SOLA® Access Information Language

SAIL Specifications Guide for BOX

Document Version: **2.22**
Protocol Version: B7
Date of Issue: 2024-04-24

Document History

Version	Date	Change Description
2.0	2012-11-10	• 2.2.1: Message Format, Replace reference "business message" to "SAIL message". • 5.39: Leg Execution Notice, Fields 'Reference ID' and 'Original Reference ID' always blank. • Chapter 6: Error Codes, Update list of error codes. • Chapter 7: Field Types, Update description of field 'Special Price Term'.
2.1	2013-10-08	• 5.3 - OI: Improvement Order Entry, Replaced unused 'Linked' fields by a filler • 5.10 Quote Notice: Updated message title and description. • 5.13 - BD: Bulk Quote Date, Added links to new Field Types for fields 'Calculation Time Interval', 'Maximum Total Volume', 'Maximum Total Value', 'Maximum Delta Volume' and 'Maximum Delta Value'. • 6 - Error Codes: Removed error related to Linked Orders. • 7 - Field Types, Removed unused 'Linked' fields, Removed BOX-TOP value in 'Price Type' field, Added value '6' in field 'IML Handling' for Complex Order exposure.
2.2	2014-09-03	• Removal of message NM: Market Maker Prime Notice Change of text in message XI: Improvement Order Cancellation • Introduced new field name: 'Counterpart Account Type' in messages NT: Execution Notice and NL: Leg Execution Notice

2.3	2015-04-17	• Section 5: Business Messages
		    ○ Added Special Price Term to 5.1 - OE: Order Entry message, Corrected filler order
		    ○ Added Special Price Term to 5.2 - OM: Order Modification message, Corrected filler order
		• Section 7: Field Types
		• Added Special Price Term to Field Types table

2.4	2016-03-28	• Section 7: Added B value to Field Type Status
2.5	2016-06-13	• Implementation of PTV features in SAIL Protocol version B1: • Section 5: New business messages: MU TraderStatus, GZ User Global Cancellation, Modified message BD BulkQuoteData • Section 6: Modified Field Calculation Time Interval, Cancellation Type, Quote Cancel Reason, Status, Trader Lock Status • Section 7: New error codes for PTV (3096, 3097) • General: Re-ordering of messages, values in alphabetical order

VERSION	DATE	CHANGE DESCRIPTION
2.6	2016-09-09	• Section 5: New message NQ: Quality Market Maker Notification • Section 5.32: Modified Post Trading Instructions field (O/R) • Section 7: New error code (0407)
2.7	2016-11-07	• Floor Trade - Section 7: Added 2 error codes (0123 = Floor Trade Not Allowed, 0124 = InsufficientSurrender quantity)
2.8	2017-06-13	Section 6 – Field Types • Special Price Term: Value X updated to include Qualified Contingent Cross Order • Special Trade Indicator: Value D added : Customer Cross Order or Qualified Contingent Cross Order
2.9	2017-11-24	• Section 1: Protocol version B3 • Section 5.22: NL Message (Leg Number length 2 bytes) • Section 5.32: Update to Quantity field for IOI • Section 5.35: ON message, new field “Enabled” • Section 6: Special Price Term updated for IOI, Protocol, Leg updated
2.10	2018-04-09	• General editing (new logo, added 2.1 List of Messages, moved Section 4 - Data Type to Section 2.3 – Data Type) • Section 5: Duration Type (Value A= AuctionOrKill)
2.11	2018-06-27	• New Sections: 4.13 KT Complex Order Auction Acknowledgement and 4.37 OT Complex Order Auction Entry
2.12	2018-09-28	• Protocol version B3 on front cover • Section 2.3.3: Additional restrictions • Sections 4.10, 4.36, 4.37 (Messages KN, ON, OT): Updates of Number of Legs • Section 5: Leg number field updated to 12, Open/Close and Post-Trading Instruction, IML Handling, Special Trade Indicator fields updated • Section 6: New error code (0310)
2.13	2020-01-21	• Section 5: Field ‘Special Trade Indicator’, added value ‘R’ for Manual QOO • Field ‘IML Handling’ : Removed ‘Combined Order Type’ wording. • Fields Additional Quantity & Quantity Term : added Surrender Qty as supported for Facilitation and Floor Trade. • Section 5: Add a new type ‘MM CAT UserTime ‘ with the definition specified in the solution of the ‘BMR20-0003 – Add Quote TimeStamp in CAT files’ • Section 2.3.1 Incoming Messages Header: Field ‘User Time’, change to ‘optional’, change ‘Field Type’ to ‘CAT UserTime’. • Removed Previous Historical Changes prior to 2012-05-30

VERSION	DATE	CHANGE DESCRIPTION
2.14	2020-02-20	• Revert back the modification done in v2.13 on the field ‘MM CAT UserTime’ in the SAIL Incoming header. • Sections 4.3 GC Global Cancellation, 4.4 GZ User Global Cancellation & Section 4.38 Q<i>: Bulk Quote: Added the field ‘MM CAT Usertime’. • Section 5 Field Types: Modified the definition of the field ‘MM CAT UserTime’
2.15	2020-05-26	• Added MIP for Facilitation • Added message type ‘GZ’ in ‘KO’ ack from. • Added Section 7: Password encoding.
2.16		• Added precision for ClientOrderId in Owner Data
2.17	2021-04-23	Support of SubAccount using the PostTradeInstructions • Section 4.1 - Added PostTradingInstructions in message type BD: BulkQuoteData • Section 4.33 - Added PostTradingInstructions in message type OI: Improvement Order Entry • Section 5 – Addition of SubAccount (MMID) in PostTradingInstructions with an example • Removed NI: Instrument State Change message as it is no longer dessiminated by BOX The following are corrections to the specs for accuracy. They are not related to any changes to the message format and fields: • 4.3 – Removed “orders” from definition of message type GC: Global Cancellation • Section 4.4 – Added a definition for message type GZ: User Global Cancellation • Section 4.7 – Removed “orders” from definition of message type KG: Global Cancellation Confirmation • Section 4.8 – Corrected definition of message type: KI Improvement Order Acknowledgement • Section 4.9 – Corrected definition of message type KM: Order Modification Acknowledgement with proper MessageType KM • Section 4.10 – Corrected definition of message type KN: Complex Order Instrument Acknowledgement • Section 4.13 – Corrected definition of message type KT: Complex Order Auction Acknowledgment • Section (4.18, 4.19, 4.20) – Corrected to “Outgoing” message types • Section 4.29 – Corrected definition of message type NY: Leg Execution Cancellation Notice • Section 4.30 – Added other types of auction and customer cross orders to definition of message type OA: Auction Entry • Section 4.3.6 – Corrected Buyer and Seller Post Trade Instructions as optional fields

Version	Date	Change Description
2.18	2022-05-20	Section 3.5 – Added information related to usage of TI (Hearbeat) message
2.19	2022-06-03	Support of complex order instrument up to 16 legs – impacted messages: • Section 4.10 - KN: New Complex Order Instrument Acknowledgement • Section 4.35 - ON: New Complex Order Instrument • Section 4.36 - OT: Complex Order Auction Entry
2.20	2022-12-20	Section 6 • Added new Error Code 0311 (Quote Price has locked or crossed the opposite NBBO Price)
2.21	2023-11-20	Section 2.3.1 • Added section on reset of User Sequence ID after 99999999 Section 5 • Updated definition of User Sequence ID

VERSION	DATE	CHANGE DESCRIPTION
2.22	2024-04-23	Introduction of **new protocol version B7** to support “Additional Client Memo” New field “Additional Client Memo” in the following message types: • OE: Order Entry • OM: Order Modification • OI: Improvement Order Entry • OD: Directed Order Acception • KE: Order Acknowledgment • KM: Order Modification Acknowledgement • KI: Improvement Order Acknowledgement • KT: Complex Order Acknowledgement • KZ: Order Cancellation Acknowledgment • NT: Execution Notice • NX: Execution Cancellation Notice • NL: Leg Execution Notice • NY: Leg Execution Cancellation Notice • NZ: Order Cancellation Notice Sections updated: • Section 4.6 KE: Order Acknowledgement • Section 4.8 KI: Improvement Order Acknowlegment • Section 4.9 KM: Order Modification Acknowledgement • Section 4.13 KT: Complex Order Auction Acknowledgement • Section 4.15 KZ: Order Cancellation Acknowledgement • Section 4.22 NL: Leg Execution Notice • Section 4.25 NT: Execution Notice • Section 4.31 OD: Directed Order Acceptation • Section 4.32 OE: Order Entry • Section 4.33 OI: Improvement Order Entry • Section 4.34 OM: Order Modification New fields “BuyingAdditionalClientMemo” and “SellingAdditionalClientMemo” in the following message types: • OA: Auction Entry • OT: Strategy Auction Entry Sections updated: • Section 4.30 OA: Auction Entry • Section 4.36 OT: Complex Order Auction Entry Added definition of “Additional Client Memo”: • Section 5 Field Types

Table of Contents

Section 1 Introduction

The SAIL Specifications Guide for BOX explains the protocol required by Participants to trade on a SOLA® platform.

