communications.   The following release types are supported for its data feed products:

Release Type	When Used	Description
Hot Cut	NASDAQ is modifying existing data content	On the release date, NASDAQ will only support the new data formats. Firms must be prepared to support the new data format on the stated release date. If a firm has failed to code to the new data formats, it will lose data. If the hot cut release involves a message header format change, firms will need to coordinate their code release for the same weekend as NASDAQ's system change-over.
Parallel Period	NASDAQ is migrating to a new system platform for data dissemination	NASDAQ will support both the old and new data formats in production for a limited period of time. Firms may make the transition to the new data formats at any point during the parallel period. Firms will only lose data if they fail to migrate to the new message format by the end date of the parallel period.
New Data	NASDAQ is adding new data content	On the release date, NASDAQ will introduce a new data element. Firms should schedule the code release based on their customer needs.

Format Release & Testing Guidelines

Release Type	When Used	Description
Phase-In Period	New data element or data processing change is driven by either: New regulatory rule OR New NASDAQ trading platform	To ensure a smooth transition for market participant firms, NASDAQ Transaction Services may opt to implement new rules or new systems in phases. Typically, NASDAQ will start the phase in with test securities before moving to production/live securities. If there is an associated data format change, firms will only see the new data elements for those phased-in securities.

10.3   Types of Testing

In advance of each release, the UTP SIP will offer test data for direct data feed customers to be used for quality assurance (QA) purposes. Depending on the scope of the changes, the testing period will range from one day to one month. For its data feed customers, the UTP SIP offers the following types of testing opportunities:

Evening test transmissions: For its evening testing opportunities, the UTP SIP will create sample messages in the new formats to be broadcast on select weeknights from 21:00 to 22:30. To generate the sample data, the UTP SIP uses a test script to exercise the full range of values for the affected message formats. The test script used to generate the nightly data transmission will be available to direct data feed subscribers upon request.

Weekend production tests: In advance of major releases, UTP SIP will conduct user acceptance tests (UATs) on select Saturdays for market participants. As market participants enter information into its production systems, UTP SIP will broadcast this test data in the new data formats to direct data feed subscribers. <u>Prior to each UAT, a Vendor Alert with registration information</u> will be posted.

Weekend stress tests: For bandwidth upgrades and capacity-related releases, UTP SIP will attempt to simulate projected data rates as part of the production test on Saturdays. At the conclusion of the manual entry period, UTP SIP will start software drivers to stress test its system. Please note that the market close event and any post-closing reports will be disseminated only after the stress test is complete. <u>When a UAT includes a stress test, UTP SIP will denote it in the Vendor Alert.</u>

For a list of upcoming testing and release dates for data feed subscribers, please refer to the "Release Schedule" section of the NASDAQ Trader web site. **NASDAQ strongly recommends that <u>all</u> direct subscribers use these testing opportunities to check their hardware and software applications.** During the testing phase, NASDAQ Market Data Distribution may ask market data vendors or market participants to provide status updates and/or submit testing verification forms as part of the QA process.

Format Release & Testing Guidelines

10.4 Identification of test data

During normal operational hours, NASDAQ will identify test data in one of the following two ways:

Test Retransmission Requester: In Section 3.4 of this document, the UTP SIP provides for a test retransmission requester for its data feed message header. NASDAQ populates this field for the test cycle messages only. Please refer to Appendix H of this document for the static content in the test cycle transmission.

Test Symbols: The UTP SIP may send out intra-day test data using special issue symbols via the UTP/SIP data feed. NASDAQ will communicate test issues via the Symbol Directory download file on the NASDAQ Trader website at
http://www.nasdaqtrader.com/trader/symboldirectory/symbol.stm.

During non-market hours, the UTP SIP will broadcast <u>unmarked</u> test data via the extranet providers. Customers should take necessary precautions to protect their systems against database corruption during evenings, weekends, and market holidays. Please refer to the Appendix C of this document for the current transmission schedule.

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Appendix A – Price Formats

The Price Denominator field is used to notify UTDF customers where to place the decimal point in a price field. The Price Denominator values are as follows:

Code	Denominator Value	Long Form Formats		Short Form Formats	
		Whole Dollar Digits	Decimal Digits	Whole Dollar Digits	Decimal Digits
B	100	8	2	4	2
C	1000	7	3	3	3
D	10,000	6	4	2	4

How to Use Table:

The price denominator field is designed to inform subscribers how to breakdown and read the price field. The following example is provided to ensure that customers understand the interdependency of these two fields.

As noted in section 4, the UTP SIP will use the short form versions of a trade message under the following conditions:

- Issue symbol is 5 characters or less;
- Price is stated in US Dollars;
- Price can be stated in 6 bytes or less (without the decimal point);
- Sale Condition value does not equal "R" (Seller); and
- Report Volume does not exceed 999,999 shares.

Otherwise the long form version of the message format will be used.
Price Format Example (assumes 6-character short price and 10-character long price):

Short vs. Long Form Message	Output Price from SIP	Price Denom. Value	Translated Price
Short	015510	B	155.10
Short	001225	B	12.25
Short	025255	C	25.255
Long	0001551234	D	155.1234
Long	1234561234	D	123456.1234
Long	0005551234	D	555.1234
Short	501234	D	50.1234
Short	012400	B	124.00

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Appendix A1 – MWCB price formats

In order to provide consistency within the market, the Security Industry Processors (SIPs) for the Consolidated Tapes have harmonized the message formats related to the market wide circuit breaker messages.

As such it is necessary to define the denominator processing for the Market Wide Circuit Breaker Decline messages (Category A – Type C) based on the following conversion.

The MWCB Denominator field values are as follows:

Code	MWCB Denominator Value	Formats	
		Whole Dollar Digits	Decimal Digits
A	10	11	1
B	100	10	2
C	1000	9	3
D	10,000	8	4
E	100,000	7	5
F	1,000,000	6	6
G	10,000,000	5	7
H	100,000,000	4	8

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Appendix B – Glossary of Terms

Consolidated Data
Last sale information from UTP participants that is integrated and disseminated by the UTP SIP on UTDF.

Consolidated High Price
The highest trade price reported with an eligible sale condition modifier received by the UTP SIP from any UTP participant.

Consolidated Last Sale Price
The latest trade transaction, with an eligible sale condition modifier, received by the UTP SIP from a UTP participant.

