



**Computer to Computer Interface (CTCI)
Specifications for the
Trade Reporting and Compliance Engine system
(TRACE[®])
Trade Reporting for Over-the-Counter
Corporate Bonds and Agency Debt
(Corporates and Agencies)**

Version 3.4

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1.0 TRACE CTCI INTERFACE

1.1 Introduction

The TRACE System (TRACE) is a service of FINRA that performs two major functions: on-line trade reporting and dissemination. Currently, FINRA members (or their designated third parties) are provided with the capability of submitting trade report information on over the counter corporate bond and agency debt securities through the use of a Computer to Computer Interface (CTCI) linkage. This document describes the format of the message text to be used to interface through the NASDAQ system to the TRACE application.

Effective May 16, 2011, new CTCI message formats were introduced with the expansion of TRACE to accept trade reports of Securitized Products. With the migration of TRACE corporate bond/agency debt trade reporting to the new FINRA technological platform, changes to corporates and agencies CTCI messaging are required to maintain consistencies with the SP message layouts.

Participation in the TRACE system is mandatory for all FINRA firms. CTCI participants are expected to build and update a TRACE image file of their own trades in their interface systems by using the TRACE input and output messages. Participants will be able to enter and correct TRACE trades through their CTCI interfaces during the TRACE reconciliation cycle that consists of T-Day through T-20 entries. Trades that were submitted greater than T-20 are not retained in the TRACE system for trade management purposes but may still be modified using special input message formats designated for such trades. CTCI Participants may request retransmission of acknowledgements of any trade or group of trades to update their TRACE image files during the permissible hours by calling NASDAQ Technical Support at (212) 231-5180.

The Eastern Time operating hours of the TRACE system are as follows:

Market/System open :	8:00 A.M.
Market Close:	5:15 P.M.
System Close:	6:30 P.M.

When a trade is entered into TRACE, a control date and number will be assigned to identify the trade throughout its TRACE processing and a status will be assigned to reflect its processing state. As trades are entered into the system, TRACE will validate trade information, forward proper acknowledgment messages to the Reporting Parties (RP) and Allege messages to the Contra Parties (CP) of the trades. Acknowledgment and Allege messages will contain the terms of the trade, the TRACE assigned status, control date and control number which uniquely identifies each trade. These messages will enable the TRACE CTCI participants to build their own TRACE image files. CTCI participants will utilize the combination of TRACE assigned control date and control number to communicate with the TRACE system for subsequent trade report correction processing. Participants may also modify trades using their own assigned reference numbers (Client Trade Identifier). Trade reports of Corporate Bonds and Agency Debt will be retained in the TRACE system on a rolling 20 business day period inclusive of the day the trade is reported (T-20) and available for subsequent trade management processing (Cancel or Correction). A Cancel or Correction of a previously reported trade submitted prior to the T-20 period is allowed via submission of a Trade Reversal or combination of a Reversal and a new As-of Trade Report. Please see section 3.3 for details concerning the submission of Reversals.

TRACE will forward proper Notification messages to the trading parties as trades are corrected. Each Notification message will contain the control date, control number and the updated status of the corrected trade such that the trading parties will be able to update their TRACE image files.

The above message flow and TRACE image file techniques are applicable to CTCI environments only. A web participant, however, will operate from the Nasdaq TRACE file and will not receive all of the above messages.

The TRACE CTCI specifications are applicable to both the T-day and As-of (T+n) trade reporting process. Any trade executed during or off market hours, which has not been reported during T-day, may be reported to TRACE on T+1 or later on an As-of basis.

A retransmission of TRACE messages may be requested by phone on a current day basis. The following information must be provided as part of the request:

TRACE Day -	TRACE (T-day or T+1 to T+n day) messages.
Message Type -	Specify if only one type (e.g. CAEN). If multiple message types, then all types will be retransmitted.
Start Time -	Start (original send) time for the messages to be retransmitted.
End Time -	End time for the messages to be transmitted.
Possible Dupe -	Specify if possible duplicates are to be included.
Address -	Specify if the retransmission is to be directed to an address other than the regular one(s) (the CTCI I112 specified in the TRACE Firm profile) for these messages. Note: A specified address may not be for a printer.

Note: This facility retransmits the requested messages in their original form. However, when retransmitted, their sequence numbers assigned by NASDAQ will be current, i.e., not a repeat of their originally transmitted numbers.

1.2 CTCI – TCP/IP & MQ Interfaces

A subscriber can submit and receive TRACE *Computer to Computer Interface* (CTCI) messages utilizing NASDAQ Messages through either 1) TCP/IP protocol (preferred method) or 2) IBM *MQSeries* Middleware using *MQSeries* API calls over TCP/IP protocol (Sender/Receiver MQ architecture). For more information on its availability, please contact NASDAQ Technical Support at (212) 231-5180, Option #1 or via email to: tradingservices@nasdaqomx.com.

For questions concerning trade reporting and TRACE, please contact FINRA Product Management at (866) 899-2107 or via email to: FINRAProductManagement@finra.org.

1.3 Document Format

This document has been prepared to facilitate your development of an interface to the TRACE System for Corporate Bond and Agency Debt trade reporting. The sections have been divided to easily identify those messages that will be supported.

Section 1 describes the project and its purpose.

Section 2 defines the header and trailer that will be used for all input messages. It also defines all the fields used in TRACE for Corporates and Agencies.

Section 3 defines the input messages supported for Trade Reporting of Corporates and Agencies.

Section 4 describes general information for output messages generated by TRACE for Corporates and Agencies.

Section 5 describes the output message formats generated by TRACE for Corporates and Agencies.

2.0 INPUT MESSAGE FORMATS

For more detailed input message formats, refer to the CTCI for Trade Reporting Programming Specifications published by NASDAQ on www.nasdaqtrader.com.

Each TRACE input message format requires the same message "envelope" which is composed of three parts:

- I. Header - defines the beginning of the message, origin and destination of the message.
- I. Text - data included are TRACE entries which can be a Trade Entry, Cancel or Correction.
- III. Trailer - defines the end of the message, date/time of the message, control sequence number.

The following notes apply to all of the message formats:

- Note 1:** Required fields must be entered, unless otherwise noted.
- Note 2:** If a field is entered and the field is designated as an alphabetic field, only A-Z can be entered unless otherwise noted. If the field is designated as numeric, only 0-9 can be entered unless otherwise noted. Embedded spaces cannot be entered in alphabetic or numeric fields unless otherwise noted.
- Note 3:** At the end of each line, a line delimiter is required even if no data has been entered on the line. Where the line delimiter has been specified as CR LF (carriage return, line feed) the use of CR is optional. The LF, however must be entered.
- Note 4:** The maximum limit of 1024 characters per message block includes the Header and Trailer.
- Note 5:** Records reported in TRACE for Corporates and Agencies cannot be intermixed with messages pertaining to other NASDAQ or FINRA systems (e.g., TRACE for Securitized Products, MFQS, FINRA/NASDAQ TRF, etc.) in the same block.

2.1 Header

The header consists of four lines. The first line is line 0 and contains the origin of the message. The second line is line 1 and contains the Branch Sequence Number. The third line is line 1a and contains the category and destination of the message. The fourth line is always a blank line:

Line 0: [Origin] <CR/LF>
Line 1: [Br Seq Num] <CR/LF>
Line 1A: [Category] space [Destination] <CR/LF>
Blank Line: <CR/LF>

Line 0

Entry Originator - One to six character Entry Originator ID. This field is optional for firms that are not acting as a service bureau. For firms acting as a service bureau, this field is mandatory and must contain the four character MPID (as assigned by FINRA) of the firm submitted as the Reporting Party (RPID), (i.e., the executing firm entering the Trade Entry, Cancel or Correction).

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CR LF -	Required line delimiter- carriage return, line feed.
<u>Line 1</u>	
Branch Sequence	1-8 character alphanumeric (A-Z, a-z, 0-9, embedded spaces, left justified)
CR LF -	Required line delimiter.
<u>Line 1A</u>	
Category -	This field identifies the message category. Contains the constant "OTHER" for TRACE.
Space -	Required field separator.
Destination -	A required field. Destination Code will be "CA" for all Trade Entry, Cancel, Reversal, and Correction input messages for Corporates and Agencies . The destination Code will route CTCI transactions to TRACE for Corporates and Agencies for processing.
	Note: Wrong assignment of Destination Code will result in an "Invalid Format" reject.
CR, LF -	
CR, LF -	Required line delimiter
<u>Line 2</u>	<i>Text of Trade Entry, Cancel or Correction</i>

2.2 Trailer

The sequence number entered by the user will be validated by NASDAQ to determine if there is a number gap or if the number is equal to or less than a previously received number.

Each station on a service bureau line shall have an individual sequence check. As an example, the first entry for station 1 shall have a sequence number of 0001. Similarly, the first entry from station 2 shall also have a sequence number 0001.

The sequence number provided by the subscriber can be in one of the following formats:

- I. The sequence number immediately precedes the end-of-text code (interposed line feeds are disregarded) and is either: fixed at four digits, zero filled.
Example: 0034
or one to four digits preceded by a "dash"
Example: -34.
- II. The sequence number may appear anywhere on the last line if it is immediately preceded by the letters "OL" (and an optional space).
Example: OL 23 or OL23
A third contiguous alphabetic character is optional.
Example: OLX 23 or OLX23
Fill zeros for high-order digits (e.g., OL 0023) are also optional.
A space is used to separate the sequence number from any following user-defined data.
Example: [user-defined data]OLX 0034[spaceuser-defined data]
- III. A one to four digit sequence number at the beginning of the line, followed by a space and a user-defined character string starting with a non-numeric character. The sequence number can be zero filled if desired.

Example: **34spaceAXD**

or: **0034space/200008041717**

The remainder of the field may also be used to include user identifiers such as date/time group.

Example: 0012 /120179011

2.3 TRACE Transaction Text

Trade Entry	(Function T) All original T-day and T+n (As-Of) trades will be entered into the TRACE System using this message format. A Reporting Party (RP) Trade Entry will be processed for trade reporting.
Cancel Entry	(Function X) - for cancelling T-day through T-20 submissions (Function Y) - <u>Reversals - for cancelling trades submitted prior to T-20</u> The RP reports a Cancel entry for a previously entered trade but for whatever reason decides to cancel.
Correction Entry	(Function R) - <u>for correcting T-day through T-20 submissions</u> The RP reports a Correction to a previously entered trade that was incorrect.

Note: In order to correct a trade submitted prior to T-20, firms are required to submit a Reversal (Function Y), followed by a new As-Of Trade Report (Function T) that contains the correct trade details.

2.4 Text Field Definitions

The following contains the general definitions for all fields that are contained within the TRACE for Corporates and Agencies (CA) Transaction text. Any specific information that is relevant to a particular transaction type can be found in the description of the transaction. In addition, these definitions apply to both TRACE CA Input transactions and TRACE CA Output messages.