SAIL is a daily protocol, meaning that all counters and sequence IDs are reset everyday.

The current Protocol version is B7.

1.1 Scope

The scope of this document is to provide a detailed description of the BOX SOLA Access Information Language (SAIL). This includes but is not limited to:

- Message Format and Delivery
- Session Protocol
- Application Messages, which include:
  - Technical Messages
  - Business Messages

This document provides information and does not in any way provide engineering or other professional services.

1.2 Audience

This document targets business, programmer, and network analysts who are responsible for determining the technical solutions needed to interface with SAIL.

1.3 Related Documents

BOX SAIL Business Design Guide

1.4 BOX Contact

Market Operation Center Support / Technical Help Desk
Toll Free: 1-866-768- 8845
boxmoc@boxoptions.com

Section 2 Overview

The SAIL protocol is defined at two levels: technical and business. The technical level deals with the delivery of data while the business level defines business-related data content.

2.1 List of Messages

This table contains the SAIL messages supported by BOX.

TYPE	SAIL MESSAGES
Technical	TC: User Connection TD: User Disconnection TA: Disconnection Instruction TH: Heartbeat (Question) TI: Heartbeat (Response) TO: Out of Sequence TE: Technical Error Notice TM: Disconnection Instruction Acknowledgement TK: Connection Acknowledgement TL: Disconnection Acknowledgement TT: end of Transmission
Business	BD: Bulk Quote Data ER: Error Notice GC: Global Cancellation GZ: User Global Cancellation KD: Bulk Quote Data Acknowledgement KE: Order Acknowledgement KG: Global Cancellation Confirmation KI: Improvement Order Acknowlegment KM: Order Modification Acknowledgement KN: New Complex Order Instrument Acknowledgement KO: Standard Acknowledgement KQ: Directed/Routed Order Rejection and Quote Resubmission Message KT: Complex Order Auction Acknowledgement KY: Auction or Improvement Cancellation Acknowledgement KZ: Order Cancellation Acknowledgement LA: Bulk Quote Acknowledgement MU: TraderStatus NC: Directed Order Cancellation Notice

TYPE	SAIL MESSAGES
	ND: Directed Order Notice NE: Excluded Instrument Notice NG: Group State Change NI: Instrument State Change NL: Leg Execution Notice NP: Cancellation of All Quotes Notices NQ: Quality Market Maker Notification NT: Execution Notice NU: Quote Notice NX: Execution Cancellation Notice NY: Leg Execution Cancellation Notice NZ: Order Cancellation Notice (by system) OA: Auction Entry OD: Directed Order Acceptation OE: Order Entry OI: Improvement Order Entry OM: Order Modification ON: New Complex Order Instrument OT: Complex Order Auction Entry Q<i>: Bulk Quote RE: Executing Participant Connection RF: Executing Participant Disconnection RP: Market Maker Protection Subscription RQ: Request for Quote XE: Order Cancellation XI: Improvement Order Cancellation

2.2 Message Format and Delivery

The following sections summarize general specifications for constructing and transmitting BOX SOLA Access Information Language protocol messages.

2.2.1 Message Format

All technical and business SAIL messages start with 4 bytes of Endian coded data indicating message length. An End of Text (ETX) character is added after the last character of each business message, which may be padded with spaces of up to three bytes for alignment, making the total length of each message a multiple of four bytes.

Example:

`<0021>`[1]	`<xxxxxxxxxxxxxxxxxxxxx>`[2]	`<ETX>`[3]	`<  >`[4]

1. 4 bytes indicating length of business message. Codification little-Endian, right justified, left-filled with zeroes.
2. 21 bytes, business message body.
3. ETX (End of Text) character having a value of binary 3.
4. 2 bytes (spaces for alignment).

Note: In the above example, the total length of the message is 28 (4 + 21 + 1 + 2).

2.2.2 Required Fields

Each message within the protocol is comprised of fields, which are either:

- R = Required
- O = Optional
- C = Conditional (fields that are required based on the presence, or value of other fields).

Systems should be designed to operate only when the required and conditionally required fields are present.

2.3 Data Type

This section defines the SAIL Data Type messages.

2.3.1 Incoming Messages Header

This is the header required on all incoming Participant business messages.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type	Message Type	R
User Time (Local)	Time	O
Trader ID	Trader ID	R
User Sequence ID	User Sequence ID	R

Reset of User Sequence ID after 99999999

After connection for the first time, the Participant is required to send in a User Sequence ID of 1 and increment by 1 for each new business message sent to the Exchange.

When the **maximum User Sequence ID of 99999999** is reached, the Participant is required to **reset their User Sequence ID** by sending 0 (zero) as the next User Sequence ID and increment by 1 for each new business message.

2.3.2 Outgoing Messages Header

This is the header included on all outgoing Exchange messages.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type	Message Type	R
Message Timestamp (Local) (Trading Engine Time)	Time	R
User Sequence ID[1]	User Sequence ID	O
Exchange Message ID	Exchange Message ID	O
Gap Sequence ID	Numeric (2)	R

1. In the Outgoing Messages Header, the User Sequence ID is set for acknowledgement only, and contains the identical User Sequence ID number present in the incoming message or it contains zeroes. Unsolicited messages (trade notice, group state change, instrument state change, etc.) are set to zeroes.

2.3.3 Owner Data

This is not a message. It describes the format of a mandatory order reference for the Participant, the **ClientOrderId,** that may be present within certain messages.

In addition, a free text **Memo** can be added to the owner data field by appending a pound sign (#) to the **ClientOrderId:**

- Any information preceeding the pound sign (#) is the **ClientOrderId**.
- Any information after the pound sign (#) is the **Memo**

If no pound (#) sign is found, the whole field is assumed to be the **ClientOrderId**.

FIELD NAME	FIELD TYPE	REQ/OPT
ClientOrderId	ClientOrderId	R
#		O
Memo	Memo	O

Restrictions:

The **Ownerdata** must contain at most one # (pound sign) character and that it should not contain the following ASCII characters:

- % (percent sign), comma or semi-colon, "" (double quote), '|' (Pipe sign)
- ascii characters in the decimal code ranges between 0 to 31 and 127 and up

The following characters are accepted but are not transferred to OCC on trade submissions: > (greater than), < (less than), '(single quote) or & (ampersand).

If the validation fails, an error message is sent to the participant.

2.3.4 Clearing Data

This is not a message. It describes the format of the Participant's clearing data that must appear on specified messages. This data is used for clearing purposes.

FIELD NAME	FIELD TYPE	REQ/OPT
Clearing Instruction	Clearing Instruction	R
Account Type	AccountType	R
Open/Close	Open/Close	R
Hedge/Spec	Hedge/Spec	R
Clearing Operation Mode	Clearing Operation Mode	R
Clearing Destination	Firm ID	C

The firm specified in the Firm ID field clears the trade if Clearing Operation Mode is set.

Section 3 Technical Messages

This section defines the SAIL Technical Messages.

3.1 TC: User Connection

Incoming

Trader Connection is the first message to be sent by the Participant at the beginning of the day.

FIELD NAME		FIELD TYPE	REQ/OPT
Message Type: TC		Message Type	R
Protocol Version.		Protocol	R
User ID		User ID	R
Password (MD5 Encryption)		Password	R
Session ID		Session ID	O
Time (HHMMSS)		Time	R
Exchange Message ID		Exchange Message ID	O
Inactivity Interval		Inactivity Interval	O
Number of Message types to be received[1]		Numeric (2)	R
(1 to 99 occurrences)	Message types to be received[2]	Message Type	R

1. Indicates the number of message types (specified further in the message) the Participant wants to receive.
2. List of message types requested by the Participant.
   The following messages are sent to the Participant even if they are not part of the list: ER, TE, TO, TH, and TT.

3.2 TD: User Disconnection

Incoming

The User Disconnection message is sent by the Participant to the Exchange when it wants to disconnect from the system.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type: TD	Message Type	R
User ID	User ID	R
Session ID	Session ID	O

3.3 TA: Disconnection Instruction

Incoming

This message is used by a Participant to indicate the instruction(s) to execute if the connection ends.

<table>
<tr><th colspan="2">FIELD NAME</th><th>FIELD TYPE</th><th>REQ/OPT</th></tr>
<tr><td colspan="2">Message Type: TA</td><td>Message Type</td><td>R</td></tr>
<tr><td colspan="2">Number of Instructions present in the message</td><td>Numeric (2)</td><td>R</td></tr>
<tr><td rowspan="3">1 to 99 occurrences</td><td>Trader ID</td><td>Trader ID</td><td>R</td></tr>
<tr><td>Disconnection Instruction.
Note: Cancel quotes only.
Q: QuotesOnly</td><td>CancellationType</td><td>R</td></tr>
<tr><td>Active: Y (ON) N (OFF)</td><td>YesNoFlag</td><td>R</td></tr>
</table>

3.4 TH: Heartbeat (Question)

Outgoing

This message is sent by the exchange to the participant at the beginning of every Heartbeat period. For each connection, participants are allowed to send a limited number of messages per second.