Locked/Crossed
A specific price "state" that a security is in. When a security is locked it means that the Bid and the Ask prices are equal. When a security is crossed it means that the Bid price is higher than the Ask price.

Consolidated Low Price
The lowest trade price reported with an eligible sale condition modifier received by the UTP SIP from any UTP participant.

Finra ADF
Abbreviation for FINRA Alternative Display Facility. A quotation and trade reporting facility to be created for FINRA member firms that chooses not to join the NASDAQ Exchange. The FINRA ADF is expected to provide individual market participant quotes, FINRA BBO quotes, and trade data to the SIP. The FINRA BBO size should feature the largest market maker size shown in the ADF at the best bid or offer.

One or Two Point Rule
In accordance with the Amex rules, a trade must receive Floor Official approval and be published on the tape as "opened" or "sold last" if:
- It is one point or more away from the last sale when the last sale is under $20.00; or
- It is two points or more away from the last sale when the last sale is $20.00 or more

Previous Consolidated Closing Price
The consolidated closing price from the prior business day that has been adjusted for ex-dividends.

Primary market
The listing market center for an issue. For UTP issues, the NASDAQ is the primary market.

Sale Condition
A modifier that denotes the type of transaction being reported by the UTP Participant. The allowable values are:

    Acquisition (A)
A transaction made on the Exchange as a result of an Exchange acquisition.

    Average Price Trade (W)
A trade where the price reported is based upon an average of the prices for transactions in a security during all or any portion of the trading day.

Please note that the NASDAQ market center also uses this value to report stopped stock situations.

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Bunched Trade (B) A trade representing an aggregate of two or more regular trades in a security occurring at the same price either simultaneously or within the same 60-second period, with no individual trade exceeding 10,000 shares.

Bunched Sold Trades (G) A bunched trade that is reported late.

Cash Sale (C) A transaction that calls for the delivery of securities and payment on the same day the trade took place.

Cross Trade (X) A Cross Trade a trade transaction resulting from a market center's crossing session.

Distribution (D) Sale of a large block of stock in such a manner that the price is not adversely affected.

Dot-T (T) A trade executed before or after the regular US market hours. Please note that the Dot-T modifier should be appended to all transactions that occur during the pre- and post-market sessions. The volume of Form-T trades will be included in the calculation of consolidated and market center volume. The price information in Dot-T trades will not be used to update high, low and last sale data for individual securities or indices since they occur outside of normal trade reporting hours.

Extended Trading Hours - Sold Out of Sequence (U) Trade reports used to identify extended trading hours trades that are reported more than 90 seconds after execution. Currently, the extended trading hours are comprised of pre-market trading from 8 a.m. to 9:30 a.m., Eastern Time (ET), and post-market trading from 4 p.m. to 6:30 p.m., ET.

This sale condition would be similar to the existing "T" sale condition in that trades executed outside of market hours will not impact market center or consolidated high, low, or last sale prices for an issue. The transactions would, however, count toward issue and market volume.

Intermarket Sweep (F) Intermarket sweep order means a limit order for an NMS stock that meets the following requirements:

- When routed to a trading center, the limit order is identified as an intermarket sweep order; and
- Simultaneously with the routing of the limit order identified as an intermarket sweep order, one or more additional limit orders, as necessary, are routed to execute against the full displayed size of any protected bid, in the case of a limit order to sell, or the full displayed size of any protected offer, in the case of a limit order to buy, for the NMS stock with a price that is superior to the limit price of the limit order identified as an intermarket sweep order. These additional routed orders also must be marked as intermarket sweep orders.

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Market Center Close Price (M)	Indicates the "Official" closing value as determined by a Market Center. This transaction report will contain the market center generated closing price. The "M" (Market Center Close Price) sale condition modifier shall only affect the Market Center Closing/Last Sale value and will not affect the consolidated market value.
Market Center Open Price (Q)	Indicates the "Official" opening value as determined by a Market Center. This transaction report will contain the market center generated opening price. The "Q" (Market Center Open Price) sale condition modifier shall only affect the Market Center Opening value and will not affect the consolidated market value. Direct data recipients that maintain individual market center open values should use this value as the official market center opening value and populate data displays accordingly
Next Day (N)	A transaction that calls for the delivery of securities between one and four days (to be agreed by both parties to the trade – the number of days are not noted with the transaction) after the trade date.
Odd Lot (I)	The Odd Lot Trade modifier will distinguish a trade resulting from a market center's execution in increments less than the defined round lot size.
Opening Prints (O)	The transaction or group of transactions reported as a result of a single-priced opening event by the Market Center.
Price Variation Trade (H)	The Price Variation Trade sale condition code is used to denote a regular market session trade transaction that carries a price that is significantly away from the prevailing consolidated or primary market value at the time of the transaction.
Prior Reference Price (P)	An executed trade that relates to an obligation to trade at an earlier point in the trading day or that refers to a prior referenced price. This may be the result of an order that was lost or misplaced or was not executed on a timely basis.
Rule 155 Trade (K)	To qualify as a 155 print, a specialist arranges for the sale of the block at one "clean-up" price or at the different price limits on his book. If the block is sold at a "clean-up" price, the specialist should execute at the same price all the executable buy orders on his book. This Sale Condition is only applicable for AMEX trades.
Seller (R)	A Seller's option transaction is a special transaction that gives the seller the right to deliver the stock at any time within a specific period, ranging from not less than four calendar days to not more than sixty calendar days.
Sold Out of Sequence (Z)	Sold Out of Sequence is used when a trade is printed (reported) out of sequence and at a time different from the actual transaction time.

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Sold Last (L) Sold Last sale condition modifier is used when a trade prints in sequence but is reported late OR the trade is printed by Amex in conformance to the One or Two Point Rule. A Sold Last transaction should only impact the consolidated last sale price for an issue if the market center reporting the sold last transaction also reported the transaction setting the current last sale price.

Split Trade (S) An execution in two markets when the specialist or Market Maker in the market first receiving the order agrees to execute a portion of it at whatever price is realized in another market to which the balance of the order is forwarded for execution.

Contingent Trade (V) The Contingent Trade sale condition code is used to identify transactions where the execution of the transaction is contingent upon some event.