Function	This field is required. Valid values are: T = Trade Entry X = Cancel Entry (same day through T-20) Y = Reversal Entry (greater than T-20) R = Correction Entry (same day through T-20)
Special Processing Flag	This field allows a trade to be marked for special processing. Under certain conditions, use of this field for special processing purposes MUST be authorized by FINRA Operations prior to submission of trades. Authorization will be granted on a trade by trade basis. Valid values are: <i>Blank</i> = No special processing P = Position Transfer (AUTHORIZATION REQUIRED). A = Affiliate – principal transaction indication Note: As defined in FINRA Rule 6730 (d)(4)(E), the affiliate principal transaction indication should be used where a member purchases or sells a security and, within the same trading day, engages in a back-to-back trade with its non-member affiliate in the same security at the same price (without a mark-up or commission assessed). This will suppress the trade

	from dissemination.
B/S Indicator (aka Buy/Sell Indicator)	A required one alpha character which shall equal one of the following: B = reporting firm (i.e., RP) bought S = reporting firm sold
Client Trade Identifier <i>aka User Reference Number</i>	A twenty alphanumeric character field, left justified, fill unused positions with spaces. Optionally, the subscriber may assign this Reference Number as a unique identifier to each trade. Subscribers may also use the Client Trade Identifier, in lieu of the TRACE Control Number, to Cancel or Correct previously entered trades within the T-20 period (TRACE Control Date is still required if Client Trade Identifier is used). The TRACE System will not validate this field; therefore firms are required to ensure uniqueness of their own Client Trade Identifiers submitted within a given day. In the event a firm submits duplicate Identifiers on different trade reports within a given day and chooses to modify (Cancel or Correct) a trade using this reference number, TRACE will reject the Cancel/Correct submission and the firm will be required to modify using the TRACE generated Control Number. TRACE will always return the subscriber entered Client Trade Identifier in the acknowledgment message (i.e., CAEN) associated with the trade to the submitter and will space fill this field in the allege message (i.e., CAAL) to the contra party of the trade.
Contra Client Trade Identifier	User defined trade reference number for the Contra side of the trade. Optional, may only be used on Locked-In trade reports. Please note, the Contra Client Trade Identifier cannot be used for cancelling or correcting previously submitted trades.
Quantity	Dollar (Face Value) amount of the trade. Units (i.e., number of bonds) <u>are not applicable</u>. For Equity Linked Notes (ELNs), multiply the number of shares by the price in order to report the Quantity as a dollar amount (Price must still be reported separately). Format 11v2. Required field.
Symbol	An optional field. Up to fourteen alphanumeric character security identifier assigned by FINRA. <u>Each transaction must contain either the Symbol or CUSIP to identify the security.</u> Left justified. Fill unused positions with spaces. Please note: Symbol CANNOT be changed on a correction. In order to change the security on a previously submitted trade report, firms must cancel the original trade and submit a new trade with the correct Symbol.
CUSIP	An optional field. The nine digit alphanumeric code assigned to the security by the CUSIP Service Bureau. <u>Each transaction must contain either the Symbol or CUSIP to identify the security.</u> Please note: CUSIP CANNOT be changed on a correction. In order to change the security on a previously submitted trade report, firms must cancel the original trade and submit a new trade with the correct CUSIP.

Price	A required field which indicates the reportable price of the trade. Reported as a percentage of face value or par (including decimals). For ELNs, price is reported as a dollar amount (price per share). Price must include markup/markdown, when applicable. Price will be reported in a 9(4) v 9(6) format.
Price Override	A one character field that is used to indicate that the entered price is valid although it may fall outside the reasonability check made by the system. The override should not be used on initial submission; only after a trade report has been rejected for having a price that is considered out of range. The alpha character "O" = price override, otherwise the field must be blank on initial submissions.
Seller's Commission	Dollar Amount charged as commission by the seller. Required when commission is charged on a sell trade. Otherwise, the field may be left blank. Format 6v2.
Buyer's Commission	Dollar Amount charged as commission by the buyer. Required when commission is charged on a buy trade. Otherwise, the field may be left blank. Format 6v2.
Trade Modifier 1	This field shall be blank for TRACE trade report input and may be reserved for future use.
Trade Modifier 2	This field shall be blank for TRACE trade report input and may be reserved for future use.
Trade Modifier 3	Extended hours/Late sale conditions. System generated on the outbound acknowledgement. Field must be blank for all input messages. Values: <i>Blank</i> = no system generated modifier T = Trades reported after market hours U = Trades reported after market hours and reported late Z = Trades reported during market hours and reported late
Trade Modifier 4	Required modifier if a trade is executed under the following condition: W = Weighted Average Price If a trade does not meet the above condition, then this field must be left blank.
Contra Party ID (CPID)	Required. A four alpha character field denoting the MPID of the Contra Party to the trade. If the Contra party is a customer, "C " may be reported as a valid entry (left justified, space-fill remaining 3 bytes). Contra of "C" is only valid when the transaction is entered by the reporting party. However, FINRA member firms cannot qualify each other as a customer. If the Contra party is a non-member affiliate, "A " may be reported as a valid entry (left justified, space-fill remaining 3 bytes). An affiliate is a non-member entity that controls, is controlled by or is under common control with a FINRA member, as further defined under FINRA Rule 6710.
Contra Party Give Up	The MPID of the Contra Party Give Up Firm, when applicable. This field

(CPGU)	can only be filled when the Reporting Firm submits the trade as a Locked-In trade report (RPID = CPID; Locked-In Indicator = Y). On non-Locked-In trade reports, the field must be blank. A TRACE Service Bureau/Executing Broker Supplement (Attachment B of the TRACE Participation Agreement) must be in place in order for firms to submit trade reports on behalf of their give ups. Customer ("C") cannot be entered as a give up.
Contra Clearing Number	Used to identify the clearing broker who will clear this trade for the Contra Party (note: trades reported to TRACE will not be sent to NSCC for clearing). • If a value is entered, TRACE will validate that it is a valid NSCC Clearing ID. • If no value is entered (left blank), TRACE will accept the trade without a Clearing ID. This field can only be filled when the Reporting Firm submits the trade as a Locked-In trade report. On non-Locked-In trade reports, the field must be blank.
Contra Party Capacity	A one character Capacity Indicator field for the contra firm. It denotes whether the firm is acting as "P" for principal or "A" for agent for this trade. This field is required only when the Reporting Firm submits the trade as a Locked-In trade report. On non-Locked-In trade reports, the field must be blank.
Reporting Party ID (RPID)	Required. A four alpha character field denoting the MPID of the Reporting Party of the trade.
Reporting Party Give Up (RPGU)	The MPID of the Reporting Party Give Up Firm, when applicable. Customer ("C") cannot be entered as a give up. A TRACE Service Bureau/Executing Broker Supplement (Attachment B of the TRACE Participation Agreement) must be in place in order for firms to submit trade reports on behalf of their give ups.
Reporting Clearing Number	This field is an optional field. It is used to identify the clearing broker who will clear this trade for the Reporting Party (note: trades reported to TRACE will not be sent to NSCC for clearing). • If a value is entered, TRACE will validate that it is a valid NSCC Clearing ID. • If no value is entered (left blank), TRACE will accept the trade without a Clearing ID.
Reporting Party Capacity	Required field. A one character Capacity Indicator field for the reporting firm. It denotes whether the firm is acting as "P" for principal or "A" for agent for this trade. A value must be submitted in this field.
As-Of Indicator	This field is used to denote whether the trade is an As-Of trade entry, or a cancel or correction of an As-Of trade. Valid values are: Blank = T-Day trade Y = As-Of (T+n) trade Note: "Y" is required on all Reversals. "Y" is required on Corrections of T-1 through T-20 submissions and T-day submissions originally submitted as an As-Of trade. For Corrections of non-As-Of T-day submissions, this field

	must be space-filled.
Execution Date	The date that the transaction was executed (<i>aka Trade Date</i>). For an As-of trade (As-Of Indicator = Y), the date must be T-1 or older. The format is MMDDYYYY. For regular trades (not As-of), this field must be blank. To cancel or correct a prior day trade, Execution Date must be submitted. Note 1: TRACE for Corporates and Agencies allows reporting trades that were executed on a non-business day (e.g., weekend, holiday). Firms may enter the non-business day date in the Execution Date field and must set the As-Of Indicator to “Y”. Note 2: On non-As-Of trades, the Execution Date cannot be changed on a Correction submission to a different date than what was originally submitted. Firms would be required to Cancel the original trade and resubmit a new Trade Report with the intended Execution Date. On As-Of trades, the Execution Date can be changed only to a date prior to the original execution date. The Execution Date cannot be changed to a date that is subsequent to the original execution date. In the case of the latter, firms would be required to Cancel the original trade and resubmit a new As-Of Trade Report with the intended Execution Date.
Trading Market Indicator	Used to indicate whether the reported trade was executed in the secondary market or in the primary market. Please note, secondary market trades and primary market trades that execute at market prices are subject to 15 minute reporting. Primary market trades such as List or Fixed Offering Price transactions or Takedown transactions are reportable by close of business of the day following the day of execution (T+1). For more guidance, please refer to the following Regulatory Notice: http://www.finra.org/Industry/Regulation/Notices/2009/P120040 Required Field. Valid values for this field: S1 = Indicates a secondary market trade, or a primary market trade executed at a market price. P1 = Indicates a primary market List or Fixed Offering Price transaction or a Takedown transaction. Please note: 1) P1 trades are reportable on a T+1 basis, i.e., firms have until the end of the following business day from the first day of trading to report such trades.
Execution Time	This is a required field. A field denoting the time of execution in military time (HHMMSS) format where HH represents hours, MM represents minutes and SS represents seconds. For example, if the trade was executed at 2:03:02p.m., the entry will be 140302. Execution Time must be entered in Eastern Time. This is a required field for all transactions submitted into TRACE. Please note hours (HH) and minutes (MM) are required, however firms may default seconds (SS) to zeros (example 140300).
Memo	An optional ten character alphanumeric memo field. Fill unused positions with spaces. This field is not displayed to the Contra party.

Special Price Indicator	This field may contain the following entries: Y = The transaction was intentionally executed at a price not related to the current market. Not to be used for things like long or short settlement or average price trades, rather it is to be used when trading specified. <i>Blank</i> = Transaction price not special. If this field is used, the Special Price Reason field must be used. “Y” must be entered in this field if text is entered into the Special Price Reason field.
Special Price Reason	A fifty character alphanumeric subscriber Memo field. This field must be used when the Special Price Indicator has been selected to describe the reason why the trade was executed at a special price. Fill unused positions with spaces. This field may be displayed to the Contra party.
Branch Sequence	An optional eight (8) alphanumeric character field, (A-Z, 0-9 embedded spaces, left justified, pad with trailing spaces), to indicate the reporting firm’s branch office. The Branch Sequence Number entered in this field must be the same as the Branch Sequence Number submitted in Line 1 of the message Header.
Contra Branch Sequence	An optional eight (8) alphanumeric character field, (A-Z, 0-9 embedded spaces, left justified, pad with trailing spaces), to indicate the contra firm’s branch office. This field can only be filled when the Reporting Firm submits the trade as a Locked-In trade report. On non-Locked-In trade reports, the field must be blank.
Settlement Date	Required on all transactions. Date when the trade settles. MMDDYYYY format.
Locked-In Indicator <i>formerly Automatic Give UP (AGU) Indicator</i>	Y or blank. Y indicates that the reporting party entering the trade report is reporting for both sides of the trade in a single trade report, thereby satisfying both sides’ reporting requirement. Firms may use the Locked-In Indicator when a firm trades with one of its correspondents (one-sided Locked-In trade), or when a firm reports a trade executed between two of its correspondents (two-sided Locked-In trade). A correspondent must be a FINRA member and is entered under one or both Give Up fields (on two-sided Locked-In trades). The reporting party’s MPID must be the same on the RPID and CPID fields. A TRACE Service Bureau/Executing Broker Supplement (Attachment B of the TRACE Participation Agreement) must be in place in order for firms to submit trade reports on behalf of their give ups. Note: On Locked-In trade reports, the RPID must be the same as the CPID. A Locked-In trade report MUST be submitted as a Sell (B/S Indicator = “S”), therefore the trade report must be from the Seller’s perspective.
Preparation Time	Time of Trade submission in HHMMSS format. Denotes the time the submitter prepared the trade report or trade correction (in military Eastern