This message indicates the first message to be processed in the Heartbeat period. If there is no pending message from the participant, the field User Sequence ID represents the next expected User Sequence ID.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type: TH	Message Type	R
User Sequence ID (first User Sequence ID for next/current Heartbeat period)	User Sequence ID	R
Last Exchange Message ID (sent to Participant)	Exchange Message ID	R
Time (Local)	Time	R

3.5 TI: Heartbeat (Response)

Incoming

A TI message should only be sent in response to a TH message sent by the exchange.

A *Heartbeat* message sent by the exchange to the participant at the beginning of every Heartbeat period must receive a response from the participant application within “**n**” units specified in the *Connection* message. The response can be any message. If a *Heartbeat* is not responded to, the participant is considered as not connected and the disconnection instructions specified in the Disconnection Instructions message (TA: Disconnection Instruction) are executed.

Message TI is used to respond to a *Heartbeat* (TH message) if no other message needs to be sent. Message is identical to the received Heartbeat (TH) message.

This message has the same number of bytes and format as TH: Heartbeat (Question).

Message type must be TI, while other values can be the same as last received TH message.

3.6 TO: Out of Sequence

Outgoing

This message is sent by the exchange when the User Sequence ID in the message is out of sequence. Participant must reconnect.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type: TO	Message Type	R
Received User Sequence ID	User Sequence ID	R
Expected Last User Sequence ID	User Sequence ID	R
Message Time (Local)	Time	R

3.7 TE: Technical Error Notice

Outgoing

The message is sent by the exchange when a technical error is encountered in the message sent by the Participant.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type: TE	Message Type	R
Received Message Type[1]	Message Type	R
Preceding User Sequence ID received (zeroes if none)	User Sequence ID	R
Error Code	Error Code	R
Error Position	Numeric (4)	R
Error Message	String (100)	R

FIELD NAME	FIELD TYPE	REQ/OPT
Start of message in error	String (100)	R

1. Received Message type in Error

3.8 TM: Disconnection Instruction Acknowledgement

Outgoing

This message is sent to acknowledge receipt of TA: Disconnection Instruction message.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type: TK, TM, TL	Message Type	R
Current Session ID	Session ID	R
Last User Sequence ID received	User Sequence ID	O

3.9 TK: Connection Acknowledgement

Outgoing

This message is sent to acknowledge receipt of a TC: User Connection message.

This message has the same number of bytes and format as the TM: Disconnection Instruction Acknowledgement message.

3.10 TL: Disconnection Acknowledgement

Outgoing

This message is sent to acknowledge receipt of a TD: User Disconnection message.

This message has the same number of bytes and format as the TM: Disconnection Instruction Acknowledgement message.

3.11 TT: End of Transmission

Outgoing

This message is sent to indicate that the session's transmission is completed. Participant is disconnected.

FIELD NAME	FIELD TYPE	REQ/OPT
Message Type: TT	Message Type	R
Ended Session ID	Session ID	R
Last User Sequence ID received If no business message has been received on this connection, this field is equal to zeroes.	User Sequence ID	O
Time	Time	R

Section 4 Business Messages

This section defines the SAIL Business messages. The messages are listed in alphabetical order.

Note: In the following business messages, the fields marked as 'Fillers' are reserved for Exchange usage.

4.1 BD: Bulk Quote Data

Incoming

This message contains specific protection data and trader's data valid for further Bulk Quotes. A new BD message replaces previously entered data.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: BD)		R
Group	Group ID	R
Clearing Data		R
Owner Data		R
Filler (must be blank)	String (2)	R
Filler (must be blank)	String (8)	R
Filler (must be blank)	String (2)	R
Calculation Time Interval	Calculation Time Interval	O
Maximum Total Volume	Numeric (8)	O
Maximum Total Value	Numeric (8)	O
Maximum Delta Volume	Numeric (8)	O

FIELD NAME	FIELD TYPE	REQ/OPT
Maximum Delta Value	Numeric (8)	O
Percent Of Quote	Numeric (8)	O
Post Trading Instructions	Post Trade Instructions	O

4.2 ER: Error Notice

Outgoing

This message is an error notification. It is sent in response to a message from the Participant when the system cannot process it.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: ER)		R
Error Code	Error Code	R
Error Description	String (100)	R

4.3 GC: Global Cancellation

Incoming

This message is sent by the Participant when he wants to cancel his quotes

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: GC)		R
Group	Group ID	R
Type of Cancellation Q: QuotesOnly	CancellationType	R

FIELD NAME	FIELD TYPE	REQ/OPT
MM CAT UserTime	MM CAT UserTime	O

4.4 GZ: User Global Cancellation

Incoming

THIS MESSAGE IS SENT BY THE PARTICIPANT WHEN HE WANTS TO CANCEL HIS QUOTES OR ORDERS ON A SINGLE INSTRUMENT OR ALL INSTRUMENTS OF A GROUP AND/OR BY ACCOUNT TYPES.FIELD NAME	FIELD TYPE	REQ/OPT	
Incoming Messages Header (Message Type: GZ)		R	
Group	Group ID	O	
Instrument	Instrument ID	O	
Type of Cancellation	CancellationType	R	
AccountTypeFilter	String (8)	O	
MM CAT UserTime	MM CAT UserTime	O	

4.5 KD: Bulk Quote Data Acknowledgement

Outgoing

This message is used to acknowledge a BD: Bulk Quote Data message.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KD)		R
Group	Group ID	R

Field Name	Field Type	Req/Opt
Trader ID	Trader ID	R
Quote ID (identifies trader's quote on this group)	Order ID	R

4.6 KE: Order Acknowledgement

Outgoing

This message is used to acknowledge an

OE: Order Entry message.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KE)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Order ID	Order ID	R
Status	Status	R
Verb (Side)	Verb	R
Quantity	Quantity	R
Assigned Price	Assigned Price	R
Clearing Data		R
Owner Data		R
Original Order ID	Original Order ID	R
Filler	Numeric (6)	R
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

4.7 KG: Global Cancellation Confirmation

Outgoing

This message is used to acknowledge a GC: Global Cancellation message and is sent to a Participant when his quotes have been cancelled.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KG)		R
Group	Group ID	R
Trader ID	Trader ID	R
Type of Cancellation Only ’Q’ = QuotesOnly can be returned.	CancellationType	R

4.8 KI: Improvement Order Acknowlegment

Outgoing

This message is used to acknowledge an OA: Auction Entry or an OI: Improvement Order Entry message.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KI)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Order ID	Order ID	R
Status	Status	R
Verb (Side)	Verb	R
Quantity	Quantity	R

FIELD NAME	FIELD TYPE	REQ/OPT
Assigned Price	Assigned Price	R
Clearing Data		R
Owner Data		R
Original Order ID	Original Order ID	R
Auction ID (only if message type is KI or else zeroes)	Auction ID	R
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

4.9 KM: Order Modification Acknowledgement

Outgoing

This message is used to acknowledge an OM: Order Modification.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KM)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Order ID	Order ID	R
Status	Status	R

FIELD NAME	FIELD TYPE	REQ/OPT
Verb (Side)	Verb	R
Quantity	Quantity	R
Assigned Price	Assigned Price	R
Clearing Data		R
Owner Data		R
Original Order ID	Original Order ID	R
Filler	Numeric (6)	R
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

4.10 KN: New Complex Order Instrument Acknowledgement

Outgoing

This message is used to acknowledge the creation of a new Complex Order instrument as requested via an ON: New Complex Order Instrument message.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KN)		R
Strategy Group	Group ID	R
Strategy Instrument ID	Instrument ID	R
Creation Status	String (1)	R

FIELD NAME		FIELD TYPE	REQ/OPT
Number of Legs		Numeric (2)	R
2 to 16 occurrences	Leg Group	Group ID	R
	Leg Instrument ID	Instrument ID	R
	Leg Verb	Verb	R
	Filler (must be spaces)	String (1)	R
	Leg Quantity (ratio)	Quantity	R

4.11 KO: Standard Acknowledgement

Outgoing

This message is sent as an acknowledgement for the following messages:

- RE: Executing Participant Connection
- RF: Executing Participant Disconnection
- RQ: Request for Quote
- RP: Market Maker Protection Subscription
- GZ: User Global Cancellation

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KO)		R
Trader ID	Trader ID	R
Original Message Type (RE, RF, RQ, RP, GZ)	Message Type	R

4.12 KQ: Directed/Routed Order Rejection and Quote Resubmission Message

Incoming

This message is sent by an executing Participant to reject a DO.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: KQ)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Order ID	Order ID	R
Rejection Code	Rejection Code	R
Quote Quantity	Quantity	O
Quote Price	Price	O