Stopped Stock In accordance with Amex Rule 109, a "stopped stock" transaction may occur under several circumstances, including when an Amex Specialist executes market-at-the-close orders in a stock, where the Specialist is holding simultaneously both buy and sell market-at-the-close orders. The Specialist is required, under section (d) of the rule, to report the "pair off" transaction as "stopped stock". In addition a "stopped stock" transaction may occur when a Broker, trying to get a better price for the customer's market order than the currently available price, asks the Specialist to "stop the stock". The Specialist guarantees the Broker the current "stopped" price but does not immediately execute the order. The order is used by the Specialist to improve the quote in order to obtain a better price. If the next trade is at the "stopped" price, the order is "elected" and executed by the Specialist at the stopped price rather than at an improved price. The execution at the stopped price is designated as "Stopped Stock".

Depending on the timing of the trade report message, one of three sale condition modifiers may be used to identify a stopped stock transaction:

1 = Stopped Stock – Regular Trade

Yellow Flag (Y) Market Centers will have the ability to identify regular trades being reported during specific events as out of the ordinary by appending a new sale condition code Yellow Flag ("Y") on each transaction reported to the UTP SIP. The new sale condition ".Y" will be eligible to update all market center and consolidated statistics.

In certain instances, the UTP SIP will be required to append the .Y for the market center for trades reported as regular-way (Sale Condition @)

Derivatively Priced (4) A transaction that constituted the trade-through was the execution of an order at a price that was not based, directly or indirectly, on the quoted price of the NMS stock at the time of execution and for which the material terms were not reasonably determinable at the time the commitment to execute the order was made.

Re-Opening Prints (5) The transaction or group of transactions reported as a result of a single-priced re-opening event by the Market Center.

Closing Prints (6) The transaction or group of transactions reported as a result of a single-priced closing event by the Market Center.

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Qualified Contingent Trade ("QCT")	A transaction consisting of two or more component orders executed as agent or principal where the execution of one component is contingent upon the execution of all other components at or near the same time and the price is determined by the relationship between the component orders and not the current market price for the security.
Corrected Consolidated Close-per listing market (9)	This new modifier will be allowed to be used only by the Listing Market and may be used to adjust the consolidated last sale price. The Corrected Consolidated Close will be eligible to set the High, Low and Last for the consolidated statistics and will not update the participant records. Volume will always be reported as zero.
SIP	Abbreviation for Security Information Processor. The firm that collects quotation and trade information from all exchanges and markets in listed issues and disseminates resultant data feed(s) to the public.
UTP	Abbreviation for Unlisted Trading Privileges. Section 12(f) of the Securities and Exchange Act of 1934 permits exchanges to extend "unlisted trading privileges" on other exchange or markets.
UTP Plan	An industry committee that oversees the UTP SIP and allocates revenues for SEC-mandated data for NASDAQ listed issues. The committee is comprised of representatives from the primary market and eligible UTP participants.

Appendix

Appendix C –Supported Transmission Schedule

Note: All times referenced regarding UTDF are approximate and are stated in US Eastern Time. This transmission schedule is based on a normal trading day. The UTP Plan reserves the right to modify this schedule with minimal advance notice.

Time	Transmission	Message Category	Message Type	Session ID	Market Center ID
03:58	**Start of Day**	C	I	A	E
03:59	Start of Day	C	I	A	E
04:00	Start of Day	C	I	A	E
04:00	Issue Symbol Directory Messages	A	B	U	Q
	Line Integrity (Control messages sent at one-minute intervals during SIP operational day)	C	T	A	E
	General Administrative Messages (Free form text messages will be generated by the UTP SIP or market center on an as-needed basis.)	A	A	A	Various
	Message Sequence Number Reset (Control message will be generated by the UTP SIP on an as-needed basis)	C	L	A	E
04:00 to 20:00	**UTDF Trade-Related Messages** (Trade Report, Trade Cancel/Error, and Trade Correction messages) • Pre-Market Session from 04:02 to 09:30 (.T or .U trades only) • Regular Market Session from 09:30 to 16:01:30 • Extended Hours Session from 16:00 to 20:00 (.T or .U trades for new transactions; trade reconciliation from regular market session.)	T	A, W, Y, Z, H	U U	Various Various
04:00 to 20:00	**Market Center Trading Action Messages**	A	K	U	E
04:00 to 20:00	**Market Wide Circuit Breaker Decline Level Message**	A	C	U	Various
04:00 to 20:00	**Market Wide Circuit Breaker Status Message**	A	D	U	Various
04:00 to 18:00	**Reg SHO Short Sale Price Test Restricted Indicator** (Full spin disseminated at NASDAQ system open; Disseminated intraday on an as-needed basis)	A	V	U	Q
04:00 to 20:00	**Cross SRO Trading Action Messages** (Disseminated on as-needed basis; Trading Action messages affect a single issue)	A	H	U	Q
09:30 to 16:00	**Price Band Messages**	A	P	U	E
9:45	**Total Consolidated & Market Center Volume** (Sent at ½ hour intervals during trading day)	V	M	U	E
9:30	**U.S. Session Open Message**	C	O	U	Various
16:00	**U.S. Session Close Message**	C	C	U	Various
16:01:30	**End of Consolidated Last Sale Eligibility**	C	S	U	Q

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Time	Transmission	Message Category	Message Type	Session ID	Market Center ID
16:30:00	**Preliminary Trade Summary Report** (Consolidated and Market Center Prices and Volume snap shot. Values to be disseminated based on Amex closing time.)	A	Z	U	E
17:20	**Second Trade Summary Report** (Consolidated and Market Center Prices and Volume snap shot. Values to be disseminated at the end of the NASDAQ trade cancellation and correction window for normal market session.)	A	Z	U	E
20:10	**End of Trade Reporting Messages**	C	X	U	Various
20:10	**Final Trade Summary Report** (Final consolidated and market center closing prices and volume for current business day. Values to be disseminated at the end of the UTP SIP trade processing window.)	A	Z	U	E
20:10	End of Day Message (disseminated 3 times at approx 1 minute intervals)	C	J	A	E
20:13	End of Retransmission Message (disseminated 3 times at approx 1 minute intervals)	C	K	A	E
20:16	End of Transmissions Message (disseminated 3 times at approx 1 minute intervals) Delayed when retransmissions are still active)	C	Z	A	E

Appendix D - Deleted

Intentionally left blank

Appendix E – Stock Symbol Convention

For NASDAQ-listed issues, NASDAQ will assign a symbol of 1 to 4 characters in length. For subordinate securities, NASDAQ may 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 NASDAQ OMX Trader website.