	Time format). Optional.
Control Date	When a trade is submitted to TRACE and accepted, the system will return a Control Date with the trade acknowledgement. The Control Date reflects the date when the system received and processed the trade entry. Control Date, in combination with Control Number, is required in subsequent trade cancel and correction messages to modify a trade report. Firms that elect to use their Client Trade Identifier to Cancel or Correct a trade (within the T-20 period) must still submit the Control Date assigned to the original trade report. Trade corrections will receive a new Control Date/Control Number trade identifier.
Control Number	When a trade is submitted to TRACE and accepted, the system will assign a Control Number which will be returned on the trade acknowledgement. The Control Number is a 10 digit identifier of the trade, which will be unique throughout the day. Control Date, in combination with Control Number, is required in subsequent trade cancel and correction messages to modify a trade report. Trade corrections will receive a new Control Date/Control Number trade identifier.
No Remuneration Indicator	As outlined in FINRA Rule Filing SR-FINRA-2015-026, this field indicates whether compensation in the form of a mark-up, mark-down or commission is included in the price. N = The transaction does not include remuneration (mark-up/down or commission). ␣ (blank) = indicates the transaction does include remuneration (a mark-up/down or commission). Note: Use/entry of this field is only supported for Customer and Affiliate trades (CPID = “C” or “A”) and is not allowed on Inter-dealer trades. In addition, Primary market trades, (Trading Market Indicator = “P1”) cannot be submitted with the value “N” in this field. For Inter-dealer and Primary Market trades, the field must always be blank.
ATS Execution MPID	In FINRA Rule Filing SR-FINRA-2015-055 , FINRA Rule 6700 series was amended to provide exemptive relief to Alternative Trading Systems (“ATs”) for the reporting of certain transactions (“exempted transactions”) to TRACE, provided the FINRA members that are party to these transactions report them to TRACE and identify the ATs on which said transactions were executed. To identify the Alternative Trading System (ATS) on which an exempted transaction was executed, the 4-character MPID of the ATS must be entered in this field, otherwise the field must be blank.

2.5 TRACE Message Types by Function

TRACE output messages are sent to the Reporting and Contra Party firms as verification for each TRACE transaction. The following table shows the output messages sent to the Reporting and Contra Parties as categorized by Function.

Input Message Type	Function Code	Reporting Party Confirmation Message Sent	Contra Party Confirmation Sent
Trade Entry	T	CAEN	CAAL
Cancel	X	CACX	CACX
Reversal	Y	CAHX	CAHX
Correction	R	CACR	CACR

Note: on a trade where the contra party (CPID) is subsequently amended to a different contra party via a Correction, the original contra party will receive a Cancel acknowledgement (CACX or CAHX) and the new contra party will receive a Trade Entry Allege acknowledgement (CAAL).

3.0 TRADE REPORTING INPUT MESSAGES

3.1 *RP Corporates and Agencies Trade Entry*

The Reporting Party will use this message to enter an original T Date or an As-Of Trade Entry into the TRACE System. A trade reportable Trade Entry will be processed if it satisfies the trade report requirement.

The RP Trade Entry may generate the following output message flow:

- o Reject message (refer to Section 4.2)
If a TRACE Trade Entry is rejected for any reason, the current reject message containing the reject reason and the echo of the trade will be returned to the entering RP. The maximum size of a reject reason is 75 bytes.
- o CAEN (refer to Section 5.1.1)
If a TRACE Trade Entry is accepted, a CAEN Acknowledgment message containing the TRACE “T” for trade reporting status, Control Date, Control Number, and the echo of the trade will be returned to the RP. The entering firm may use this message to build the initial trade record in its image file.
- o CAAL (refer to Section 5.2.1)
If a TRACE Trade Entry is accepted, a CAAL Allege message containing the same contents as the CAEN will be forwarded to the contra side of the trade. The contra may use this message to build the initial trade record in its image file.

The following table displays the TRACE Function T Trade Entry message format for Corporates and Agencies.

Exhibit 3.1 TRACE CORPORATES AND AGENCIES TRADE ENTRY MESSAGE FORMAT

Field Name	Position	Format	Contents/Comments
Line 2			
Function	1-1	X(1)	T = RP Trade Entry. Required.
Special Processing Flag	2-2	X(1)	Used for special processing purposes, authorization required from FINRA prior to submission on trade reports (where noted). b (blank) = no special processing P = Position transfer (authorization required) A = Affiliate – principal transaction indication
B/S Indicator	3-3	X(1)	B = Bought; S = Sold. Required.
Client Trade Identifier	4-23	X(20)	User assigned reference number, not validated for uniqueness by system. Optional.
Contra Client Trade Identifier	24-43	X(20)	User defined trade reference number on the contra side, used on Locked-In trade reports only. Optional.
Quantity	44-56	9(13)	Dollar amount of the trade. Format 11v2. Required.
Symbol	57-70	X(14)	TRACE issue symbol. Optional. Either Symbol or CUSIP must be provided on each transaction.
CUSIP	71-79	X(9)	CUSIP of the security. Optional. Either Symbol or CUSIP must be provided on each transaction.
Price	80-89	9(10)	Numeric Field, Price at which security traded. Format 4v6. Required.
Price Override	90-90	X(1)	O = Override; b (blank) = No Override
Seller's Commission	91-98	9(8)	Dollar amount charged as commission by the seller. Format 6v2. Required if the Reporting Party charged commission (on a Sell trade), otherwise blank.
Buyer's Commission	99-106	9(8)	Dollar amount charged as commission by the buyer. Format 6v2. Required if the Reporting Party charged commission (on a Buy trade), otherwise blank.
No Remuneration Indicator	107-107	X(1)	Indicates whether compensation in the form of mark-up, mark-down or commission is included in the price. N = The transaction does not include remuneration (mark-up/down or commission). b (blank) = indicates the transaction does include remuneration (a mark-up/down or commission). Please refer to full definition/rules of this field in Section 2.4.
ATS Execution MPID	108-111	X(4)	Used to identify the Alternative Trading System (ATS) on which an exempted transaction was executed. In such cases, enter the 4-character MPID of the ATS; otherwise this field must be blank. Please refer to full definition/rules of this field in Section 2.4.
Filler	112-122	X(11)	Space filled, reserved for future use.
Trade Modifier 1	123-123	X(1)	Reserved for future use. Must be blank on input.
Trade Modifier 2	124-124	X(1)	Reserved for future use. Must be blank on input.
Trade Modifier 3	125-125	X(1)	Extended hours/Late sale conditions. System generated on

Field Name	Position	Format	Contents/Comments
			the outbound acknowledgements. Input must be blank.
Trade Modifier 4	126-126	X(1)	Required indicator if a trade falls under one of the following transaction types: W = Weighted Average Price Otherwise, the field must be blank if none of the above apply.
Filler	127-136	X(10)	Space filled, reserved for future use.
CPID	137-140	X(4)	MPID of the Contra Party or 'C' for Customer or 'A' for Affiliate. Required.
CPGU	141-144	X(4)	MPID of the Contra Party Give Up. Required when there is a give up involved on the contra side of the trade (may only be submitted on a Locked-In trade report).
Contra Clearing Number	145-148	9(4)	Contra Party's clearing number, or b (blank). Optional, may only be submitted on a Locked-In trade report.
Contra Party Capacity	149-149	X(1)	P = Principal, A = Agent. Required only for Locked-In trade reports. Space-fill on non-Locked-In trades.
RPID	150-153	X(4)	MPID of the Reporting Party. Required.
RPGU	154-157	X(4)	MPID of the Reporting Party's Give Up. Required when applicable.
Reporting Clearing Number	158-161	9(4)	Reporting Party clearing number, or b(blank). Optional.
Reporting Party Capacity	162-162	X(1)	P = Principal, A = Agent. Required.
Trading Market Indicator	163-164	X(2)	Required. Indicates whether the trade was executed in the primary or secondary market (please refer to full definition of this field in Section 2.4). Valid values are: P1 = Primary market trade subject to T+1 reporting. S1 = Secondary market or primary market trade subject to 15-minute reporting.
As-Of Indicator	165-165	X(1)	Y = As-Of trade (T+n); b (blank) = T-Date entry
Execution Date	166-173	9(8)	MMDDYYYY format. If left blank, this indicates current day trade. If a date other than the current date is entered (and is prior to the current date), the trade must be marked as an As-Of trade (As-Of Indicator = Y).
Execution Time	174-179	9(6)	Execution Time in HHMMSS format. Required.
Filler	180-182	X(3)	Reserved for future use. Space-fill on input.
Memo	183-192	X(10)	User Memo (Will not be displayed to Contra party) Optional.
Special Price Indicator	193-193	X(1)	Y=Special Price, b (blank) = Not Special Price.
Special Price Reason	194-243	X(50)	User Memo indicating reason for Special Price (may be displayed to Contra party), Required when the Special Price Indicator (Y) is submitted.
Branch Sequence	244-251	X(8)	Optional field, 8 alphanumeric.
Contra Branch Sequence	252-259	X(8)	Optional field, 8 alphanumeric (can only be submitted on Locked-In trade reports).
Settlement Date	260-267	9(8)	MMDDYYYY format; Required for all transactions.
Filler	268-279	X(12)	Reserved for future use. Space-fill on input.
Locked-In Indicator	280-280	X(1)	Y or b (blank). Y indicates that the firm entering the trade is reporting for both sides of the trade. This occurs when two of its give-ups trade with each other or the firm trades

Field Name	Position	Format	Contents/Comments
			with one of its own give-ups. Locked-In trades must be submitted as Sells (B/S Indicator = "S").
Preparation Time	281-286	9(6)	Time of trade submission in HHMMSS format. Optional.
Reserved	287-296	X(10)	space filled, future use.
CR LF			Carriage Return, Line Feed

How to Report Agent Capacity Transactions

In order to capture a complete audit trail for regulatory use, agent capacity transactions need to be reported in the same way that principal capacity transactions are reported. What this means is that if your firm acts as agent for your customer, the trade reports you must submit will “look” like you stood between your customer and the contra party.

For example, Firm XYZ receives an order from a customer to sell \$10,000 of a corporate bond. Acting as the customer’s agent, XYZ sells the security to ABC. Although, technically the customer sold the security to ABC with XYZ acting as their agent, the reports from XYZ would be made as follows:

Report #1: XYZ BUY 10,000 ABS from C as Agent @ 98 and charged \$50 commission

Report #2: XYZ SELL 10,000 ABS to ABC as Agent @98.

Notice that even though XYZ SOLD the security FOR their customer, they actually reported a BUY FROM the customer, followed by a SELL TO ABC. This is how a principal trade would be reported as well. Be aware that the trade tickets your firm generates for agent trades will most likely be different from the report you must submit. In the example above, you would probably have only a single SELL ticket, showing the customer vs. ABC, yet in TRACE you are reporting a BUY FROM the customer, followed by a SELL TO ABC.