4.13 KT: Complex Order Auction Acknowledgement

Outgoing

This message is used to acknowledge an OT: Complex Order Auction Entry.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KT)		R
Group	Group ID	R
Instrument	Instrument ID	R

FIELD NAME	FIELD TYPE	REQ/OPT
Trader ID	Trader ID	R
Order ID	Order ID	R
Status	Status	R
Verb (Side)	Verb	R
Quantity	Quantity	R
Assigned Price	Assigned Price	R
Clearing Data		R
Owner Data		R
Original Order ID	Original Order ID	R
Auction ID	Auction ID	R
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

4.14 KY: Auction or Improvement Cancellation Acknowledgement

Outgoing

This message is used to acknowledge an XI: Improvement Order Cancellation message pertaining to Solicitation Facilitation.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KY)		R

FIELD NAME	FIELD TYPE	REQ/OPT
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Order ID	Order ID	R
Status	Status	R
Verb (Side)	Verb	R
Quantity	Quantity	R
Assigned Price	Assigned Price	R
Clearing Data		R
Owner Data		R
Original Order ID	Original Order ID	R
Auction ID (only if message type is KI or else zeroes)	Auction ID	R

4.15 KZ: Order Cancellation Acknowledgement

Outgoing

This message is used to acknowledge an XE: Order Cancellation message.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: KZ)		R
Group	Group ID	R

FIELD NAME	FIELD TYPE	REQ/OPT
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Order ID	Order ID	R
Status	Status	R
Verb (Side)	Verb	R
Quantity	Quantity	R
Assigned Price	Assigned Price	R
Clearing Data		R
Owner Data		R
Original Order ID	Original Order ID	R
Auction ID (only if message type is KI or else zeroes)	Auction ID	R
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

4.16 LA: Bulk Quote Acknowledgement

Outgoing

This message acknowledges the receipt of a Q<i> : Bulk Quote message.

<table>
<tr><th colspan="2">FIELD NAME</th><th>FIELD TYPE</th><th>REQ/OPT</th></tr>
<tr><td colspan="2">Outgoing Messages Header (Message Type: LA)</td><td></td><td>R</td></tr>
<tr><td colspan="2">Group</td><td>Group ID</td><td>R</td></tr>
<tr><td colspan="2">Quote ID (identifies trader's quote on this group)</td><td>Order ID</td><td>R</td></tr>
<tr><td colspan="2">Number of Quotes in Error</td><td>Numeric (3)</td><td>R</td></tr>
<tr><td rowspan="2">1 to 280 occurrences</td><td>Quote number</td><td>Numeric (3)</td><td>R</td></tr>
<tr><td>Error code</td><td>Error Code</td><td>R</td></tr>
</table>

Note: Exchange Message ID = Blanks (not included in retransmitted messages).

4.17 MU: TraderStatus

Outgoing

This message indicates the the status of a trader.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: MU)		R
Trader ID	Trader ID	R
TraderLockOut	Trader Lock Status	R
RiskTeamLockOut	Trader Lock Status	R

4.18 NC: Directed Order Cancellation Notice

Outgoing

This message is sent to an Executing Participant.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NC)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Verb (Side)	Verb	R
Quantity	Quantity	R
Price	Price	R
Referenced Order ID	Order ID	R

4.19 ND: Directed Order Notice

Outgoing

This message is a Directed Order notice sent to an Executing Participant.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: ND)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R

FIELD NAME	FIELD TYPE	REQ/OPT
Verb (Side)	Verb	R
Quantity	Quantity	R
Price	Price	R
Referenced Order ID	Order ID	R

4.20 NE: Excluded Instrument Notice

Outgoing

This message is sent when a Participant is receiving a NP: Cancellation of All Quotes Notice message with the “Type of Cancellation” set to “W” (Cancel Pending). The NE: Excluded Instrument Notice message indicates which instruments still have active quotes in the book that are pending to be cancelled. When the quotes on these instruments are later cancelled, another NP message is issued to notify the Participant.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NE)		R
Group	Group ID	R
Filler	String (2)	R
Trader ID	Trader ID	R
Filler	String (2)	R
NbOfInstruments	Numeric (4)	R
1 to 9999 occurrences: Instrument	Instrument ID	R

4.21 NG: Group State Change

Outgoing

This message indicates a Group state change.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NG)		R
Group	Group ID	R
Group State	Group State	R

4.22 NL: Leg Execution Notice

Outgoing

This message reports the execution for a leg of Complex Order instrument trade.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NL)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Reference ID	Order ID	R
Verb (Side)	Verb	R
Quantity Traded	Quantity	O
Trade Price	Price	R
Time Trade HHMMSS	Time	R
Clearing Data		R
Owner Data		R
Special Trade Indicator	Special Trade Indicator	O
Price Type	Price Type	R
Trade Type	Trade Type	R
Auction ID	Auction ID	R

Field Name	Field Type	Req/Opt
Trade Number	Trade Number	R
Trade Memo	String (50)	O
Original Reference ID	Order ID	R
ID Code for the Counterpart Participant	Firm ID	R
Liquidity Status	Liquidity Status	R
Strategy Group	Group ID	O
Strategy Instrument ID	Instrument ID	O
Strategy Verb (side)	Verb	O
Strategy Trade Number	Trade Number	O
Leg Number	Leg Number (2)	O
Counterpart Account Type	Account Type	R
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (1)	O

4.23 NP: Cancellation of All Quotes Notices

Outgoing

This message is an advice sent to a Participant when his quotes have been cancelled (either by the system or at his request).

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NP)		R
Group[1]	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Quote Cancel Reason	Quote Cancel Reason	R

1. Indicates the group of instruments for which the quotes have been cancelled.

4.24 NQ: Quality Market Maker Notification

Outgoing

This message notifies Market Makers of their qualified quantity for the QMM Step at the end of the auction.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NQ)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Auction ID	Auction ID	R
Verb	Verb	R
Auction Quantity	Quantity	R

FIELD NAME	FIELD TYPE	REQ/OPT
Auction Price	Price	R
Quote Quantity	Quantity	R
Quote Price	Price	R
Qualified Quantity	Quantity	R

4.25 NT: Execution Notice

Outgoing

This message is an execution notice for a trade.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NT)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Reference ID (Order ID or Quote ID)	Order ID	R
Verb (Side)	Verb	R
Quantity Traded	Quantity	R
Trade Price	Price	R
Time of the Trade HHMMSS	Time	R
Clearing Data		R

FIELD NAME	FIELD TYPE	REQ/OPT
Owner Data		R
Special Trade Indicator	Special Trade Indicator	R
Price Type	Price Type	R
Trade Type	Trade Type	R
Auction ID	Auction ID	O
Trade Number	Trade Number	R
Trade Memo	Trade Memo	R
Original Reference ID	Original Reference ID	R
ID Code for the Counterpart Participant	Firm ID	R
Liquidity Status	Liquidity Status	R
Counterpart Account Type	Account Type	O
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (1)	O

4.26 NU: Quote Notice

Outgoing

This message is sent by the trading engine when a quote is shelved or unshelved when an Executing Participant rejects to start an auction when receiving a Directed Order.

FIELD NAME	FIELD TYPE	REQ/OPT
Outgoing Messages Header (Message Type: NU)		R
Group	Group ID	R
Instrument	Instrument ID	R
Trader ID	Trader ID	R
Reference ID (Quote or Order ID)	Order ID	R
Verb (Side)	Verb	R
Order Type	Order Type	R
Action	Action	R
New quantity	Quantity	R
New price	Price	R
Previous quantity	Quantity	R
Previous price	Price	R
Auction ID	Auction ID	R
Original Reference ID (Quote or Order ID)	Order ID	R

4.27 NX: Execution Cancellation Notice

Outgoing

This message is an execution cancellation notice and has the same number of bytes and format as the NT: Execution Notice message.

4.28 NY: Leg Execution Cancellation Notice

Outgoing

This message reports the execution cancellation notice for a leg of the strategy trade. This message has the same number of bytes and format as the NL: Leg Execution

4.29 NZ: Order Cancellation Notice (by system)

Outgoing

This message is used when an order is cancelled by Market Operation or by the system (expiration).

This message has the same number of bytes and format as the KZ: Order Cancellation Acknowledgement message.

4.30 OA: Auction Entry

Incoming

This message is used to start an auction (Guaranteed Auction PIP, Facilitation Auction, Solicitation Auction) or to submit a cross order (Customer Cross or Qualified Contingent Cross).