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Appendix F – ASCII Conversion matrix

The following translation table is used to represent the Date and Time Stamp fields located in the Message Header and Trading Action Message.

ASCII From HwB

ASCII=American Standard Code for Information Interchange

ASCII Char	Dec	Hex	Description	base64 Time Digit (Date/Time LULD Price Band Effective Time)	base95 Time Digit (microseconds from midnight)
	32	20	Space		0
!	33	21	Exclamation		1
"	34	22	Double quotes		2
#	35	23	Number		3
$	36	24	Dollar		4
%	37	25	Percent		5
&	38	26	Ampersand		6
'	39	27	Single Quote		7
(	40	28	Open Parenthesis		8
)	41	29	Close Parenthesis		9
*	42	2A	Asterisk		10
+	43	2B	Plus		11
,	44	2C	Comma		12
-	45	2D	Hyphen		13
.	46	2E	Period		14
/	47	2F	Slash or Divide		15
0	48	30	Zero	0	16
1	49	31	One	1	17
2	50	32	Two	2	18
3	51	33	Three	3	19
4	52	34	Four	4	20
5	53	35	Five	5	21
6	54	36	Six	6	22
7	55	37	Seven	7	23
8	56	38	Eight	8	24
9	57	39	Nine	9	25
:	58	3A	Colon	10	26
;	59	3B	Semicolon	11	27
<	60	3C	Less than	12	28
=	61	3D	Equals	13	29
>	62	3E	Greater than	14	30
?	63	3F	Question mark	15	31
@	64	40	At symbol	16	32
A	65	41	Uppercase A	17	33
B	66	42	Uppercase B	18	34
C	67	43	Uppercase C	19	35
D	68	44	Uppercase D	20	36
E	69	45	Uppercase E	21	37
F	70	46	Uppercase F	22	38
G	71	47	Uppercase G	23	39
H	72	48	Uppercase H	24	40
I	73	49	Uppercase I	25	41
J	74	4A	Uppercase J	26	42
K	75	4B	Uppercase K	27	43
L	76	4C	Uppercase L	28	44
M	77	4D	Uppercase M	29	45
N	78	4E	Uppercase N	30	46
O	79	4F	Uppercase O	31	47

ASCII Char	Dec	Hex	Description	base64 Time Digit (Date/Time LULD Price Band Effective Time)	base95 Time Digit (microseconds from midnight)
P	80	50	Uppercase P	32	48
Q	81	51	Uppercase Q	33	49
R	82	52	Uppercase R	34	50
S	83	53	Uppercase S	35	51
T	84	54	Uppercase T	36	52
U	85	55	Uppercase U	37	53
V	86	56	Uppercase V	38	54
W	87	57	Uppercase W	39	55
X	88	58	Uppercase X	40	56
Y	89	59	Uppercase Y	41	57
Z	90	5A	Uppercase Z	42	58
[	91	5B	Opening bracket	43	59
\	92	5C	Backslash	44	60
]	93	5D	Closing bracket	45	61
^	94	5E	Caret	46	62
_	95	5F	Underscore	47	63
`	96	60	Grave accent	48	64
a	97	61	Lowercase a	49	65
b	98	62	Lowercase b	50	66
c	99	63	Lowercase c	51	67
d	100	64	Lowercase d	52	68
e	101	65	Lowercase e	53	69
f	102	66	Lowercase f	54	70
g	103	67	Lowercase g	55	71
h	104	68	Lowercase h	56	72
i	105	69	Lowercase i	57	73
j	106	6A	Lowercase j	58	74
k	107	6B	Lowercase k	59	75
l	108	6C	Lowercase l	60	76
m	109	6D	Lowercase m	61	77
n	110	6E	Lowercase n	62	78
o	111	6F	Lowercase o	63	79
p	112	70	Lowercase p		80
q	113	71	Lowercase q		81
r	114	72	Lowercase r		82
s	115	73	Lowercase s		83
t	116	74	Lowercase t		84
u	117	75	Lowercase u		85
v	118	76	Lowercase v		86
w	119	77	Lowercase w		87
x	120	78	Lowercase x		88
y	121	79	Lowercase y		89
z	122	7A	Lowercase z		90
{	123	7B	Opening Brace		91
|	124	7C	Vertical Bar		92
}	125	7D	Closing Brace		93
~	126	7E	Equivalency Sign-Tilde		94

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Appendix

Appendix G – Version Control Information

The following table outlines the changes made to the document since it was originally published on January 15, 2002:

Version	Date	Description of Documentation Change(s)
1.1	3/4/2002	• Changed WorldCom network to Market Data Network (MDN) from Enterprise IP-Multicast Network (EIN).
		• Changed IP sub-net addresses in Sections 3.2 and 3.5.1.
		• Added words "Market Center" to the "Originator ID" field name.
		• Added Appendix H – OMDF Test Cycle Messages to document.
		• Changed the following Message Types to avoid conflict with the existing NTDS data feed: 　o Closing Trade Summary Report from Category A – Type C to Category A – Type R 　o Long Form Trade Report from Category T – Type B to Category T – Type L.
		• Added Appendix H – UTP Trade Test Cycle Messages to document.
1.1a	3/6/2002	• Changed the values for the Function description in Section 7. The Function field is contained in the Trade Cancel/Error (Category T – Type D) message format.
1.2	4/4/2002	• Changed the following Message Type to avoid conflict with the existing NTDS data feed: 　o Trade Correction Message Category T – Type C to Category T – Type T
		o Sections affected:
		▪ 4.2 Trade Message Table
		▪ 5.1.3 Trade Correction Message
		▪ 6.0 Field Occurrences
		▪ 7.0 Field Descriptions
		▪ Appendix C – Schedule of Transmissions
		▪ Appendix H –UTP Trade Test Cycle Messages – third message.
		o Several field names have been updated to more accurately reflect the content that they provide. For example "Consolidated" has been added to Last Sale Price. Please refer to section 6 for list of field locations and occurrences and section 7 for field descriptions.
1.3	6/14/2002	• Modified Section 9.2 for Trading Action message processing.
		• Modified Section 9.3 for Closing Trade Summary Report message processing
		• Updated Appendix C- Transmission Schedule, Appendix D – Data Mapping from Legacy Services, and Appendix E – Symbol Suffixes.
		• Modified the report volume in Appendix A to accurately reflect the six-byte field of 999,999.
1.3a	6/18/2002	• Added Section 11 – Format Release & Testing Guidelines to document.
1.3b	6/27/2002	• Changed timing of End of Transmissions, End of Retransmission Requests, and End of Transmissions control messages in Appendix C.