Give-Up Trades and Locked-In Trades

A “Give-Up” trade report is reported by one FINRA Member on behalf of another FINRA Member who had a reporting responsibility. In order to do this, an executed TRACE Service Bureau/Executing Broker Supplement (Attachment B of the TRACE Participation Agreement) is required for every firm for which the reporting firm will submit. A simple example of a Give-Up Trade would be a clearing firm that reports on behalf of its correspondent firms. The clearing firm reports the trade, entering the clearing firm’s MPID in the Reporting Party ID (RPID) field, and enters the MPID of the correspondent in the Reporting Party Give Up field (RPGU). The trade report will be considered to have come from the correspondent for regulatory and billing purposes.

Alternative Trading Systems (ATs) and Electronic Communications Networks (ECNs), and even clearing firms have the ability to match buy and sell orders, and create “locked-in” executions ready for settlement that require no further comparison by the involved parties. TRACE does not forward trade reports to NSCC for settlement, however for the purposes of satisfying the FINRA Rules that require both sides of a trade to report their transaction to TRACE, a “locked-in” feature is provided that allows authorized firms to comply with the Rule.

ATs and ECNs that are FINRA members (as opposed to those registered as an exchange) have the ability to report on behalf of multiple parties using a single trade report to TRACE and indicate that the trade is “locked-in” by using the Locked-In Indicator and entering both an RPGU and a CPGU. A clearing firm that executes a trade with one of its correspondents can likewise submit a “locked-in” trade, which covers both sides’ reporting requirement. In order to submit locked-in trades, the same TRACE Service Bureau/Executing Broker Supplement agreements are required for every firm for which the AT/ECN or clearing firm will submit trade reports. Depending on the scenario, a “One-sided” or “Two-sided” Lock-In can be submitted.

See the chart below for an explanation of how to report Give-Up and Locked-In trade reports.

Scenario 1	How To Report
<i>Simple Give-Up</i> Clearing firm just reporting a trade for one of its correspondents.	• The clearing firm enters their own MPID in the RPID field, and the MPID of the correspondent in the “RPGU” field. • The clearing firm enters the MPID of the contra party in the CPID field. • Marks the trade as a Buy or Sell, based on whether the correspondent firm bought or sold. • Marks the P/A indicator as either Principal or Agent, depending on what capacity the correspondent acted. • Enters all other data that applied to the correspondent’s trade. • The Locked-In Indicator must be left blank.

FINRA will expect the contra party to submit their version of the trade to TRACE, identifying the correspondent as their CPID (unless the correspondent traded with a non-FINRA member, i.e., customer trade).

Scenario 2	How To Report
<i>One-sided Lock-In</i> A clearing firm executes a trade with one of its correspondents, creating a “locked-in” trade with the correspondent. OR A FINRA member ATS/ECN matches a Buy and a Sell order from FINRA member firms using its system which causes two executions to occur, and creates two “locked-in” trades. Each counterparty knows the ATS/ECN as its contra, i.e., the ATS/ECN provides anonymity through settlement. Two Locked-In trades would be reported.	• The clearing firm (or ATS/ECN) enters its own MPID in both the RPID and the CPID fields (which makes it look like the clearing firm or ATS/ECN is trading with itself). • Marks the trade as a Sell, always reporting the trade information from the Seller’s perspective. • Puts the MPID of the correspondent in the proper Give Up field, depending on whether the correspondent is the seller or buyer in the trade (e.g., if the correspondent is the seller, then the correspondent’s MPID is entered in the RPGU. If the correspondent is the buyer, then the correspondent’s MPID is entered in the CPGU). • Marks the capacity indicators for both itself and the correspondent. Since a Locked-In trade must always be reported as a Sell, if the clearing firm Sold, then the clearing firm marks its capacity in the Reporting Party Capacity field and the correspondent’s capacity in the Contra Party Capacity field. • Enters all other trade data. • Sets the Locked-In Indicator to Y.

Although the One-sided Locked-In trade report is submitted as a Sell, it satisfies both sides’ trade reporting requirement. Therefore a Buy trade report is not required.

Scenario 3	How To Report
<i>Two-sided Lock-In</i> A clearing firm is reporting on behalf of two fully disclosed correspondent firms that traded with each other. OR A FINRA member ATS/ECN matches a Buy and a Sell order from FINRA member firms using the ATS/ECN system, which causes an execution to occur, and generates a “locked-in” trade in which the two counterparties ARE DISCLOSED TO ONE ANOTHER.	• The clearing firm or ATS/ECN enters its own MPID in both the RPID and the CPID fields. • Marks the trade as Sell. The report is made from the point of view of the correspondent who SOLD. • Puts the MPID of the Selling correspondent in the RPGU field. • Puts the MPID of the Buying correspondent in the CPGU field. • Marks the appropriate capacity indicators for both correspondents in the Reporting Party and Contra Party Capacity fields. • Enters all other trade data. • Sets the Locked-In Indicator to Y.

Although the Two-sided Locked-In trade report is submitted as a Sell, it satisfies both sides’ trade reporting requirement. Therefore a Buy trade report is not required. Both correspondents recognize the other as their contra party.

3.2 Trade Cancel Entry

Firms will use this message to cancel a TRACE trade entry which was previously reported. TRACE will forward a CACX (Cancel confirmation) message to both parties of the trade to advise them that the specified trade is updated to Cancel status. The Cancel function can be used when a trade was submitted during the past 20 rolling business days (up to and including T-20).

EXHIBIT 3.2 CANCEL TRADE MESSAGE FORMAT

Field Name	Position	Format	Contents/Comments
Line 2			
Function	1-1	X(1)	X = RP cancels its own trade which it entered previously. Required.
TRACE Control Date	2-9	9(8)	Control Date associated with the trade to be canceled (returned on the TRACE acknowledgement of the original submission), This field is required regardless of a firm using either their Client Trade Identifier or the TRACE Control Number. Format = YYYYMMDD.
TRACE Control Number	10-19	9(10)	Control Number associated with the trade to be canceled (returned on the TRACE acknowledgement of the original submission), If the Control Number is used to cancel a trade, the Client Trade Identifier may be space-filled. If both reference numbers are entered, TRACE will process the Cancel based on the Control Number.
Client Trade Identifier	20-39	X(20)	Reference number assigned by the user to the original trade report. Optional. Firms may use their Client Trade Identifier to cancel the original submission. If the Client Trade Identifier is used to cancel a trade, the TRACE Control Number may be space-filled. If both reference numbers are entered, TRACE will process the Cancel based on the Control Number. If duplicate Client Trade Identifiers are found for the same Control Date, the Cancel Entry will be rejected and the TRACE Control Number must then be submitted to effect the cancel.
Symbol	40-53	X(14)	TRACE symbol submitted on the original trade to be canceled. Either CUSIP or Symbol are required when a firm uses their Client Trade Identifier to cancel the trade. If a firm uses the Control Number to cancel a trade, this field must be blank.
CUSIP	54-62	X(9)	CUSIP submitted on the original trade to be canceled. Either CUSIP or Symbol are required when a firm uses their Client Trade Identifier to cancel the trade. If a firm uses the Control Number to cancel a trade, this field must be blank.
RPID	63-66	X(4)	Reporting Party ID submitted on the original trade to be canceled. This field is required when a firm uses their Client Trade Identifier to cancel the trade. If a firm uses the Control Number to cancel a trade, this field must be blank.
CR LF			Carriage Return, Line Feed

3.3 Trade Reversal Entry

Firms will use this message to cancel a TRACE trade entry which was originally reported prior to the rolling T-20 day period. TRACE will forward a CAHX (Reversal confirmation) message to both parties of the trade to advise them that the specified trade is updated to Cancel status. The Reversal function cannot be used when a trade was submitted during the past 20 rolling business days (T-20).

Firms wishing to correct a trade entry which was originally reported prior to the rolling T-20 day period must submit the combination of a Reversal, followed by a new As-Of Trade Report (Function T) that contains the correct trade details.

Firms must use TRACE Control Date and Control Number of the original trade report to effect a Reversal. Use of the Client Trade Identifier to effect a Reversal is not supported.

EXHIBIT 3.3 TRADE REVERSAL MESSAGE FORMAT

Field Name	Position	Format	Contents/Comments
Line 2			
Function	1-1	X(1)	Y = RP cancels its own trade which it entered previously. Required.
Original TRACE Control Date	2-9	9(8)	Enter the Control Date associated with the trade to be canceled (returned on the TRACE acknowledgement of the original submission), This field is required . Format = YYYYMMDD.
Original TRACE Control Number	10-19	9(10)	Enter the Control Number associated with the trade to be canceled (returned on the TRACE acknowledgement of the original submission), This field is required .
Special Processing Flag	20-20	X(1)	Enter the value submitted in the original trade report; otherwise the field may be left blank.
B/S Indicator	21-21	X(1)	Enter the value submitted in the original trade report. Required.
Client Trade Identifier	22-41	X(20)	Enter the reference number submitted in the original trade report, if applicable.
Contra Client Trade Identifier	42-61	X(20)	Enter the reference number submitted in the original trade report, if applicable (on Locked-In trade reports).
Quantity	62-74	9(13)	Enter the trade amount submitted in the original trade report, Required.
Symbol	75-88	X(14)	Enter the Symbol submitted in the original trade report, if applicable. Either Symbol or CUSIP must be provided.
CUSIP	89-97	X(9)	Enter the CUSIP submitted in the original trade report, if applicable. Either CUSIP or Symbol must be provided.
Price	98-107	9(10)	Enter the price submitted in the original trade report, Required.
Price Override	108-108	X(1)	Enter "O" to indicate whether the original trade report was submitted with a price override; otherwise the field may be left blank.
Seller's Commission	109-116	9(8)	Enter the seller's commission submitted in the original trade report, if applicable.
Buyer's Commission	117-124	9(8)	Enter the buyer's commission submitted in the original

			trade report, if applicable.
No Remuneration Indicator	125-125	X(1)	Enter the value “N” if submitted in the original trade report, otherwise the field must be blank.
ATS Execution MPID	126-129	X(4)	Enter the 4-character MPID of the ATS if submitted in the original trade report, otherwise the field must be blank.
Filler	130-140	X(11)	Space filled, reserved for future use.
Trade Modifier 1	141-141	X(1)	Reserved for future use. Must be blank on input.
Trade Modifier 2	142-142	X(1)	Reserved for future use. Must be blank on input.
Trade Modifier 3	143-143	X(1)	MUST BE BLANK ON INPUT. Do not enter the Extended hours/Late sale condition modifier generated by TRACE on the original trade report.
Trade Modifier 4	144-144	X(1)	Enter the modifier value submitted in the original trade report, if applicable, otherwise the field may be left blank.
Filler	145-154	9(10)	Space filled, reserved for future use.
CPID	155-158	X(4)	Enter the CPID submitted in the original trade report, Required.
CPGU	159-162	X(4)	Enter the CPGU submitted in the original trade report, if applicable (on Locked-In trade reports). Otherwise, the field must be blank.
Contra Clearing Number	163-166	9(4)	Enter the Contra Clearing ID submitted in the original trade report, if applicable (on Locked-In trade reports). Otherwise, the field must be blank.
Contra Party Capacity	167-167	X(1)	Enter the Contra Capacity submitted in the original trade report (on Locked-In trade reports). Otherwise, the field must be blank.
RPID	168-171	X(4)	Enter the RPID submitted in the original trade report, Required.
RPGU	172-175	X(4)	Enter the RPGU submitted in the original trade report, if applicable. Otherwise, the field must be blank.
Reporting Clearing Number	176-179	9(4)	Enter the Reporting Party Clearing ID submitted in the original trade report, if applicable. Otherwise, the field must be blank.
Reporting Party Capacity	180-180	X(1)	Enter the Reporting Party Capacity submitted in the original trade report. Required.
Trading Market Indicator	181-182	X(2)	Required. Indicates whether the trade was executed in the primary or secondary market (please refer to full definition of this field in Section 2.4). Valid values are: P1 = Primary market trade subject to T+1 reporting. S1 = Secondary market or primary market trade subject to 15-minute reporting.
As-Of Indicator	183-183	X(1)	Value must always be “Y” for all Reversals.
Execution Date	184-191	9(8)	Enter the trade date of the original trade report in MMDDYYYY format. If the original trade report was submitted with a blank execution date to indicate a current day trade on that submission date, Execution Date must be entered for the Reversal. Required.
Execution Time	192-197	9(6)	Enter the Execution Time submitted in the original trade report. Required.
Filler	198-200	X(3)	Reserved for future use. Space fill on input.