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: OA)		R
Group	Group ID	R
Instrument	Instrument ID	R
Verb (Side)	Verb	R
Quantity	Quantity	R
Price	Price	R
Buying Clearing Data		R
Selling Clearing Data		R

FIELD NAME	FIELD TYPE	REQ/OPT
Buying Owner Data		R
Selling Owner Data		R
IML Handling	IML Handling	O
Special Price Term	Special Price Term	R
Additional Price[1]	Price	O
Quantity Term	Quantity Term	O
Additional Quantity	Additional Quantity	O
Buying Post Trading Instruction	Post Trade Instruction	O
Selling Post Trading Instruction	Post Trade Instruction	O
Buying Additional Client Memo	Additional Client Memo	O
Selling Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

1. Must be left empty for Solicitation

4.31 OD: Directed Order Acceptation

Incoming

This message is sent by an Executing Participant to accept a Directed Order.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: OD)		R
Group	Group ID	R
Instrument	Instrument ID	R
Referenced Order ID	Order ID	R
Auction Starting Price	Price	R
Clearing Data (dealer)		R
Owner Data (dealer)		R
Additional Price	Price	O
Quantity Term	Quantity Term	O
Post Trading Instruction	Post Trade Instruction	O
Additional Quantity	Quantity	O
Additional Client Memo	Additional Client Memo	O

4.32 OE: Order Entry

Incoming

This message is used to enter a Regular Order, Directed Order, Preference Order, and Indication of Interest in the system.

Field Name	Field Type	Req/Opt
Incoming Messages Header (Message Type: OE)		R
Group	Group ID	R
Instrument	Instrument ID	R
Price Type	Price Type	R
Verb (Side)	Verb	R
Quantity	Quantity (Optional when IOI)	C
Price	Price	C
Special Price Term	Special Price Term	R
Filler (must be blank)	String (10)	R
Quantity Term	Quantity Term	O
Additional Quantity	Additional Quantity	C
Duration Type	Duration Type	R
GTD Date[1]	Date	C
Executing Participant[2]	Firm ID	C

FIELD NAME	FIELD TYPE	REQ/OPT
IML Handling	IML Handling	R
Clearing Data		R
Owner Data		R
Post Trading Instructions	Post Trade Instructions	O
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

1. Must be present if Duration Type is D. Represents the order's last active day.
2. Contains the digit portion of the Participant ID of the Participant to whom the Directed/Routed Order is submitted. If not used, it must be set to blanks.

4.33 OI: Improvement Order Entry

Incoming

This message contains information related to an Improvement during an Auction only. It is used to either enter or modify an Improvement order.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: OI)		R
Group	Group ID	R
Instrument	Instrument ID	R
Verb (Side)	Verb	R
Quantity Sign	Quantity Sign	R
Quantity	Quantity	R

FIELD NAME	FIELD TYPE	REQ/OPT
Price	Price	R
Auction ID	Auction ID	R
Filler	String (17)	R
Clearing Data		R
Owner Data		R
Post Trading Instructions	Post Trade Instructions	O
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

4.34 OM: Order Modification

Incoming

This message is used to modify a regular order entered through an OE: Order Entry message. The modified order must be booked.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: OM)		R
Group	Group ID	R
Instrument	Instrument ID	R
Price Type	Price Type	R
Verb (Side)	Verb	R

FIELD NAME	FIELD TYPE	REQ/OPT
Quantity Sign	Quantity Sign	R
Quantity	Quantity	R
Price	Price	C
Special Price Term	Special Price Term	R
Filler (must be blank)	String (10)	R
Filler (must be blank)	String (1)	R
Filler (must be blank)	String (8)	R
Duration Type	Duration Type	R
GTD Date[1]	Date	C
Firm ID	Firm ID	R
IML Handling	IML Handling	R
Modified Order ID[2]	Order ID	R
Clearing Data		R
Owner Data		R
Post Trading Instruction	Post Trade Instruction	O
Additional Client Memo	Additional Client Memo	O
Filler (must be blank)	String (4)	O

1. Must be present if Duration Type is D. Represents the order's last active day.
2. Order ID of the order being modified.

4.35 ON: New Complex Order Instrument

Incoming

This message is sent when a Participant is requesting to create a new Complex Order instrument.

FIELD NAME		FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: ON)			R
Enabled (Y (Yes) N (No))		YesNoFlag	R
Number of Legs		Numeric (2)	R
2 to 16 occurrences	Leg Group	Group ID	R
	Leg Instrument ID	Instrument ID	R
	Leg Verb	Verb	R
	Filler (must be spaces)	String (1)	R
	Leg Quantity (ratio)	Quantity	R

4.36 OT: Complex Order Auction Entry

Incoming

This message contains information related to a strategy auction entry with leg prices.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: OT)		R
Group	Group ID	R
Instrument	Instrument ID	R

FIELD NAME	FIELD TYPE	REQ/OPT
Verb (Side)	Verb	R
Quantity	Quantity	R
Price	Price	O
Buying Clearing Data		R
Selling Clearing Data		R
Buying Owner Data		R
Selling Owner Data		R
IML Handling	IML Handling	R
Special Price Term	Special Price Term	R
Additional Price	Price	R
QuantityTerm	Quantity Sign	R
Additional Quantity	Quantity	R
Buying Post Trading Instruction	Post Trade Instruction	O
Selling Post Trading Instruction	Post Trade Instruction	O
Buying Additional Client Memo	Additional Client Memo	O
Selling Additional Client Memo	Additional Client Memo	O

FIELD NAME		FIELD TYPE	REQ/OPT
Filler (must be blank)		String (4)	O
NbLegs		Numeric (2)	R
2 to 16 occurrences	LegGroup	Group ID	R
	LegInstrument	Instrument ID	R
	TradeLegPrice	Price	R

4.37 Q<i>: Bulk Quote

Incoming

This is a set of messages to enter Bulk Quotes. The second letter of Message Type indicates the quantity and price formats.

<i> = A to P

X\Y [1]	2	4	6	8
4	A	E	I	M
6	B	F	J	N
8	C	G	K	O
10	D	H	L	P

1. X = Price size (including format indicator) and Y = Quantity size

Example: A QC Message is formatted with Price 8 bytes in length and Quantity 2 bytes in length.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: Q<i>)		R

FIELD NAME		FIELD TYPE	REQ/OPT
Group		Group ID	R
Quote ID (identifies trader's quote on this group)		Order ID	R
MM CAT UserTime		MM CAT UserTime	O
Number of Quotes		Numeric (3)	R
1 to 280 occurrences	Group	Group ID	R
	Instrument	Instrument ID	R
	Verb (Side)	Verb	R
	Quantity Sign (+ - =)	Quantity Sign	R
	Quantity	Quantity	O
	Price	Price	O

4.38 RE: Executing Participant Connection

Incoming

This message is sent when an Executing Participant wants to connect, i.e., is ready to receive a Directed Order.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: RE)		R

4.39 RF: Executing Participant Disconnection

Incoming

This message is sent when an Executing Participant wants to disconnect, i.e., does not want to receive Directed Orders anymore.

This message has the same number of bytes and format as the RE: Executing Participant Connection message.

4.40 RP: Market Maker Protection Subscription

Incoming

This message has two purposes:

Specify to the BOX trading system what kind of Market Maker Protection should be enabled (standard or advanced)

Reactivate quoting when Advanced Market Maker Protection has been triggered.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: RP)		R
Group	Group ID	R
Protection Type (Advanced/Normal)	Protection Code	R

4.41 RQ: Request for Quote

Incoming

This message is sent by the Participant to broadcast a Request for Quote message to other Participants.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: RQ)		R
Group	Group ID	R
Instrument	Instrument ID	R
Quantity[1]	Quantity	O

4.42 XE: Order Cancellation

Incoming

This message is sent by the Participant to cancel an order present in the book.

FIELD NAME	FIELD TYPE	REQ/OPT
Incoming Messages Header (Message Type: XE)		R
Group	Group ID	R
Instrument	Instrument ID	R
Cancelled Order ID	Order ID	R

4.43 XI: Improvement Order Cancellation

Incoming

This message is sent by the Participant to cancel an existing Improvement Order for an Auction.

This message has the same number of bytes and format as the XE: order Cancellation message.

Section 5 Field Types

The following table displays the format, length, description, and values list for each field type (listed in alphabetical order).

In the Format column, note that: A = Alphabetic, N = Numeric, X = Alphanumeric.

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Account Type	X	1	• 6: Public Customer • 7: Broker Dealer • 8: Market Maker • T: Professional Customer • W: Broker Dealer cleared as Customer X: Away Market Maker
Action	A	1	• Q: Quantity Update • S: Shelved • U: Un-shelved
Additional Client Memo	X	16	Free format text string can be used to transmit additional information for processing. Left justified, right blank filled Format rules: • None of the following ascii characters: '%' (percent sign), ',' (comma), ';' (semi-colon), '#' (pound sign), ' " ' (double-quote) and '|' (pipe) • ASCII characters in the decimal code ranges between 0 and 31 and 127 and up are **not** permitted.
Additional Quantity	N	8	• For OA Auction Entry, indicates the number of contracts the InitO is willing to surrender. For Solicitation, Facilitation and Floor Trade it is used when the field Quantity Term is set to 'B'. It must contain a quantity less than or equal to the quantity being auctioned.
Assigned Price	X	10	Price assigned by the Trading System. Refer toPrice for format details.
Auction ID	N	6	Identifies the number of an auction (Improvement Phase). It is a sequential number which is unique per Instrument and per Trading Day. Current Auction identifier if the trade occurred during an auction.