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Version	Date	Description of Documentation Change(s)
1.4	7/3/2002	• Modified Section 8.7 on Net Change Calculations to provide guidance on Market Center data processing.
		• Added Appendix I – Data Quality Contacts to document.
2	9/4/2002	• Modified 9.3 to reflect the additional dissemination of the Closing Trade Summary Report (Category A – Type R).
		• Modified Appendix I to include AMEX contact information.
2.0a	9/12/2002	• Modified Section 8.7 to correct the calculation of Net Change to read:
		Net Change for Issue Symbol = Current Trade Price - Adjusted Previous Close Price
2.1	11/11/2002	• Added a data feed enhancements section to the Introduction.
		• Introduced a new Total Consolidated Volume Message (Category V – Type C). UTDF uses volume messages to communicate total consolidated trading volume traded intraday. The UTP SIP calculates the following message using the trade data.
		o The following sections of this document were impacted by the new Total Consolidated Volume message:
		▪ 4.1 – Message Category Table: Added "V" message category for volume messages.
		▪ 4.2 – Administrative & Volume Message Table. Added Category V – Type C to table.
		▪ 5.2.4 – Data Formats: Added new Total Consolidated Volume Message to Administrative & Volume Messages sub-section.
		▪ 6.0 – Field Occurrences: Added Total Consolidated Volume field to matrix.
		▪ 7.0 – Field Descriptions: Added Total Consolidated Volume field.
		▪ 9.4 – Administrative & Volume Message Processing Guidelines: Added processing rules for Total Consolidated Volume messages.
		▪ Appendix C – Schedule of Transmissions: Added dissemination start time for Total Consolidated Volume message.
		• Modified description of Date/Time field (Section 4.7) to read as follows: If the Market Center Originator ID contains the value of a UTP participant, this field will reflect the time that the UTP SIP received the inbound message from the originating market. If the Market Center Originator ID is "E", however, this field will reflect the time that the UTP SIP created the outbound message.
2.1 continued	11/11/2002	• Added a new Sales Condition Modifier value of "M". The use of this modifier by UTP participants will only affect the Market Center values and will not impact the consolidated values.
		o The following sections of this document were impacted by the new sale condition modifier:
		▪ 7.0 – Field Descriptions. Added "M" to Sale Condition Modifier definition as one of the allowable values.

Appendix

Version	Date	Description of Documentation Change(s)
		▪ 8.5.1 – Sale Condition. Modified this section to include two matrixes. One for the treatment of sales conditions for consolidated values (8.5.1.1) and the second for the treatment of sales conditions for market center values (8.5.1.2).
		▪ 9.3 – Closing Trade Summary Report. Modified Section to provide example of use of the "M" sale condition modifier.
		▪ Appendix B – Glossary of Terms. Added Market Center Close to sale condition definitions.
2.2	12/23/2002	• Added new UTDF Closing Trade Summary (Category A – Type Z) message format to sections 4, 5, 6, 7, and 9 of document. New Closing Report will be released as part of "M" sale condition modifier changes to UTDF in 2003.
		• Reversed timing changes for first instance of the UTDF Closing Trade Summary message format. Initial instance of report will continue to be disseminated at 5:20 p.m., ET, indefinitely.
2.2a	3/4/2003	• Modified Field description Value for Market Center Close Indicator. This field is alphanumeric.
2.2b	4/21/2003	• Removed reference, throughout the document, to the Closing Trade Summary (Category A – Type R) message, which is no longer supported. This message has been replaced by the new Closing Trade Summary (Category A – Type Z).
		• Modified Field value in Section 7.0 for Currency. With the recent introduction of the Market Center Official Close modifier (M), The UTP SIP changed its rules for trade processing for the new sale condition modifier (M). As a result of this change, the business logic used to generate the consolidated trade summary portion of the Trade Cancel/Error (Category T – Type D) and Trade Correction (Category T – Type T) messages on the UTP Trade Data Feed (UTDF) is currently not populating the currency field within the consolidated trade summary portion. This is isolated to cancel or corrections of the "M" records only. This field should be populated with the default value of "USD" but is currently spaced filled. The UTP SIP will implement a fix for these messages with a future release. Until then this field will be space filled.
		• Changed WorldCom to MCI throughout document to reflect the firm's new corporate entity.
3.0	5/12/2003	• Modified Section 1 to reflect the upcoming changes. • Modified the bandwidth allocations based on the 2004 projections. • Added a new control message that identifies the cut off for Consolidated Last Sale Eligibility (Category C – Type S). This new control message signals the closing of the trade-reporting window for consolidated last sale calculation. The following sections were impacted by this change: o Modified Section 4.2, added new message category and message type to the Control message table; o Modified Section 10.1 added new control message to the table; and o Added section 10.2.14 to provide definition and processing information for new control message. • Introduced three new sale condition modifiers in section 7 and 8 of this document:

Appendix

Version	Date	Description of Documentation Change(s)
		○ Stopped Stock – Regular Trade (1) ○ Stopped Stock – Sold Last (2) ○ Stopped Stock – Sold Out of Sequence (3) • Revised Appendix B – Glossary of Terms as follows: ○ Added definition for "One or Two Point Rule" and "Stopped Stock"; and ○ Modified definition for Sold Last (L) sale condition. • Removed Appendix D – Data Element Mapping from Legacy Services. • Modified Test Cycle Message #6 to reflect the new closing report format.
3.0a	6/02/2003	• Revised Appendix B – Glossary of Terms as follows: • Per the request of Amex the Stopped Stock definition was modified.
3.0b	7/17/2003	• Modified sections 1 and 9 as well as Appendix C (Transmission Schedule) of document to reflect the new 4:30 Closing Trade Summary Report.
3.0c	8/29/2003	• Modified Appendix F – Date and Time Translation Table: Time Values, 49 thru 59 were corrected to reflect ASCII values as lowercase alphabetic, "a" thru "k" respectively.
4.0	10/10/2003	• Updated Section 1 to reflect the data feed enhancements planned for in 2004. • Modified 2.1 – Interface Protocol: with the 2004 projected bandwidth allocations. • Revised Sections 4.0 and–10.0 - to reflect the change to an 8-byte message sequence number and the addition of a one-byte reserved field to the message header format. • Modified section 4.2, 5.1.3, 5.1.4, 6.0 and 7.0 of the document for the trade correction and trade cancel/error messages. Introduced new Trade Correction Message (Category T – Type R) and new Trade Cancel/Error Message (Category T – Type X). Upon implementation of SIP 4.0 the existing Trade Correction (Category T – Type T) and Trade cancel/Error (Category T – Type D) messages will no longer be supported. • Added Section 5.2.5 – Total Consolidated Volume Report (Category V – Type M). This new message is part of SIP 4.0 and will replace the existing Volume Message (Category V – Type C). • Replaced Appendix H – Test Cycle Messages: Replaced all messages with the new message header format and new message types.
4.0a	10/31/2003	• Modified the following sections of the document to reflect the new logical data breakdown for UTDF service: 1.2.1; 2.1; 2.2 and 3.2.
4.0b	11/26/2003	• Modified Appendix C (UTDF Transmission Schedule) to reflect that the Market Center Originator ID field should be "Q" for the End of Consolidated Last Sale Eligibility (Category C – Type S) control message.
4.1	4/07/2004	• Updated reference to the MCI managed network throughout the document to reflect the name change. As of March 2004, the new network name is the MCI Financial Extranet (MFx). • Removed reference to outdated UTDF bandwidth allocations and IP addressing as a result of SIP 4.0 implementation. • Added Section 9.1.1 – IPO Message Text. At the request of market data vendors, NASDAQ Market Operations has defined standard language for administrative messages used to relay IPO data.
5.0	6/4/2004	• Updated Section 1 to reflect the data feed enhancements planned for in the third quarter 2004 • Revised Section – 4.0 - Removed reference to the 20-byte message header that is no longer supported.

Appendix

Version	Date	Description of Documentation Change(s)
		• Removed reference to Trade related messages no longer supported (Category T – Types T & D) throughout the document. • Modified the Trading Action Message (Category A – Type H) to allow for the reason code to be populated • Modified Section 7 to define reason code, currently a reserved field in the trading action message. • Modified Section 8.5.1 Sale Condition. Add conditions "Q", "U", and modify the market center and consolidated statistical affect on transactions that include "W." • Modified Section – 9.2 - the processing rules for Trading Action Message to allow for reason code. • Added the new Non-Regulatory Market Center Action message (Category A – Type K) to sections 4.2, 5.2.3 and 9.5. • Revised Appendix C to reflect the new Non-Regulatory Market Center Action Message.
5.1	12/20/2004	• Consolidated the Interface and Transmission Protocol sections. • Renumbered and repaginated document as necessary. • Updated section 1.3 (connectivity options) to reflect that Radianz, SAVVIS, and TNS now support NASDAQ data feed products. Added a link to the website for current extranet providers.
6.0	01/07/2005	• Added Section 1.2.1 detailing SIP 6.0 enhancements. • Added the new Market Center Identifiers for New York Stock Exchange ("N") and Chicago Board Options Exchange ("W") to section 3.6. Section 6.0 and 7.4.1. • Modified the Operational Hours to reflect new SIP hours of 04:00 ET till 18:30 ET.
6.0a	03/04/2005	• Modified Section 1.2.1 to include SIP 6.0a enhancements. • Modified Section 3.2 to add Issue Symbol Directory (Category A – Type B) message as an allowable Administrative Message. • Added new Issue Symbol Directory Message to Sections 4.2 and 8.6. • Modified Sections 5.0 and 6.0 to include the new field values within the Issue Symbol Directory Message. • Added Issue Symbol Directory Message to Appendix C.
6.1	05/09/2005	• Modified Section 8.1.1 IPO Message text to reflect the current standardized format in use.
6.2	06/01/2005	• Corrected the byte size for Issue Symbol and Old Issue Symbol within the Issue Symbol Directory message for section 4.2. This value was listed as 5 and should be 11.
7.0	08/12/2005	• Modified Section 1.2.1 to reflect SIP Enhancement Release 7.0 o Details the new message header change to milliseconds o Details the new Sale Condition Modifier – Yellow Flag (.Y) • Modified Sections 3.0 and 3.7 to reflect the new message header changes for the provisioning of milliseconds. • Added reference in appropriate sections throughout the document detailing the new ".Y" sale condition.
8.0	10/28/2005	• Added Section 1.2.2 detailing SIP 8.0 enhancements. • Added the new Market Center Originator ID's for International Securities Exchange ("I") and The Trade Reporting Facility LLC ("L") to sections 3.6, 6.0, and 7.4.1. • Added Section 1.2.3 to document the Name Change for the NASDAQ SmallCap Market to the NASDAQ Capital Market.
8.0a	02/06/2006	• Updated Section 1.2 – Upcoming Initiatives section to reflect data feed changes to be implemented in 1st Quarter 2006. • Modified document to reflect the message processing rules for the new

Appendix

Version	Date	Description of Documentation Change(s)

		IPO halt opening process:
		  o Added IPO/Halt opening process to the upcoming initiatives.
		  o Modified the Trading Action sections to reflect the new Action and Reason Code values to be introduced as part of the IPO halt opening process.
		      ▪ Added new Reason Codes for IPO positioning window extensions to section 6.0
		• Revised the message processing guidelines in Section 8.2 to reflect new IPO Opening process.

9.0	03/17/2006	• Modified Section 1.2 – to reflect Enhancement 9.0
		  o Revised Section 3.8 to reflect the new field name of Sub-Market Center Identifier. Also added definition of field value.
		  o Added Section 7.8 to provide processing guidance for the new Sub-Market Center Identifier.
		• Added Section 1.2.3 on New NASDAQ Listed Symbology to take effect January 31, 2007.