Memo	201-210	X(10)	Enter the Memo submitted in the original trade report, if applicable. Otherwise, the field must be blank.
Special Price Indicator	211-211	X(1)	Enter “Y” to indicate whether the original trade report was submitted with a special price indicator; otherwise the field may be left blank.
Special Price Reason	212-261	X(50)	Enter the Special Price Reason submitted in the original trade report if Special Price Indicator (“Y”) was submitted. Otherwise, the field must be blank.
Branch Sequence	262-269	X(8)	Enter the Branch Sequence submitted in the original trade report, if applicable. Otherwise, the field must be blank.
Contra Branch Sequence	270-277	X(8)	Enter the Contra Branch Sequence submitted in the original trade report (on Locked-In trade reports). Otherwise, the field must be blank.
Settlement Date	278-285	9(8)	Enter the Settlement Date of the original trade report in MMDDYYYY format. Required.
Filler	286-297	X(12)	Reserved for future use. Space fill on input..
Locked-In Indicator	298-298	X(1)	If the original trade report was submitted as a Locked-In trade report, enter “Y” in this field. Otherwise, the field must be blank.
Preparation Time	299-304	9(6)	Enter the time this Reversal message was prepared, in HHMMSS format. Optional.
Reserved	305-314	X(10)	space filled, future use.
CR LF			Carriage Return, Line Feed

3.4 Trade Correction Entry

Firms will use this message to correct a TRACE trade entry which was previously reported. TRACE will forward a CACR (Correction confirmation) message to both parties of the trade to advise them that the specified trade is updated to Corrected status. The Correction function can be used when a trade was submitted during the past 20 rolling business days (up to and including T-20).

Firms may correct any field previously submitted in the original trade entry, with the exception of CUSIP or Symbol. If a firm wishes to change the reported security, the original trade must be cancelled, followed with a new trade entry replacing the original trade, containing the corrected CUSIP or Symbol. In addition, Execution Date may only be corrected under certain conditions. Please refer to Execution Date in Section 2.4 for details.

Note: All fields not being changed must be submitted as it was on the original submission, including those whose content is indicated as optional, (blank fields are to be space filled and unused positions are to be space or zero filled wherever applicable). The TRACE System will assign a new control date and control number to the Correction Entry.

Positions 2-66 of the Correction Entry identify the trade that is being corrected. Positions 67-361 represent the trade details being resubmitted.

EXHIBIT 3.4 TRACE CORPORATES AND AGENCIES TRADE CORRECTION ENTRY FORMAT

Field Name	Position	Format	Contents/Comments
Line 2			
Function	1-1	X(1)	R = CORRECTION Trade Entry. Required.
TRACE Control Date	2-9	9(8)	Control Date associated with the trade to be corrected (returned on the TRACE acknowledgement of the original submission), This field is required regardless of a firm using either their Client Trade Identifier or the TRACE Control Number. Format = YYYYMMDD.
TRACE Control Number	10-19	9(10)	Control Number associated with the trade to be corrected (returned on the TRACE acknowledgement of the original submission), If the Control Number is used to correct a trade, the Client Trade identifier may be space-filled. If both reference numbers are entered, TRACE will process the Correction based on the Control Number.
Original Client Trade Identifier	20-39	X(20)	Reference number assigned by the user to the original trade report. Optional. Firms may use their Client Trade Identifier to correct the original submission. If the Client Trade Identifier is used to correct a trade, the TRACE Control Number may be space-filled. If both reference numbers are entered, TRACE will process the Correction based on the Control Number. If duplicate Client Trade Identifiers are found for the same Control Date, the Correction Entry will be rejected and the TRACE Control Number must then be submitted to effect the correction.
Original Symbol	40-53	X(14)	TRACE symbol submitted on the original trade being corrected. Either the original Symbol or the original CUSIP is required when a firm uses their Client Trade Identifier to correct the trade. If a firm uses the Control Number to

Field Name	Position	Format	Contents/Comments
			correct a trade, this field may be space-filled.
Original CUSIP	54-62	X(9)	CUSIP submitted on the original trade being corrected. Either the original CUSIP or the original Symbol is required when a firm uses their Client Trade Identifier to correct the trade. If a firm uses the Control Number to correct a trade, this field may be space-filled.
Original RPID	63-66	X(4)	Reporting Party ID submitted on the original trade being corrected. This field is required when a firm uses their Client Trade Identifier to correct the trade. If a firm uses the Control Number to correct a trade, this field may be space-filled.
Special Processing Flag	67-67	X(1)	Used for special processing purposes, authorization required from FINRA prior to submission on trade reports, where noted. b (blank) = no special processing P = Position transfer (authorization required) A = Affiliate – principal transaction indication
B/S Indicator	68-68	X(1)	B = Bought; S = Sold. Required.
Client Trade Identifier	69-88	X(20)	User assigned reference number. It is recommended that firms assign a different reference number than what was entered as the Original Client Trade Identifier.
Contra Client Trade Identifier	89-108	X(20)	User defined trade reference number on the contra side, used on Locked-In trade reports only. Optional.
Quantity	109-121	9(13)	Dollar amount of the trade. Format 11v2. Required.
Symbol	122-135	X(14)	TRACE issue symbol. Optional. Either Symbol or CUSIP must be provided on each transaction. THIS FIELD MAY NOT BE MODIFIED.
CUSIP	136-144	X(9)	CUSIP of the security. Optional. Either Symbol or CUSIP must be provided on each transaction. THIS FIELD MAY NOT BE MODIFIED.
Price	145-154	9(10)	Numeric Field, Price at which security traded. Format 4v6. Required.
Price Override	155-155	X(1)	O = Override; b (blank) = No Override
Seller's Commission	156-163	9(8)	Dollar amount charged as commission by the seller. Format 6v2. Required if the Reporting Party charged commission (on a Sell trade), otherwise blank.
Buyer's Commission	164-171	9(8)	Dollar amount charged as commission by the buyer. Format 6v2. Required if the Reporting Party charged commission (on a Buy trade), otherwise blank.
No Remuneration Indicator	172-172	X(1)	Indicates whether compensation in the form of mark-up, mark-down or commission is included in the price. N = The transaction does not include remuneration (mark-up/down or commission). b (blank) = indicates the transaction does include remuneration (a mark-up/down or commission).
ATS Execution MPID	173-176	X(4)	Used to identify the Alternative Trading System (ATS) on which an exempted transaction was executed. Enter the 4-character MPID of the ATS, otherwise this field must be blank.
Filler	177-187	X(11)	Space filled, reserved for future use.

Field Name	Position	Format	Contents/Comments
Trade Modifier 1	188-188	X(1)	Reserved for future use. Must be blank on input.
Trade Modifier 2	189-189	X(1)	Reserved for future use. Must be blank on input.
Trade Modifier 3	190-190	X(1)	Extended hours/Late sale conditions. System generated on the outbound acknowledgements. Input must be blank.
Trade Modifier 4	191-191	X(1)	Required indicator if a trade falls under one of the following transaction types: W = Weighted Average Price Otherwise, the field must be blank if none of the above apply.
Filler	192-201	X(10)	Space filled, reserved for future use.
CPID	202-205	X(4)	MPID of the Contra Party or 'C' for Customer or 'A' for Affiliate. Required.
CPGU	206-209	X(4)	MPID of the Contra Party Give Up. Required when there is a give up involved on the contra side of the trade (may only be submitted on a Locked-In trade report).
Contra Clearing Number	210-213	9(4)	Contra Party's clearing number, or b (blank) Optional, may only be submitted on a Locked-In trade report.
Contra Party Capacity	214-214	X(1)	P = Principal, A = Agent. Required only for Locked-In trade reports.
RPID	215-218	X(4)	MPID of the Reporting Party. Required.
RPGU	219-222	X(4)	MPID of the Reporting Party's Give Up Required when applicable.
Reporting Clearing Number	223-226	9(4)	Reporting Party clearing number, or b(blank). Optional.
Reporting Party Capacity	227-227	X(1)	P = Principal, A = Agent. Required.
Trading Market Indicator	228-229	X(2)	Required. Indicates whether the trade was executed in the primary or secondary market (please refer to full definition of this field in Section 2.4). Valid values are: P1 = Primary market trade subject to T+1 reporting. S1 = Secondary market or primary market trade subject to 15-minute reporting.
As-Of Indicator	230-230	X(1)	Y = As-Of trade (T+n); b (blank) = T-Date entry Note: Trades submitted during the T-1 through T-20 period must be submitted with As-Of Indicator "Y" on the correction, regardless if the original trade was submitted as a T-Date entry. Blank As-Of Indicator only applies to same day corrections.
Execution Date	231-238	9(8)	MMDDYYYY format. Can be left blank for current day trade corrections. Corrections of T-1 through T-20 submissions must have the execution date entered, regardless if the original trade was submitted as a current day trade, and the correction must be marked as an As-Of trade (As-Of Indicator = Y) .
Execution Time	239-244	9(6)	Execution Time in HHMMSS format. Required.
Filler	245-247	X(3)	Reserved for future use. Space fill on input.
Memo	248-257	X(10)	User Memo (Will not be displayed to Contra party) Optional.
Special Price Indicator	258-258	X(1)	Y=Special Price, b (blank) = Not Special Price.
Special Price Reason	259-308	X(50)	User Memo indicating reason for Special Price (may be displayed to Contra party), Required when the Special Price

Field Name	Position	Format	Contents/Comments
			Indicator (Y) is submitted.
Branch Sequence	309-316	X(8)	Optional field, 8 alphanumeric.
Contra Branch Sequence	317-324	X(8)	Optional field, 8 alphanumeric (can only be submitted on Locked-In trade reports).
Settlement Date	325-332	9(8)	MMDDYYYY format; Required for all transactions.
Filler	333-344	X(12)	Reserved for future use. Space fill on input.
Locked-In Indicator	345-345	X(1)	Y or blank. Y indicates that the firm entering the trade is reporting for both sides of the trade. This occurs when two of its give-ups trade with each other or the firm trades with one of its own give-ups. Locked-In trades must be submitted as Sells (B/S Indicator = "S").
Preparation Time	346-351	9(6)	Time of correction submission in HHMMSS format. Optional.
Reserved	352-361	X(10)	Reserved for future use. Space fill on input.
CR LF			Carriage Return, Line Feed

4.0 OUTPUT MESSAGES

For more detailed Output Message formats, refer to the CTCI for Trade Reporting Specifications published by NASDAQ on www.nasdaqtrader.com.