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Calculation Time Interval	N	8	Expressed in number of milliseconds
Cancellation Type	A	1	Type of cancellation • A: All • L: Locked • O: OrdersOnly Q: QuotesOnly
Clearing Instruction	X	12	Client Account Number Following characters are accepted but are not transferred to OCC on trade submissions: > (greater than), < (less than), ‘ (single quote), “ (double quote), & (ampersand)
ClientOrderId	X	20	Client Order Id Unique identifier for orders as assigned by participants. Trailing blanks are not significant.
Creation Status	A	1	Indicates the status of the Complex Order Instrument request • C: Created as specified in the ON: New Complex Order Instrument request. • M: Created but with modifications. 2 scenarios exist: i. Complex Order Instruments are created using the smallest ratio unit possible. Ex: Request to create the instrument 10A+20B will result in a Complex Order instrument of 1A+2B being created. ii. The same Complex Order instrument exists but in reverse order. Ex.: Client requests to create the instrument A-B will result in the instrument B-A if this one already exists. The order verb will need to be reversed as well (Buy A-B is equal to Sell B-A).
Clearing Operation Mode			Indicates the pre-posting action to be taken by the clearing system when a trade has occurred. When this field is filled, the field 'Clearing Destination' must also be filled. • Space: No clearing operation • C: CMTA (Clearing Member Trading Agreement), firm will be defined in the Clearing Destination field • G: Give-Up Firm will be defined in the Clearing Destination field I: Both CMTA and Give-Up firms will be defined in the Post Trading Instruction field

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Date	X	8	Year, Month and Day (YYYYMMDD)
Duration Type	A	1	• A: Auction or Kill • D: Order is Valid until GTD date (GTD) • E: Immediate order, cannot be booked (FAK) • F: Valid until instrument expiration (GTC) • J: Valid for the current Day only (Day) • W: Valid for the current session order only
Enum	X	1	List of values (see message field detail)
Error Code	N	4	Refer to Error Codes for error code definitions.
Error Message	X	100	First 100 characters of an erroneous message
Error Position	N	4	Determines the bytes at which an error has been detected
Exchange Message ID	X	6	Identifies a message sent by the exchange for a Participant connection. It represents the exchange identifier of the message for the current session. It is used in a Connection message as a retransmission starting point. • If equal to zeroes: start from 1st message of the session. • If equal to blanks: start from next message for Participant. • If valid Exchange Message ID: start at this message ID or the next message for the Participant. • If it contains spaces, it means that this field is not subject to re-transmission.
Firm ID	X	4	Identifies a firm referenced in the SOLA® database
YesNoFlag	X	1	• Y: Yes N: No
Gap Sequence ID	N	2	A Sequence Numeric (base 10) used to track gaps and runs from 0 to 99 over and over. If the Participant detects a gap, he has to reconnect with a Trader Connection message.
Group ID	X	2	Group Identification within the system. A Group is composed of instruments and is usually associated with a specific underlying.

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Group State	X	1	This parameter indicates the new status of the group. For message type NG, it contains one of the following values: • B: Post session • C: Consultation Start • F: Consultation End • I: Prohibited • M: Mini-batch • N: Market Operation Center Intervention • O: Opening • P: Pre-opening • S: Continuous Trading Session • Z: Interrupted
Handling Instruction	X	1	Indicates to the target Market Maker how order should be processed. Instructions for order handling on destination trading floor or system. • 1: Automated only, no broker intervention • 2: Automated with broker intervention • 3: Manual order, best execution
Hedge/Spec	A	1	• H: Hedger • S: Speculator

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
IML Handling	X	1	All Public Customer Orders sent to BOX must include NBBO filtering instructions: 1. NBBO Filtering and IML Routing: The order is filtered for NBBO and is routed to the best away Exchange if it is executed and BOX is not at NBBO. 2. No NBBO Filtering: The order is not filtered for NBBO. This type of filtering is not acceptable for Public Customer and Broker Dealer origin orders, regardless of whether they are for BOX Participants or not. 3. NBBO Filtering and No IML Routing: Order filtered against NBBO without Inter-Market Linkage routing instructions, the Order being rejected back to the sender if it is marketable at the time of reception and BOX is not at NBBO. For Complex Order, this is the only valid value. 4. InBound ISO order. The order is a Limit and IOC order. It is not filtered against NBBO and not routed away. 5. Contingent Orders: Specifies that the Auction or Floor Trade is contingent and should not be controlled against the NBBO for the execution price. Only used for Solicitation, Facilitation and Floor Trades. The only values supported for Solicitation and Facilitation are 3 and 5. 6. No Exposure for Complex Order Instrument upon entry. Default behaviour for Complex Order Instrument is to be exposed upon entry. Only valid for Complex Order.
Inactivity Interval	N	2	Number of missed heartbeats before considering the user disconnected. If set to 0, the user is never considered as disconnected by the system.
Instrument ID	X	4	Instrument identification within a Group
Instrument State	X	1	• F Forbidden: Trading is forbidden for this instrument. Orders and quotes are rejected • N Normal: The instrument follows group state processing • R Orders and quotes are processed in Pre-opening if the group is in Trading status.
Leg Number	N	2	ID of the leg of the Complex Order Instrument. Maximum value of 16.
Liquidity Status	X	1	Indicates if the trade adds or removes liquidity • M: Maker • T: Taker • [ ]: Trade is not eligible for Make or Take fee pricing structure

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Memo	X	50	Free text zone can be used to transmit additional information for processing. No validations are carried out on this field.
Message Type	X	2	Type of Message
MM CAT Usertime	X	8	Time at which Market Maker sent their Bulk Quote message to BOX, represented in number of nanoseconds since midnight of the current day, use Eastern Time zone. Must be left blank if not used. BOX will not do any validation of the value provided. The Base62 character set is: “0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz” Any other character is evaluated as 0.

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Open/Close	X	1	Indicates how the Participant's position will be handled by the clearing system. Valid Values for options and individual leg of a Complex Order instrument: • C: Close (all legs or single instrument) • O: Open (all legs or single instrument) For Complex Orders, ' ' must be used. It indicates that the OpenClose positions are specified in the **Post Trading Instruction** field. For Legacy support, the following values are still supported for Complex Orders: • 1: 1st leg Open, 2nd leg Close • 2: 1st leg Close, 2nd leg Open • 3: 1st leg Open, 2nd leg Open, 3rd leg Close • 4: 1st leg Open, 2nd leg Close, 3rd leg Open • 5: 1st leg Open, 2nd leg Close, 3rd leg Close • 6: 1st leg Close, 2nd leg Open, 3rd leg Open • 7: 1st leg Close, 2nd leg Open, 3rd leg Close • 8: 1st leg Close, 2nd leg Close, 3rd leg Open • A: 1st leg Open, 2nd leg Open, 3rd leg Open, 4th leg Close • B: 1st leg Open, 2nd leg Open, 3rd leg Close, 4th leg Open • D: 1st leg Open, 2nd leg Open, 3rd leg Close, 4th leg Close • E: 1st leg Open, 2nd leg Close, 3rd leg Open, 4th leg Open • F: 1st leg Open, 2nd leg Close, 3rd leg Open, 4th leg Close • G: 1st leg Open, 2nd leg Close, 3rd leg Close, 4th leg Open • H: 1st leg Open, 2nd leg Close, 3rd leg Close, 4th leg Close • I: 1st leg Close, 2nd leg Open, 3rd leg Open, 4th leg Open • J: 1st leg Close, 2nd leg Open, 3rd leg Open, 4th leg Close • K: 1st leg Close, 2nd leg Open, 3rd leg Close, 4th leg Open • L: 1st leg Close, 2nd leg Open, 3rd leg Close, 4th leg Close • M: 1st leg Close, 2nd leg Close, 3rd leg Open, 4th leg Open • N: 1st leg Close, 2nd leg Close, 3rd leg Open, 4th leg Close • P: 1st leg Close, 2nd leg Close, 3rd leg Close, 4th leg Open

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Order ID	X	8	Identifies an order. Associated with Group ID and Instrument ID; it is the Order Key identifier
Order Type	A	1	• O: Order • Q: Quote
Original Order ID	X	8	First Order ID assigned to the order by the trading system
Original Reference ID	X	8	References either the Original Order ID of the traded order or the Quote ID of the quote that has traded ID Code for the Counterpart Participant Trader ID firm if it is a cross trade, else blank
Password	X	8	Contact Technical Help Desk for details Used when establishing a SAIL Logical connection See section 7 for details on how to encode it.