9.0a	4/01/2006	• Revised Section 1.2 to reflect the addition of the new NASDAQ Market Tier Segmentation initiative for July 1, 2006.
		• Modified Market Category Values within Section 6.0 to reflect the new market categories supported July 2006.
		  o Q = NASDAQ Global Select Market
		  o G = NASDAQ Global Market
		• S = NASDAQ Capital Market

9.0b	6/19/2006	• Modified the Operational Hours to reflect new SIP hours of 04:00 ET till 20:00 ET, tentatively scheduled for July 17, 2006. • Added weekend test language to section 10 to reflect the new Saturday Stress test policy. • Removed reference of NQDS as a UTP Plan governed data feed. • Made notation of removal of test cycle messages with the implementation of the new operational hours.

10.0	09/01/2006	• Trade Modifier "O" is being redefined and new update rules are being introduced for this sale condition.
		• Modified Section 1.2 to reflect the SEC Regulation NMS changes for trade through exemption and new 4 byte trade modifier format.
		• Modified Section 3.2 to include the new Trade Message Types that will be supported with the Reg NMS changes.
		• Modified Section 3.8 to include allowable vales for each market participants TRF facility sub market center ID.
		• Added the following message formats that will replace the existing messages with the implementation of Reg NMS Changes:
		  o 4.1.2.1 New Long Form Trade Report Message
		  o 4.1.3.1 New Trade Correction Message
		  o 4.1.4.1 New Trade Cancel/Error Message
		• Added the Prior Day As-Of Message to section 4.1.5
		• Modified sections 5.0 and 6.0 to reflect the Reg NMS changes.
		• Added Processing Guidelines to section 7.5.1 for Sale Condition processing.
		• Modified section 7.8.1 to include allowable vales for each market participants TRF facility sub market center ID's.
		• Added Section 7.9 Prior Day As-Of Processing
		• Added new values to Appendix B - Glossary of Terms for Reg NMS changes.
		• Modified Appendix C1 and C2 to reflect the new allowable message types.

10.0a	10/12/2006	• Added to section 1.2.1 a link to Reg NMS Trade Matrix as a reference document.

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Version	Date	Description of Documentation Change(s)
		• Removed sale condition Next Day "N" from byte 4 of the sale condition matrix. This should allowable in byte 1 only.
		• Removed <space> as an allowable value for byte 1 of the sale condition matrix.
		• Modified section 4.1.5 the Prior Day As-Of Message to reflect a date and time field instead of date only. Added one byte to the message in the date/time field.
		• Added to section 7.9 for As-Of processing additional language on how to handle As-Of transactions.
		• Revised the Sale Condition update rules for derivatively priced condition "4". Value will update High/Low.
		• Removed the Test Cycle Messages Appendix H.
10.1	04/02/2007	• Modified Section 1.2 – to reflect the 2007 Data Feed Enhancements. o 1.2.1 Bandwidth Allocation Changes o 1.2.2 Addition of New York Stock Exchange LLC as a UTP market participant. • Modified document to reflect the increased bandwidth allocations to take effect June 2007. • Removed all message category and types that are no longer supported and updated document to reflect these changes.
10.2	06/13/2007	• Updated Section 1.2 – Upcoming Initiatives section to reflect data feed changes to be implemented in July 2007. o 1.2.1 Modify Trade Processing Rules • 7.5.1.1 Modified scenario B to allow for the NASD's requested changes.
10.2a	06/29/2007	• Updated Section 1.2 – Upcoming Initiatives section to reflect data feed changes to be implemented. o Renumbered: Modify Trade Processing Rules to 1.2.2 o Added new initiative for addition of trade modifiers. • Modified Section 6.0 Field Definitions adding X & H as allowable sale condition modifiers. • Modified Section 7.5 to allow for X & H as allowable sale condition modifiers. • Added new definitions of X & H in Appendix B.
10.3	10/26/2007	• Updated Section 1.2 – Upcoming Initiatives section to reflect data feed changes to be implemented. o Added new CHX initiative for addition of Stock-Option trade modifier. • Modified Section 6.0 Field Definitions adding "V" as allowable sale condition modifier. • Modified Section 7.5 to allow for "V" as allowable sale condition modifiers. • Added new definitions of "V" in Appendix B.
10.4	04/10/2008	• Updated Section 1.2 – Upcoming Initiatives section to reflect data feed changes to be implemented. • Added new Emergency Market Condition control message. o Emergency Market Condition – Quote Resume (Category C – Type R) • Modified the document throughout to reflect the new control message • Removed appendix H that is no longer supported and renamed I to H.
10.4a	04/14/2008	• Updated Section 1.2 – Upcoming Initiatives section to reflect new Bandwidth increase o 1.2.2 Bandwidth Allocation Changes • Modified document to reflect the increased bandwidth allocations to take effect July 2008.

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Version	Date	Description of Documentation Change(s)
10.4b	6/29/2008	• Modified section 2.6 – Retransmission Capability to reflect new email and phone contact information.
10.4c	8/19/2008	• Added the new Market Center Identifier for BATS Exchange Inc ("Z") to sections 3.6, 6.0 and 7.4.1.
10.4d	11/7/2008	• Updated Section 1.2 – Upcoming Initiatives section to reflect new Bandwidth increase o 1.2.1 Bandwidth Allocation Changes o Modified document to reflect the increased bandwidth allocations to take effect January 2009.
11.0	4/17/2009	• Updated section 1.2 – Upcoming Initiatives to reflect the new bandwidth increase and multicast IP changes. • Modified document throughout to reflect the increased bandwidth allocations and addition of new IP multicast addresses, to take effect July 2009.
11.0a	5/14/2009	• Section 2.2.3 of the document revised to reflect the new UTDF IP Addresses. • The UTP SIP was informed that the previously communicated IP Address Groups for the UTP Trade Data Feed (UTDF) extend into a range that is not registered for use by the UTP SIP.
12.0	09/18/2009	• Added the new Market Center Identifiers to sections 3.6, 6.0 and 7.4.1.for: o BATS Y-Exchange Inc. (BATS), ("Y") o EDGA Exchange, Inc. (EDGA), ("J") o EDGX Exchange, Inc. (EDGX), ("K")
12.1	05/17/2010	• Updated Section 1.2 – Upcoming Initiatives section to reflect new Bandwidth increase o 1.2.1 Bandwidth Allocation Changes • Modified document to reflect the increased bandwidth allocations to take effect August 2010.
12.1a	05/25/2010	• Added new allowable reason codes to support the new Single Stock trading pause functionality.
12.1a	07/02/2010	• Revised the definition for the Market Center Trading Action message (Category A – Type K) to remove the term "non-regulatory".
12.b	7/14/2010	• Added new data format and processing rule sections for the Reg SHO Short Sale Price Test Restricted Indicator message to be released on or before November 10, 2010. • Updated Trading Action sections to denote that the Category A – Type H message format is used for trading halts and trading pauses that impact all UTP participants.
12.c	3/18/2011	• Revised Appendix C to reflect the start time for Reg SHO messages from 6:45 to 6:00 AM
12.1d	11/04/2011	• Updated Section 1.2 – Upcoming Initiatives section to reflect: o 1.2.1 Redistribution of Symbols Across UTP Data Channels
13.0	06/12/2012	• Revised the Market Center Identifiers to sections 3.6, 6.0 and 7.4.1.for: o Name change for NYSE AMEX to NYSE MKT ("A") • Added a new "Retail Interest Indicator" to the Long Form Quote Message. • In support of Limit Up-Limit Down, the UTP SIP will: o Introduce a new administrative message to relay Limit Up-Limit Down Price Bands: Category A – Type P message