Input messages received from TRACE subscribers will be forwarded to the TRACE System for processing through NASDAQ. Identical to currently existing CTCI applications (e.g., FINRA/NASDAQ TRF (ACT) Trade Report), NASDAQ will perform validations for each TRACE input message received. NASDAQ will always generate a response back to the originator for each input message received. The response can be a positive acknowledgment if the input messages pass the NASDAQ validation or a negative acknowledgment (rejection) if the input messages fail validation.

All output messages (NASDAQ or application output messages) forwarded by NASDAQ to an output destination (i.e., subscriber station) will be contained in the Output Message Envelope format.

4.1 TRACE Application Output Messages

A TRACE input message that successfully passes NASDAQ validations is forwarded to the TRACE application, which will perform additional validations on the text of the input message. If an error is detected, the originating subscriber shall receive a reject message explaining why the original message could not be processed. If no errors are detected and TRACE accepts the input message, the TRACE application will send an acknowledgment message to the originating subscriber and a Notification message to the contra party. All Reject and Notification messages released from the TRACE Application Processor will be forwarded to the subscriber via NASDAQ in Output Message format if the subscriber is employing a CTCI and will be contained in an Output Message Envelope. Note that if the rejected text is too large, the Trailer will overlay the text such that the block does not exceed 1024 characters.

There is no guarantee that TRACE messages will be received in a logical sequence. Subscribers should take this into consideration in their design.

4.2 Reject Message Format

If the TRACE application cannot process a message received from the subscriber, it will generate a Status Message for the originator which indicates why the message was rejected. The Status Message will be received by the originator as the text portion of a Standard NASDAQ Output Message. The text (Status Message) is described below.

Line 1:

Originator MPID -	This is an optional line that may contain the four character MPID of the entering firm, or the MPID of the firm the Service Bureau is acting for. If this option is utilized for multistation lines, it will equal the four character MPID associated with the station (select/poll address).
CR LF -	Required line delimiter.

Line 2:

Category -	This field identifies the message category and will contain "STATUS".
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CR LF -	Required line delimiter.
<u>Line 3:</u>	This line contains ("REJ - Reason for Rejection"). The maximum reject reason is 75 bytes. If the message is shorter than 75 bytes, the reject reason will be followed by CR LF.
CR LF -	Required line delimiter.
<u>Line 4:</u>	
Branch Office Code and Sequence Number	This line of the Status Message contains the one to eight alphabetic character Branch Office Code Sequence Number which appears on line 1 of the input message, if one was submitted. In addition, a time field (HH:MM:SS) will be sent on this line. If a Branch Office Code Sequence Number were not entered in the input message, Line 4 contains only the time message.
CR LF -	Required line delimiter.
<u>Line 5:</u>	This line contains an echo of the original input message being rejected.
CR LF -	Required line delimiter.

EXHIBIT 4.2 **TRACE REJECT MESSAGE FORMAT**

Line 1: MPID cr lf
Line 2: STATUS cr lf
Line 3: REJ - (Reject Reason) cr lf
Line 4: BRIDSQNO HH:MM:SS cr lf
Line 5: (Text of original input message) cr lf

4.3 TRACE SP UM Notification Message

For more detailed NASDAQ Output Message formats, refer to [the](#) CTCI for Trade Reporting Specifications published by NASDAQ on www.nasdaqtrader.com.

If a TRACE input message (i.e., Trade Entry, Cancel, Reversal or Correction) is accepted by the TRACE application (i.e., it passes all validations), an appropriate UM Notification Message will be forwarded to the proper TRACE subscriber. The TRACE UM Notification Messages contain sufficient data to enable subscribers to build their own TRACE Image Files to perform trade reporting procedures. If the firm selected header options but has not specified customized headers, then the default message header origin will be CARXXX where XXX represents 1 - 3 alphanumeric characters reserved for Nasdaq's use, and the default message header type field will contain T (OTHER). Following the optional header line(s), the UM notification message will be received by the subscriber as the text portion of a Standard NASDAQ Output Message and is described below:

<u>Line 1:</u>	
OTHER MPID -	Receiving firm MPID.
CR LF -	Required line delimiter.

<u>Line 2:</u>	TRACE C&A CTCI Specification ver 3.4
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TRACE Message Type - This field identifies the TRACE UM Notification message header and will contain the type of message being sent. See Section 4.4 for a list of Output Message Types.

Line 3:

Message Detail

This line is the detail data of the UM Notification Message corresponding to the Output Message Type specified in Line 2. See Section 4.4 for a description of the message formats associated with each Output Message Type.

4.4 Message Format Definitions

CAEN - denotes a TRACE Corporates and Agencies Entry Acknowledgment Message. When firm enters an original or As-of trade and the trade is accepted by TRACE, this message will be forwarded to the originator.

CAAL - denotes a TRACE Corporates and Agencies Entry Allege Notification Message. When a firm enters an original or As-of trade and the trade is accepted by TRACE, this message will be forwarded to the contra party.

Note: If a subscriber chooses to build a TRACE Image File, which contains all trades entered by the firm or trades other firms entered against the firm, then respective CAEN and CAAL messages should be used to build it. Other TRACE UM messages described below will be used to update the statuses and/or contents of these trades.

CACX - denotes a TRACE Corporates and Agencies Cancel UM Notification Message. If a trade submitted within the prior 20 business days is canceled, this message will be forwarded to both parties.

CAHX - denotes a TRACE Corporates and Agencies Reversal UM Notification Message. If a trade submitted more than 20 business days prior to the current date is canceled (i.e., reversed), this message will be forwarded to both parties.

CACR- denotes a TRACE Corporates and Agencies Correction UM Notification Message. If a trade submitted within the prior 20 business days is corrected, this message will be forwarded to both parties.

5.0 TRADE REPORTING OUTPUT MESSAGES

5.1 Acknowledgment Message (CAEN)

TRACE Corporates and Agencies Trade Entry Acknowledgment Message (CAEN)

CAEN: Denotes a TRACE Corporates and Agencies Entry Acknowledgment Notification Message. When a firm enters a TRACE trade entry and the entry is accepted by TRACE, this message will be forwarded to the originator. This message is formatted as follows:

LINE 1:	OTHER MPID Cr Lf
LINE 2:	CAEN Cr Lf
LINE 3:	Control Date Control Number (Trade Text) Cr Lf

Where:

MPID - Receiving firm MPID

Control Date - The date the TRACE system received and processed the submission. The Control Date is required, in combination with the Control Number, to uniquely identify the record in the TRACE File for subsequent processing (cancels and corrections).

Control Number - The ten digit control number which the TRACE System had assigned to the TRACE trade when it was accepted by the TRACE System. The Control Number is required, in combination with the Control Date, to uniquely identify the record in the TRACE File for subsequent processing.

Trade Text - This field contains the TRACE trade and will be formatted as a TRACE Trade Entry Message.

Cr Lf - Required line delimiter.

Note 1: Valid TRACE statuses are:

T - Trades entered for Trade Reporting

Exhibit 5.1 TRACE Trade Entry Acknowledgment - (CAEN)

Field Name	Position	Format	Contents/Comments
Line 3			
Control Date	1-8	9(8)	Date referencing when the system processed the trade report. YYYYMMDD format.
Control Number	9-18	9(10)	System assigned reference number.
Trade Status	19-19	X(1)	Status of trade. T = accepted trade entry.
Special Processing Flag	20-20	X(1)	Reflects user input: P, A or blank.
B/S Indicator	21-21	X(1)	Reflects user input: B or S.
Client Trade Identifier	22-41	X(20)	Reflects user input: User assigned reference number or blank.
Contra Client Trade Identifier	42-61	X(20)	Reflects user input: User assigned reference number on the contra side (on Locked-In trade reports) or blank.
Quantity	62-74	9(13)	Reflects user input: Dollar amount of the trade.
Symbol	75-88	X(14)	Reflects user input: TRACE issue symbol or blank.
CUSIP	89-97	X(9)	Reflects user input: CUSIP or blank.
Price	98-107	9(10)	Reflects user input: Trade price.
Price Override	108-108	X(1)	Reflects user input: O or blank.
Seller's Commission	109-116	9(8)	Reflects user input: Dollar amount or blank.
Buyer's Commission	117-124	9(8)	Reflects user input: Dollar amount or blank.
No Remuneration Indicator	125-125	X(1)	Reflects user input: N or blank.
ATS Execution MPID	126-129	X(4)	Reflects user input: ATS MPID or blank.
Filler	130-140	X(11)	Space filled, reserved for future use.
Trade Modifier 1	141-141	X(1)	Reserved for future use. Blank on output.
Trade Modifier 2	142-142	X(1)	Reserved for future use. Blank on output.
Trade Modifier 3	143-143	X(1)	Extended hours/Late sale conditions. System generated on the outbound acknowledgements: Blank = no system generated modifier T = Trade reported after market hours U = Trade reported after market hours and reported late Z = Trade reported during market hours and reported late
Trade Modifier 4	144-144	X(1)	Reflects user input: W or blank.
Filler	145-154	X(10)	Space filled, reserved for future use.
CPID	155-158	X(4)	Reflects user input: MPID of the Contra Party (or C for Customer or A for Affiliate).
CPGU	159-162	X(4)	Reflects user input: MPID of the Contra Party Give Up or blank (MPID may only be submitted on a Locked-In trade report).
Contra Clearing Number	163-166	9(4)	Reflects user input: Contra Party's clearing number or blank (may only be submitted on a Locked-In trade report).
Contra Party Capacity	167-167	X(1)	Reflects user input: P or A (only for Locked-In trade reports) or blank on non-Locked-In trade reports.
RPID	168-171	X(4)	Reflects user input: MPID of the Reporting Party.
RPGU	172-175	X(4)	Reflects user input: MPID of the Reporting Party's Give Up or blank.
Reporting Clearing Number	176-179	9(4)	Reflects user input: Reporting Party clearing number or blank.
Reporting Party Capacity	180-180	X(1)	Reflects user input: P or A.
Trading Market Indicator	181-182	X(2)	Reflects user input: S1 or P1.

Field Name	Position	Format	Contents/Comments
As-Of Indicator	183-183	X(1)	Reflects user input: Y or blank.
Execution Date	184-191	9(8)	Reflects user input: MMDDYYYY date or blank.
Execution Time	192-197	9(6)	Reflects user input: Time in HHMMSS.
Filler	198-200	X(3)	Space filled, reserved for future use.
Memo	201-210	X(10)	Reflects user input: User Memo (Will not be displayed to Contra party) or blank.
Special Price Indicator	211-211	X(1)	Reflects user input: Y or blank.
Special Price Reason	212-261	X(50)	Reflects user input: User Memo indicating reason for Special Price (may be displayed to Contra party) or blank.
Branch Sequence	262-269	X(8)	Reflects user input: branch sequence number or blank.
Contra Branch Sequence	270-277	X(8)	Reflects user input: Contra Party's branch sequence number or blank (may only be submitted on a Locked-In trade report).
Settlement Date	278-285	9(8)	Reflects user input: MMDDYYYY date.
Filler	286-297	X(12)	Space filled, reserved for future use.
Locked-In Indicator	298-298	X(1)	Reflects user input: Y or blank.
Preparation Time	299-304	9(6)	Reflects user input: Time in HHMMSS.
Reserved	305-314	X(10)	space filled, future use.
CR LF			Carriage Return, Line Feed

5.2 *Allege Messages (CAAL)*

TRACE Trade Entry Allege Message (CAAL)

CAAL: Denotes a TRACE Entry Allege Notification Message. When a firm enters a TRACE trade entry and the entry is accepted by TRACE, this message will be forwarded to the contra party. This message is formatted as follows:

LINE 1: OTHER MPID Cr Lf
LINE 2: CAAL Cr Lf
LINE 3: Control Date Control Number (Trade Text) Cr Lf

Where:

MPID - Receiving firm MPID

Control Date - The date the TRACE system received and processed the submission.