Post Trade Instruction	X	50	String of characters
			This field is used for 4 reasons:
			• Specify a CMTA
			• Specify a Give-Up Firm
			• Specify a SubAccount at OCC. The SubAccount represents the Market Maker ID (MMID) at OCC.
			• Specify the Open Close of a Complex Order
			The information can be specified as follows:
			• To specify a CMTA, enclose the CMTA Firm ID (up to 4 digits) between 2 'C'
			• To specify a Give-Up Firm, enclose the Give-Up Firm ID (up to 4 digits) between 2 'G'
			• To specify a SubAccount (ClearingAccount at OCC), enclose the SubAccount between 2 '#' (pound sign). SubAccount is defined as a string up to 3 AlphaNumeric as is currently supported by OCC). Any preceeding space is allowed, but any trailing space is ignored.
			    ○ #ABC# means 'ABC' will be sent to OCC (Sent as is)
			    ○ # AB# means ' AB' will be sent to OCC (Preceding space conserved)
			    ○ #AB # means 'AB' will be sent to OCC (Trailing space removed)
			    ○ #ABCD# means 'ABC' (truncated to 3) will be sent to OCC
			To specify the OpenClose of a Complex Order, enclose the Open (O) or Close (C) position of each leg between 2 'P' - up to 16 legs Open/Close are supported.
			<u>For example:</u>
			"**C**950**CG**980**G**#ABC#**P**OOCCOCOCCC**P**" is interpreted as follows:
			• The CMTA is 950
			• The Give-Up is 980
			• The SubAccount is ABC
			• The Open/Close of the 10 legs of the strategy is as follows:
			. Leg 1: Open
			. Leg 2: Open
			. Leg 3: Close
			. Leg 4: Close
			. Leg 5: Open
			. Leg 6: Close
			. Leg 7: Open
			. Leg 8: Close
			. Leg 9: Close
			. Leg 10: Close

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Price	X	10	Price with format indicator and price mantissa **Format indicator (1):** If the format indicator is Alpha, it means that the price is negative (A means negative value with no decimal, B means negative value with 1 decimal, C means negative value with 2 decimals, etc.). If the format indicator is Numeric, it means that the price is positive (0 means positive value with no decimal, 1 means positive value with one decimal, 2 means positive value with 2 decimals, etc.). If the format indicator is set to spaces, it means that the price is not significant. **Price mantissa (9):** Represents the price value including the number of decimals defined in the format indicator. **Examples:** Format indicator = 2; Price mantissa = 3509438; Price = 35094.38 Format indicator = A; Price mantissa = 3567838; Price = -3567838 Format indicator = ; Price mantissa = 3567838; Price = not significant
Price Type	X	1	For regular order: • L: Limit (price set in message) • O: At Opening price • W: At any price (Market Order)
Protection Code	A	1	Type of protection requested by the Market Maker • A: Advanced Protection • C: Functionally equivalent to N • N: Standard Protection **Note**: If no Market Maker Protection Subscription message is sent, BOX will assume the Participant requested standard protection (N). BOX will reset the selected protection to standard every morning before the pre-opening phase. A new Market Maker Protection Subscription message will be required to activate advanced protection.
Protocol	X	2	Protocol ID: Versions A0, A1, A2, and A5 are no longer supported. A6 (includes Complex Order), A7, A8, B1, B3
Quantity	N	8	Number of contracts or shares

Field Name	L	T	Definition/Validation Rules
Quantity Sign	X	1	For a quote or an order update, it identifies how to handle the quantity: • "+": Add the incoming quantity to the booked quantity • "-": Subtract the incoming quantity from the booked quantity • "=": Replace the booked quantity with the incoming quantity Participants are able to modify the quantity of an order by specifying the quantity variation from the original value (+, - signs) instead of being limited to specifying only the remaining quantity.
Quantity Term	X	1	• B: Surrender Quantity for Solicitation, Facilitation and Floor Trade • J: Indicates that the Auction type as MIP • Space: None The above value indicates that the InitO is willing to surrender a portion of the total number of contracts
Quote Cancel Reason	A	1	Identifies the type of quote cancellation • A: Cancelled by the Trader • D: MMP – Percent Of Quote has been reached • E: Maximum Triggers Protection Limit Exceeded • G: Cancelled By Supervisor • I: Eliminated on Disconnect • L: Traded Activity Protection Limit Exceeded • M: Cancelled by the BOX Market Operations Center (MOC) • O: Eliminated Due To Drill Through Protection • P: MMP - Max number of trades has been reached • Q: Quotes Cancelled • R: MMP - Max value has been reached • S: Cancelled by the System • T: MMP - Max Volume has been reached • N: MMP - Max Delta Volume has been reached • V: MMP - Max Delta Value has been reached • W: Cancel Pending
Reference ID	X	8	References the order (Order ID) or the quote (Quote ID) that has traded
Rejection Code	N	4	• 0001: Executing Participant Discretion • 0002: Auction Order failed
Session ID	X	4	Identifies current session ID If set to blank spaces, this means the Participant wants to connect to the current session ID.

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Special Price Term	X	1	PIP Solicitation Facilitation • B: Solicitation Auction • C: Facilitation Auction • G: Regular PIP • X: Customer Cross Order or Qualified Contingent Cross Order **Note:** These values specify the type of Auction to be started. Order Entry • ' ': (Blank), No Special Price Term • O: Directed Order • P: Preferenced Order • R: Floor Trade • A: Indication of Interest
Special Trade Indicator	A	1	Defines the type of trade • A: As-Of-Trade • B: Block Trade • L: Late Trade • O: Hidden Trade • S: Size Adjustment Trade • R: Floor Trade • D: Customer Cross Order or Qualified Contingent Cross Order Applies to Solicitation, Facilitation and Floor Trade only: • g: Contingent Trade (trade was not controlled against the NBBO)

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Status			Provides the Participant with the outcome reserved for the order that is the subject of the entry, modification, or cancellation. • " ": Order put in the Order Book (having possibly been partially executed) • A: Order cancelled by the trader or at the end of the exposition phase • B: Order has been eliminated by the trading system due to invalid out of limits price • D: The order is a 'Directed/Routed Order' and has been received by ExecutingParticipant • E: The order has been eliminated by the trading system • G: Cancelled By Supervisor • I: Session Order has been cancelled when the Participant closes or loses his connection to the SOLA trading system • J: Eliminated Due To Maximum Nb Triggers Limit Exceeded • K: Eliminated Due To Trade Activity Limit Exceeded • L: Order has been sent to the away exchange • M: Cancelled by the BOX Market Operations Center (MOC) • O: Eliminated Due To Drill Through Protection • P: Order is being exposed • R: Order is eliminated due to trading restriction • T: Eliminated Due To Trade Limit Exceeded • W: Cancel Pending • X: Order executed in full (or partially and the remaining part could not be put in the Order Book) (Fill & Kill)
String (x)	X	X	Free text depending on the context
Time	N	6	HHMMSS
Trade Memo	X	50	Text entered by Market Operation when it is a Manual Trade Entry
Trade Number	N	8	Identifies the trade number for an instrument and one day

FIELD NAME	L	T	DEFINITION/VALIDATION RULES
Trade Type	X	1	Identifies the origin of the trade • A: Traded during a Guaranteed Auction • B: Solicitation Auction • C: Facilitation Auction • F: Traded during Continuous Trading following FIFO algorithm • M: Trade entered by Market Operations • O: Traded during Opening
Trader ID	X	8	Identifies the trader • 4 first characters: Firm Identifier • 4 Last characters: Trader Identifier
Trader Lock Status			• L: Locked • U: Unlocked
User ID	X	8	Identifies the User for a connection. The User ID must be referenced in the SOLA® configuration database.
User Sequence ID	N	8	Identifies all the incoming business messages for one connection. Must be sequential and start at 1 at the beginning of the day. Used by SOLA® to track gaps in message sequence. When the maximum User Sequence ID of 99999999 is reached, the Participant is required to reset back to 0 (zero), and then increment by 1 for each new business message sent to the Exchange. The same reset is required when the Participant reaches the next maximum User Sequence ID of 99999999 and so on.
Verb	X	1	Identifies an order/quote side • B: Buy • S: Sell

Section 6 Error Codes

The following table displays the error codes and text that will appear in error responses.