Appendix

Version	Date	Description of Documentation Change(s)
		format will be calculated and disseminated by the UTP SIP during normal market hours ○ Introduce new UTP Participant Best Bid and Offer (BBO) Quotation message formats, the UTP Participant BBO Short Form Quotation will be identified as Category Q – Type E and the UTP Participant BBO Long Form Quotation will be Category Q – Type F ○ Modify the Trading Action – Cross SRO message format to support new Action and Reason code values associated with Limit Up-Limit Down. • In support of Market Wide Circuit Breaker rule, the UTP SIP will: ○ Introduce a new Market Wide Circuit Breaker Decline Level message (Category A – Type C) to relay the current day's trigger threshold values to UTP market participants. The new message, which will reflect the 7%, 13% and 20% trigger thresholds for the S&P 500, will be disseminated via UQDF, UTDF and OMDF prior to the market open. ○ Introduce a new Market Wide Circuit Breaker Status message (Category A – Type D) to relay when a trigger threshold has been breached. The new message format would be disseminated by the UTP SIP if the S&P 500 Index falls below the trigger points. • Modify the Trading Action – Cross SRO message format to support new Reason codes for Market Wide Circuit Breakers. In the event of a Market Wide Circuit Breaker, The NASDAQ Stock Market will be responsible for sending out Trading Action messages for its listed securities as appropriate. To differentiate market wide circuit breakers from other trading actions, NASDAQ is expected to populate the Reason field in the Trading Action message with a "MWCB" value.
13.0a	06/12/2012	• Minor editorial clean up • Added Appendix A1 to define Market Wide Circuit Breaker Denominator conversion rules for MWCB Decline Level Message (Category A-Type C)
13.0b	08/27/2012	• Modified the Reason Code Values for LULD and MWCB. The following new codes will be supported: ○ LUDP ○ MWC1, MWC2, MWC3, MWCQ • Included additional information related to the implementation dates for each message format. ○ New LULD/MWCB messages will be implemented with the SEC release scheduled for February 2013.
13.0c	10/17/2013	• Modified document to reflect the increased bandwidth allocations to take effect January 2013.
13.0d	01/14/2013	• Added a new reason code for MWCB Halts to reflect when a Level 3 breach is being carried over to the next trading day. ○ MWC0
13.0e	02/22/2013	• Added a new reason code for LULD to reflect when the National Best Bid is less than the lower price band and the National Best Offer is greater than the upper price band. ○ LUDS
13.0f	03/08/2013	• Updated the Transmission Schedule (Appendix C) to account for NASDAQ's Early Market Open: ○ Moved up the Start of Day message time by two minutes. ○ Moved up the start time of Reg SHO Short Sale Price Test Restricted Indicator, Cross SRO Trading Action Messages and Emergency Market Halt/Resume Messages to begin at 04:00.

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Version	Date	Description of Documentation Change(s)
		• Documented the termination of the Emergency Market Control Messages formats that will be retired once the new Market Wide Circuit Breaker changes are implemented on April 8, 2013.
13.1	07/05/2013	• Removed all reference to the Emergency Market Control Messaging • Added the new value for Financial Statue Indicator 　o Creations and/or Redemptions Suspended for Exchange Traded Product ("C") • Added the new allowable trade condition modifiers 　o Corrected Consolidated Close – per listing market (9) 　o Odd Lot Trade (I)
13.2	04/14/2014	• Modified document to reflect the increased bandwidth allocations to take effect June 30, 2014.
14.0	10/13/2014	• Modified Document to reflect the message header change. 　o Modified the SIP TimeStamp from 9 bytes to 6 bytes ASCII base95 　o Added Participant TimeStamp in ASCII base95 　o Added Transaction ID, reserved for SIP use only 　o Revised the LULD Price Band Effective Time
14.1	2/6/2015	• Modified Document to include second Participant TimeStamp • Modified Bandwidth Allocations to accommodate increased Message Header Format
14.1a	2/25/2015	• Modified document to reflect the Sal Condition Modifier changes. 　o Redefine the existing Stock Option Trade (V) modifier 　o Introduce a new Qualified Contingent Trade (7) modifier
14.2	4/22/2015	• Modified Section 3 to reflect the new Timestamp 1 & 2 definitions • Modified document to reflect the increased bandwidth allocations to take effect June 30, 2015.
14.3	7/1/2015	• Updated Issue Symbol Directory (Category A – Type B) message format to support Issue Sub-Type field. • Added definition for Issue Sub-Type field. • Updated values for Issue Type field to match Nasdaq's currently supported codes.
14.4	11/16/2015	• Added the new Market Center Identifier for Investors' Exchange LLC ("V") to section 3.6. Section 6.0 and 7.4.1.

Appendix

Appendix H – Data Quality Contacts

Under the UTP Plan, the SIP will process quotation and trade data from registered UTP participants for all NASDAQ listed securities only. Visit the participant's page on UTPPLAN.com