Control Number - The ten digit control number which the TRACE System had assigned to the TRACE trade when it was accepted by the TRACE System.

Trade Text - This field contains the TRACE trade and will be formatted as a TRACE Trade Entry Message (Section 3.1).

Cr Lf - Required line delimiter.

Note 1: Valid TRACE statuses are:

R - On a Correction to the contra party (when the Reporting Party has amended the CPID, the new contra party will receive a CAAL with the Status code "R").

T - On a new Trade report, the alleged contra party will receive a CAAL with the Status code "T".

Exhibit 5.2 TRACE Trade Entry Allege Message - (CAAL)

Field Name	Position	Format	Contents/Comments
Line 3			
Control Date	1-8	9(8)	Date referencing when the system processed the trade report.
Control Number	9-18	9(10)	System assigned reference number.
Trade Status	19-19	X(1)	Status of trade. T = accepted trade entry. R = reporting party amended the contra party to the recipient of this CAAL.
Special Processing Flag	20-20	X(1)	Reflects user input: P, A or blank.
B/S Indicator	21-21	X(1)	Reflects user input: B or S.
Client Trade Identifier	22-41	X(20)	Reflects user input: User assigned reference number or blank.
Contra Client Trade Identifier	42-61	X(20)	Reflects user input: User assigned reference number on the contra side on Locked-In trade reports or blank.
Quantity	62-74	9(13)	Reflects user input: Dollar amount of the trade.
Symbol	75-88	X(14)	Reflects user input: TRACE issue symbol or blank.
CUSIP	89-97	X(9)	Reflects user input: CUSIP or blank.
Price	98-107	9(10)	Reflects user input: Trade price.
Price Override	108-108	X(1)	Reflects user input: O or blank.
Seller's Commission	109-116	9(8)	Reflects user input: Dollar amount or blank.
Buyer's Commission	117-124	9(8)	Reflects user input: Dollar amount or blank.
No Remuneration Indicator	125-125	X(1)	Reflects user input: N or blank.
ATS Execution MPID	126-129	X(4)	Reflects user input: ATS MPID or blank.
Filler	130-140	X(11)	Space filled, reserved for future use.
Trade Modifier 1	141-141	X(1)	Reserved for future use. Blank on output.
Trade Modifier 2	142-142	X(1)	Reserved for future use. Blank on output.
Trade Modifier 3	143-143	X(1)	Extended hours/Late sale conditions. System generated on the outbound acknowledgements: Blank = no system generated modifier T = Trade reported after market hours U = Trade reported after market hours and reported late Z = Trade reported during market hours and reported late
Trade Modifier 4	144-144	X(1)	Reflects user input: W or blank.
Filler	145-154	X(10)	Space filled, reserved for future use.
CPID	155-158	X(4)	Reflects user input: MPID of the Contra Party (or C for Customer or A for Affiliate).
CPGU	159-162	X(4)	Reflects user input: MPID of the Contra Party Give Up or blank (MPID may only be submitted on a Locked-In trade report).
Contra Clearing Number	163-166	9(4)	Reflects user input: Contra Party's clearing number or blank (may only be submitted on a Locked-In trade report).
Contra Party Capacity	167-167	X(1)	Reflects user input: P or A (only for Locked-In trade reports) or blank on non-Locked-In trade reports.
RPID	168-171	X(4)	Reflects user input: MPID of the Reporting Party.
RPGU	172-175	X(4)	Reflects user input: MPID of the Reporting Party's Give Up or blank.
Reporting Clearing Number	176-179	9(4)	Reflects user input: Reporting Party clearing number or blank.
Reporting Party Capacity	180-180	X(1)	Reflects user input: P or A.

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Field Name	Position	Format	Contents/Comments
Trading Market Indicator	181-182	X(2)	Reflects user input: S1 or P1.
As-Of Indicator	183-183	X(1)	Reflects user input: Y or blank.
Execution Date	184-191	9(8)	Reflects user input: MMDDYYYY date or blank.
Execution Time	192-197	9(6)	Reflects user input: Time in HHMMSS.
Filler	198-200	X(3)	Space filled, reserved for future use.
Memo	201-210	X(10)	User Memo will not be displayed to Contra party. Field will be blank.
Special Price Indicator	211-211	X(1)	Reflects user input: Y or blank.
Special Price Reason	212-261	X(50)	Reflects user input: User Memo indicating reason for Special Price (may be displayed to Contra party) or blank.
Branch Sequence	262-269	X(8)	Reflects user input: branch sequence number or blank.
Contra Branch Sequence	270-277	X(8)	Reflects user input: Contra Party's branch sequence number or blank (may only be submitted on a Locked-In trade report).
Settlement Date	278-285	9(8)	Reflects user input: MMDDYYYY date.
Filler	286-297	X(12)	Reflects user input: Factor amount or blank.
Locked-In Indicator	298-298	X(1)	Reflects user input: Y or blank.
Preparation Time	299-304	9(6)	Reflects user input: Time in HHMMSS.
Reserved	305-314	X(10)	Space filled, reserved for future use.
CR LF			Carriage Return, Line Feed

5.3 Cancel Trade Acknowledgment (CACX)

- Control Date -** The date the TRACE system received and processed the submission. The Control Date is required, in combination with the Control Number, to uniquely identify the record in the TRACE File for subsequent processing (cancels and corrections).
- Control Number -** The ten digit control number which the TRACE System had assigned to the TRACE trade when it was accepted by the TRACE System. The Control Number is required, in combination with the Control Date, to uniquely identify the record in the TRACE File for subsequent processing.
- Client Trade Identifier -** The twenty character alphanumeric reference assigned by the user to the original trade report.
- CR LF -** Required line delimiter.

EXHIBIT 5.3 TRACE UM NOTIFICATION MESSAGE – CACX

LINE 1: OTHER MPID cr lf
LINE 2: CACX cr lf
LINE 3: (Control Date) (Control Number) (Client Trade Identifier) cr lf

Exhibit 5.3 Cancel Trade Acknowledgment (CACX)

Field Name	Position	Format	Contents/Comments
Line 3			
Control Date	1-8	9(8)	Control Date associated with the canceled TRACE record (YYYYMMDD)
Control Number	9-18	9(10)	Control Number associated with the canceled TRACE record
Client Trade Identifier	19-38	X(20)	User assigned Client Trade Identifier associated with the canceled TRACE record
CR LF			Carriage Return, Line Feed

5.4 Trade Reversal Acknowledgment (CAHX)

- Control Date -** The date the TRACE system received and processed the submission. The Control Date is required, in combination with the Control Number, to uniquely identify the record in the TRACE File for subsequent processing (cancels and corrections).
- Control Number -** The ten digit control number which the TRACE System had assigned to the TRACE trade when it was accepted by the TRACE System. The Control Number is required, in combination with the Control Date, to uniquely identify the record in the TRACE File for subsequent processing.
- CR LF -** Required line delimiter.

EXHIBIT 5.4 TRACE UM NOTIFICATION MESSAGE – CAHX

LINE 1: OTHER MPID cr lf
 LINE 2: CAHX cr lf
 LINE 3: (Control Date) (Control Number) (Trade Text) cr lf

Exhibit 5.4 Trade Reversal Acknowledgment (CAHX)

Field Name	Position	Format	Contents/Comments
Line 3			
TRACE Control Date	1-8	9(8)	Control Date assigned to the Reversal entry. (YYYYMMDD).
TRACE Control Number	9-18	9(10)	Control Number assigned to the Reversal entry.
Original TRACE Control Date	19-26	9(8)	Original Control Date submitted on the Reversal Function Y message.
Original TRACE Control Number	27-36	9(10)	Original Control Number submitted on the Reversal Function Y message.
Special Processing Flag	37-37	X(1)	Reflects user input: P, A or blank.
B/S Indicator	38-38	X(1)	Reflects user input: B or S.
Client Trade Identifier	39-58	X(20)	Reflects user input: User assigned reference number or blank.
Contra Client Trade Identifier	59-78	X(20)	Reflects user input: User assigned reference number on the contra side on Locked-In trade reports or blank.
Quantity	79-91	9(13)	Reflects user input: Dollar amount of the trade.
Symbol	92-105	X(14)	Reflects user input: TRACE issue symbol or blank.
CUSIP	106-114	X(9)	Reflects user input: CUSIP or blank.
Price	115-124	9(10)	Reflects user input: Trade price.
Price Override	125-125	X(1)	Reflects user input: O or blank.
Seller's Commission	126-133	9(8)	Reflects user input: Dollar amount or blank.
Buyer's Commission	134-141	9(8)	Reflects user input: Dollar amount or blank.
No Remuneration Indicator	142-142	X(1)	Reflects user input: N or blank.
ATS Execution MPID	143-146	X(4)	Reflects user input: ATS MPID or blank.
Filler	147-157	X(11)	Space filled, reserved for future use.

Trade Modifier 1	158-158	X(1)	Reserved for future use. Blank on output.
Trade Modifier 2	159-159	X(1)	Reserved for future use. Blank on output.
Trade Modifier 3	160-160	X(1)	Extended hours/Late sale conditions. THIS FIELD WILL BE BLANK.
Trade Modifier 4	161-161	X(1)	Reflects user input: W or blank.
Filler	162-171	X(10)	Space filled, reserved for future use.
CPID	172-175	X(4)	Reflects user input: MPID of the Contra Party (or C for Customer or A for Affiliate).
CPGU	176-179	X(4)	Reflects user input: MPID of the Contra Party Give Up or blank (MPID may only be submitted on a Locked-In trade report).
Contra Clearing Number	180-183	9(4)	Reflects user input: Contra Party's clearing number or blank (may only be submitted on a Locked-In trade report).
Contra Party Capacity	184-184	X(1)	Reflects user input: P or A (only for Locked-In trade reports) or blank on non-Locked-In trade reports.
RPID	185-188	X(4)	Reflects user input: MPID of the Reporting Party.
RPGU	189-192	X(4)	Reflects user input: MPID of the Reporting Party's Give Up or blank.
Reporting Clearing Number	193-196	9(4)	Reflects user input: Reporting Party clearing number or blank.
Reporting Party Capacity	197-197	X(1)	Reflects user input: P or A.
Trading Market Indicator	198-199	X(2)	Reflects user input: S1 or P1.
As-Of Indicator	200-200	X(1)	Reflects user input: Y.
Execution Date	201-208	9(8)	Reflects user input: MMDDYYYY date.
Execution Time	209-214	9(6)	Reflects user input: Time in HHMMSS.
Filler	215-217	X(3)	Space filled, reserved for future use.
Memo	218-227	X(10)	Reflects user input: User Memo (Will not be displayed to Contra party) or blank.
Special Price Indicator	228-228	X(1)	Reflects user input: Y or blank.
Special Price Reason	229-278	X(50)	Reflects user input: User Memo indicating reason for Special Price (may be displayed to Contra party) or blank.
Branch Sequence	279-286	X(8)	Reflects user input: branch sequence number or blank.
Contra Branch Sequence	287-294	X(8)	Reflects user input: Contra Party's branch sequence number or blank (may only be submitted on a Locked-In trade report).
Settlement Date	295-302	9(8)	Reflects user input: MMDDYYYY date.
Filler	303-314	X(12)	Space filled, reserved for future use.
Locked-In Indicator	315-315	X(1)	Reflects user input: Y or blank.
Preparation Time	316-321	9(6)	Reflects user input: Time in HHMMSS.
Reserved	322-331	X(10)	Space filled, reserved for future use.
CR LF			Carriage Return, Line Feed

5.5 Correction TRACE UM Notification (CACR)

Denotes a TRACE Corporates and Agencies Correction UM Notification Message. This message will be forwarded to the trading parties as follows when a firm submits a Correction transaction (on a trade report submitted within the past 20 business days):

- 1) The CACR Message will always be forwarded to the updating firm.
- 2) The CACR Message will be forwarded to the contra party if the contra in the original trade equals the contra in the corrected trade (i.e., no change in the CPID). If the contra is changed in the corrected trade, the original contra will receive a cancel notification (CACX) and the new contra will receive a trade allege notification (CAAL).