ERROR CODE	ERROR TEXT
0001	User Identification is incorrect
0002	Protocol Version is not supported
0003	Message Type is not supported
0004	Session ID is not active
0005	User Acount Locked
0006	Message Type requested is not supported
0008	Message is too short
0009	Message is too long
0010	Message contains Binary Data
0011	No Heartbeat Activity: Disconnection
0012	Message Type is Out Of Context
0013	User ID has been deactivated: Disconnection
0014	Syntax Error + <detailed text>
0015	Field Value is too small
0016	Field Value is to big

Error Code	Error Text
0100	Firm is Forbidden to trade on this Group
0101	Duration Type is Forbidden for current Group state
0102	Verb field (Side) cannot be modified
0103	Order is not active
0104	Price Type is forbidden for this instrument
0105	Price Term is Forbidden for current Instrument state
0108	Duration Type is Forbidden for current Instrument state
0109	Order cannot be processed: No opposite limit
0110	Price does not represent a valid tick increment for this Instrument
0111	Duration Type is invalid for this Price Type
0112	Cross Order price must be within the Instrument trading limits
0113	Order price outside price spread
0114	Opposite Firm must be filled for committed order
0115	Order Account Type is inconsistent with IML Handling field
0116	Crosss order is not allowed
0117	Cross order quantity is outside limits
0118	Duration Type is Invalid for This Price Term

Error Code	Error Text
0119	Quantity is out of range
0120	Functionality is not supported
0121	Order price is outside the order entry protection limits.
0123	Floor Trade Not Allowed
0124	Insufficient Surrender Quantity
0201	GTD date must be equal to or greater than current day
0202	GTD date must be equal to or less than Instrument expiration date
0203	GTD date must be filled only if Duration Type is equal to GTD
0300	Quantity Term is Forbidden for current Instrument state
0302	Quantity must be less than or equal to Maximum Improvement Quantity
0303	Quantity Term is not authorized for this Order Type
0304	Additional Quantity must be less than Order Quantity
0305	Additional Quantity is too small
0306	Minimum quantity cannot be modified
0307	Quantity Term is forbidden for Duration Type
0308	Order quantity is outside the instrument quantity threshold
0309	Quantities must be multiples of lot size

Error Code	Error Text
0310	Order Net Value Is Outside the Net Value Threshold
0311	Quote Price has locked or crossed the opposite NBBO Price
0402	Trader ID field cannot be modified
0403	Market Maker not authorized for Group
0404	Market Maker P orders not authorized for class
0405	Market Maker quote spread invalid for P orders
0406	Market Maker quote size invalid for P orders
0407	Market Maker quote should not trade on entry
0500	Order price is outside the instrument price threshold
0501	Price field is mandatory for Limit Orders
0502	Price field must not be filled for this Price Type
0503	Order cannot be modified or cancelled
0504	Additional Price is forbidden for Price Term
0505	Order price must be greater than additional price
0506	Order price must be lower than additional price
0507	Additional price must be lower than last price or last day price
0508	Additional price must be greater than last price or last day price

Error Code	Error Text
0509	Order rejected. Cannot trade outside instrument price thresholds.
0510	Order cannot be modified
511	Order price is outside circuit breaker limits
512	Price Term Invalid For Price Type
0513	Instrument allows only Closing Orders
0514	Instrument Leg allows only Closing Orders
0700	Only one quote per Instrument and per Side is accepted
0701	Quote is not present in the Instrument Book
0702	Bulk Quote Participant Protection in progress; Quote not processed.
0703	Advanced Bulk Quote Participant Protection not enabled for this Group
0704	Buy and Sell must not cross for the same instrument
0705	Number of quotes is not in sync with the message length
0707	Bulk Quote Participant Protection state must be re-activated
0708	Trader ID has no quote for this Group
0709	All the Instruments must belong to the same Group
0710	Clearing Data has not been initialized
0800	Required number of Market Makers is not satisfied to start an auction.

Error Code	Error Text
0801	Auction ID is not active.
0802	Only Price can be updated.
0803	Price must be better than previous Improvement Price.
0804	Improvement Quantity is not valid.
0805	Only price and quantity can be updated.
0806	Improvement Verb is not valid for this auction.
0807	A guaranteed auction cannot be started when NBBO is crossed or locked.
0808	An auction is already running.
0810	Price must be within NBBO spread.
0811	Quantity must be greater than Minimum Improvement Quantity.
0812	Improvement Order cannot be cancelled
0813	Initial Order cancel is forbidden
0814	Improvement cancellation forbidden
0815	Improvement price must be improved
0816	Improvement quantity cannot be decreased
0900	EP Disconnected
1000	Cross orders forbidden in Pre-opening phase.

ERROR CODE	ERROR TEXT
1001	Instrument does not exist
1002	Group ID does not exist
1003	Trader ID is invalid
1004	Message Type is forbidden for current Instrument state
1005	Firm ID is Invalid
1006	Directed Order should be Garanteed
1007	Participant must use A2 protocol version
1008	RFQ currently underway for this instrument
1009	Action not allowed under current configuration
1010	Number of entries is invalid
1011	Invalid Trade Id
1103	Cross order price type must be limited
1104	Validity date type for a cross order must be FAK
1105	Invalid datas for Low and high limits
1106	The preopening time must be greater than system time
1107	Firm or trader had been disabled
1108	Instrument mandatory when using MM Monitoring Mode Forced

ERROR CODE	ERROR TEXT
1109	Market maker has no obligation for this group
2000	Technical error: function not performed. Contact Technical Help Desk.
2001	Gateway State forbids this command. Contact Technical Help Desk.
2002	Function only partially performed. Contact Technical Help Desk.
3000	Broker Option
3001	Unknown Invalid Symbol
3002	Exchange Closed
3003	Order Exceeds Limit
3004	Too Late To Enter
3005	Unknown Order
3006	Duplicate Order
3007	Stale Order
3008	Instrument State Rotation
3009	Instrument State NonFirmMode
3010	Instrument State halted
3011	Reference Price Is Out Of Bound
3012	Unknown Clearing Firm

Error Code	Error Text
3013	SubAccount ID Missing
3014	Invalid Auto Ex Value
3015	Account Missing
3016	Time In Force Missing Invalid
3017	Open Close Missing Invalid
3018	Exec Broker Missing
3019	Clearing Account Missing
3020	Execution Information Missing
3021	Order Received Too Soon
3022	Order Capacity Missing Invalid
3023	Late Print To OPRA Tape
3024	Communications Delays To OPRA
3025	Manual Crowd Trade
3026	Processing Problems
3027	Complex Order
3028	Trade Rejected
3029	Trade Busted Corrected

ERROR CODE	ERROR TEXT
3030	Original Order Rejected
3031	Rejected Linkage Trade
3032	Other
3033	Traded At NBBO
3034	Unknown Exchange
3035	Too Late To Cancel
3036	Already In Pending Cancel
3037	Pro Rata Satisfaction Distrib
3038	Req Ord Size Superior Trade Size
3039	Not At NBBO
3040	Cancel Due To Non Block Trade
3041	Unknown Clearing Operation Mode
3042	Invalid Price Type
3096	TraderLockOut
3097	RiskTeamLockOut
4001	Executing Participant discretion
4002	Initial Order Failed

Error Code	Error Text
4003	Executing Participant did not respond Order booked
4010	Invalid modification of Executing Participant
5001	Report date is invalid
5002	Account number does not exist
5003	Account already exists
5004	Both quantities cannot be null
5005	Position does not exist
5006	Account does not exist
5007	Participant does not exist
5008	Approved participant does not exist
5009	This account has open positions
5010	Firm unit mismatch
5011	Invalid instrument for specified report date
9000	Internal. To be defined
9001	Price Term is forbidden for ISO order
9002	Quantity Term is forbidden for ISO order
9003	ISO order must be Limit

Error Code	Error Text
9004	Group opening not allowed number of instruments exceeds threshold
9005	Group opening not allowed total traded volume exceeds threshold
9006	Instrument opening not allowed a quote crosses the CTO
9007	ISO order must be IOC
9008	Change to ISO order is forbidden
9009	Unknown CPU.
9010	CPU State forbids this command.
9011	Change from PPA IML handling is Forbidden.
9012	Change to PPA IML handling Type is Forbidden.
9013	No order to delete in the book
9014	Strategy trade must be cancelled leg by leg
9015	Strategy instrument has some legs closed
9016	Maximum pending instrument creation reached
9017	Invalid Number Of Legs
9018	Invalid Leg Information
9019	Unknown Strategy type
9020	Firm Creation Quotas Has Been Reached

Error Code	Error Text
9021	Leg Instrument Is Not Active
9022	Strategy has unpriced legs
9023	Group state does not allow this function
9024	Order cannot be processed presence of capped legging order

Section 7 Password Encoding

This algorithm is to be used when encoding the 'Password' field in the 'TC – User Connection' message type.

Step 1) Initialize values

Get the 'Password' value as assigned by BOX MOC at the initial creation of the 'User ID'.

Take the value that will be passed in the field 'Time' in the 'TC – User Connection' message type which represents the time at which the 'TC' message is sent.

Example:
Password = "`PASSWORD`"
Time = "`160803`"

Step 2) Get the MD5 hash result

Concatenate the 'Time' and 'Password' values from step 1 and hash them using the MD5 algorithm.

The result should be a 32 hexadecimal character string

Example:
HashToMD5("`160803PASSWORD`")
Result: "`9B9FD80B4A3FC5CC`**`02DA4119B15F0C07`**"

Step 3) Encode to Base64 format

Take the last 8 bytes (rightmost) from the result of step 2 and encode it using the Base64 algorithm, with the following character set:

"`ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/`"

Example:
HexToBase64("`02DA4119B15F0C07`")
Result = "`AtpBGbFfDAc=`"

Step 4) Set the Password in the 'TC' message

Take the first 8 bytes of the result of step 3 to initialize the 'Password' field and the value use in step 1 for the 'Time' field

Example:
Password = "`AtpBGbFf`"
Time = "`160803`"