EXHIBIT 5.5 TRACE UM NOTIFICATION MESSAGE – CACR

LINE 1: OTHER MPID cr lf
 LINE 2: CACR cr lf
 LINE 3: (Original Control Date) (Original Control Number) (Correction Control Date)
 (Correction Control Number) (Correction Trade Text) cr lf

Exhibit 5.5.1 TRACE Corporates and Agencies Correction UM Notification (CACR)

Field Name	Position	Format	Contents/Comments
Line 3			
Original Control Date	1-8	9(8)	Control Date associated with the original TRACE record (YYYYMMDD).
Original Control Number	9-18	9(10)	Control Number associated with the original TRACE record.
Correction Control Date	19-26	9(8)	Control Date associated with the new TRACE record (YYYYMMDD).
Correction Control Number	27-36	9(10)	Control Number associated with the new TRACE record.
Special Processing Flag	37-37	X(1)	Reflects user input: P, A or blank.
B/S Indicator	38-38	X(1)	Reflects user input: B or S.
Client Trade Identifier	39-58	X(20)	Reflects user input: User assigned reference number from the corrected submission, or blank.
Contra Client Trade Identifier	59-78	X(20)	Reflects user input: User assigned reference number on the contra side (on Locked-In trade reports) or blank.
Quantity	79-91	9(13)	Reflects user input: Dollar amount of the trade.
Symbol	92-105	X(14)	Reflects user input: TRACE issue symbol or blank.
CUSIP	106-114	X(9)	Reflects user input: CUSIP or blank.
Price	115-124	9(10)	Reflects user input: Trade price.
Price Override	125-125	X(1)	Reflects user input: O or blank.
Seller's Commission	126-133	9(8)	Reflects user input: Dollar amount or blank.
Buyer's Commission	134-141	9(8)	Reflects user input: Dollar amount or blank.
No Remuneration Indicator	142-142	X(1)	Reflects user input: N or blank.
ATS Execution MPID	143-146	X(4)	Reflects user input: ATS MPID or blank.
Filler	147-157	X(11)	Space filled, reserved for future use.
Trade Modifier 1	158-158	X(1)	Reserved for future use. Blank on output.

Field Name	Position	Format	Contents/Comments
Trade Modifier 2	159-159	X(1)	Reserved for future use. Blank on output.
Trade Modifier 3	160-160	X(1)	Extended hours/Late sale conditions. System generated on the outbound acknowledgements: Blank = no system generated modifier T = Trade reported after market hours U = Trade reported after market hours and reported late Z = Trade reported during market hours and reported late
Trade Modifier 4	161-161	X(1)	Reflects user input: W or blank.
Filler	162-171	X(10)	Space filled, reserved for future use.
CPID	172-175	X(4)	Reflects user input: MPID of the Contra Party (or C for Customer or A for Affiliate).
CPGU	176-179	X(4)	Reflects user input: MPID of the Contra Party Give Up or blank (MPID may only be submitted on a Locked-In trade report).
Contra Clearing Number	180-183	9(4)	Reflects user input: Contra Party's clearing number or blank (may only be submitted on a Locked-In trade report).
Contra Party Capacity	184-184	X(1)	Reflects user input: P or A (only for Locked-In trade reports) or blank on non-Locked-In trade reports.
RPID	185-188	X(4)	Reflects user input: MPID of the Reporting Party.
RPGU	189-192	X(4)	Reflects user input: MPID of the Reporting Party's Give Up or blank.
Reporting Clearing Number	193-196	9(4)	Reflects user input: Reporting Party clearing number or blank.
Reporting Party Capacity	197-197	X(1)	Reflects user input: P or A.
Trading Market Indicator	198-199	X(2)	Reflects user input: S1 or P1.
As-Of Indicator	200-200	X(1)	Reflects user input: Y or blank.
Execution Date	201-208	9(8)	Reflects user input: MMDDYYYY date or blank.
Execution Time	209-214	9(6)	Reflects user input: Time in HHMMSS.
Filler	215-217	X(3)	Space filled, reserved for future use.
Memo	218-227	X(10)	Reflects user input: User Memo (Will not be displayed to Contra party) or blank.
Special Price Indicator	228-228	X(1)	Reflects user input: Y or blank.
Special Price Reason	229-278	X(50)	Reflects user input: User Memo indicating reason for Special Price (may be displayed to Contra party) or blank.
Branch Sequence	279-286	X(8)	Reflects user input: branch sequence number or blank.
Contra Branch Sequence	287-294	X(8)	Reflects user input: Contra Party's branch sequence number or blank (may only be submitted on a Locked-In trade report).
Settlement Date	295-302	9(8)	Reflects user input: MMDDYYYY date.
Filler	303-314	X(12)	Space filled, reserved for future use.
Locked-In Indicator	315-315	X(1)	Reflects user input: Y or blank.
Preparation Time	316-321	9(6)	Reflects user input: Time in HHMMSS.
Reserved	322-331	X(10)	Space filled, reserved for future use.
CR LF			Carriage Return, Line Feed

APPENDIX A --- TCP/IP Connection and IBM WebSphere MQ

For information concerning TCP/IP Connectivity and IBM WebSphere MQ, please refer to the CTCI for Trade Reporting Specifications published by NASDAQ on www.nasdaqtrader.com.

APPENDIX B --- CTCI Rejection Messages

The following is a list of CTCI rejection messages. These messages may occur as a result of invalid data entry, lack of data or invalid action taken on the trade. Please note this is not a complete list and is subject to change over time.

!REJ – FUNCTION NOT ALLOWED
!REJ – INVALID ENTRY
!REJ – INVALID RPID
!REJ – INVALID DATE
!REJ – INVALID PRICE
!REJ – INVALID PRICE OVERRIDE
!REJ – INVALID TIME
!REJ – RPID REQUIRED
!REJ – TRACE ENTRY SUSPENDED
!REJ – INVALID REASON CODE
!REJ – INVALID SIDE
!REJ – NOT WITHIN ALLOWABLE TIME
!REJ – PRICE OUT OF RANGE
!REJ – PRICE OUT OF OVERRIDE RANGE
!REJ – TERMINAL NOT AUTHORIZED
!REJ – INVALID MMID
!REJ – UPDATE OF FIELD REQUIRED
!REJ – NOT CUSIP AND SYMBOL
!REJ – THIS BOND HAS BEEN DELETED
!REJ – INVALID FUNCTION CODE
!REJ – INVALID TRADE DATE
!REJ – PRICE REQUIRED
!REJ – INVALID BUYER COMMISSION
!REJ – INVALID CUSIP NUMBER
!REJ – INVALID SYMBOL
!REJ – BOND NOT FOUND
!REJ – INVALID VOLUME ENTERED
!REJ – INVALID AS-OF
!REJ – RPID NOT AUTHORIZED
!REJ – CPID NOT AUTHORIZED
!REJ – CANNOT CHANGE CUSIP
!REJ – INVALID RP EXECUTING PARTY
!REJ – INVALID CP EXECUTING PARTY
!REJ – RP EXECUTING PARTY NOT AUTHORIZED
!REJ – CP EXECUTING PARTY NOT AUTHORIZED
!REJ – MUST ENTER BOND SYMBOL OR CUSIP
!REJ – INVALID SELLER COMMISSION
!REJ – INVALID TRADE MODIFIER
!REJ – INVALID P/A
!REJ – CPID REQUIRED

!REJ – INVALID REPORT FLAG
!REJ – INVALID SPECIAL TRADE INDICATOR
!REJ – INVALID SPECIAL TRADE INDICATOR/SPECIAL MEMO
!REJ – BOND NOT TRACE AUTHORIZED
!REJ – NO CONTROL NUMBER
!REJ – TRADE ALREADY CANCELED
!REJ – INVALID BRANCH SEQUENCE NUMBER
!REJ – INVALID CONTRA BRANCH SEQUENCE NUMBER
!REJ – INVALID AS-OF DATE
!REJ – NOT AN OPEN TRADE
!REJ – INVALID CPID
!REJ – CORRECTION MAY NOT CHANGE BOND
!REJ – RPID INTRODUCING BROKER SUSPENDED
!REJ – CPID INTRODUCING BROKER SUSPENDED
!REJ – EXECUTION TIME GREATER THAN TRADE REPORT TIME
!REJ – NOT TRADE SUBMITTER
!REJ – CORRECTION MAY NOT CHANGE AS-OF FLAG
!REJ – INVALID TRACE ENTRY – YOUR EXECUTING PARTY IS RESPONSIBLE
!REJ – TRACE TEMPORARILY NOT AVAILABLE
!REJ – INVALID TRADING MARKET INDICATOR

Document Revision Log

Version	Revision Date	Description of change
3.0	9/30/2011	This version replaces TRACE CTCI specifications version 2.2 to reflect modified message formats that conform with the migration of corporates and agencies to the new TRACE platform.
3.1	12/15/2014	- Introduced new value “A” for identification of Affiliates of member firms that can be reported as a Contra Party to a trade. - Introduction of new No Remuneration Indicator field (taken from one of the reserved fields). - Introduced new value “A” to Special Processing Flag values.
3.1a	1/12/2015	Removed all references to Affiliates, No Remuneration Indicator and “A” for Special Processing. Production rollout will be delayed to a future point in time and will no longer coincide with ABS dissemination.
3.2	5/18/2015	- Introduced new value “A” for identification of Affiliates of member firms that can be reported as a Contra Party to a trade. - Introduced new value “A” to Special Processing Flag values.
3.3	12/9/2015	Reintroduced the No Remuneration Indicator and introduced ATS Execution MPID on all inbound and outbound Trade Report, Reversal and Correction messages. Utilized bytes from an existing Filler to accommodate these two new fields.
3.3a	2/29/2016	Updated Special Processing Flag to indicate the field can be modified on a Trade Correction. This change will take effect with the No Remuneration and ATS Execution MPID changes outlined in version 3.3 therefore those edits remain visible in this version.
3.4	3/16/2017	Modified RPID field on Trade Cancel Entry message layout to reflect a required field (section 3.2, pos. 63-66).