CBOE®

CHICAGO BOARD OPTIONS EXCHANGE

CBOE Application Programming Interface

CBOE FIX 4.2 Version 3.2 - Release Notes

Provides an overview of the updates and changes to the FIX 4.2 with this version release.

CBOE PROPRIETARY INFORMATION

12 August 2005

Document #[FIX-00]

Front Matter

Disclaimer

Support and Questions Regarding This Document

Questions regarding this document can be directed to The Chicago Board Options Exchange at 312.786.7300 or via e-mail: api@cboe.com.

The latest version of this document can be found at the CBOE web site http://systems.cboe.com.

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CBOE Proprietary Information

Overview

The material presented in this document highlight the upcoming changes for the new release of the FIX 4.2 API, Version 3.2. Highlights and documentation changes are detailed in the sections below. Your feedback or questions regarding this document should be sent to API@cboe.com.

FIX 4.2, V3.2 Highlights

Hybrid Opening Enhancements

The expected opening price (EOP) messages have been enhanced to provide descriptive opening messages to be used by Market Makers to send in valid/tradable quotes at the open. In addition to the current opening process, these messages will be sent prior to the opening. The messages will be sent at pre-determined intervals, currently planned for every 30 seconds.

The Hybrid openings have changed to calculate the opening range based on the midpoint of the Best quote (or I order) bid and the best quote (or I order) ask, minus/plus half the spread width for the price range.   (Ex. Best bid 1.00, best ask 1.10 Opening Spread width .25 for non-LEAP option will calculate an opening range of .925 - 1.175 which will round to .90 - 1.20)

Tag277 [Trade Condition] has been updated to include the new Expected Opening Price message

> **PRICE_NOT_IN_BOTR_RANGE = "X"**
> This EOP message type indicates that the potential opening price is not in the valid Best of the Rest (BOTR) range based on the current BOTR price, current potential opening quantity and the system configuration. The EOP message will provide users with the potential opening price and opening quantity

Below are examples using opening messages.

Example Price Not in BOTR range:

Opening quote range: 1.00 - 1.10 20 x 20

Order to sell 10 at the market; BOTR Range = 1.05 - 1.10

Message X sent to users will include the CBOE calculated opening price of 1.00 and the size of 10.

> **PRICE_NOT_IN_BOTR_RANGE = "X"**
> This EOP message type indicates that the potential opening price is not in the valid Best of the Rest (BOTR) range based on the current BOTR price, current potential opening quantity and the system configuration. The EOP message will provide users with the potential opening price and opening quantity

Example Need more buyers:

Opening quote range: 1.00 - 1.10 20 x 20

Order to sell 50 at the market

Message P sent to users will include the Bid price of 1.00 and the size of 30.

> **Imbalance_More_Buyers = "P"**
> This EOP message type indicates that the current market is

imbalanced and will need more buyers' contracts (n) at the opening price. The EOP message will provide users with the potential opening price (bid price) and the imbalanced quantity (n).

Example Need more sellers:

Opening quote range: 1.00 - 1.10 20 x 20

Order to buy 50 at the market

Message Q sent to users will include the Ask price of 1.10 and the size of 30.

Imbalance_More_Sellers = "Q"
This EOP message type indicates that the current market is imbalanced and will need more sellers' contracts (m) at the opening price. The EOP message will provide users with the potential opening price (ask price) and the imbalanced quantity (m).

Note: Tag 270 [MDEntryPx] will be populated with the potential opening price when TradeConditon equals P or Q. Firms should verify that their application is programmed to handle this tag and make use of this value.

Hybrid Automated Liaison Auction Type

The Hybrid Automated Liaison (HAL) auction type (AUCTION_HAL will allow users to participate in auctions for orders that are:

- **NBBO Reject**: An incoming order is marketable but CBOE is not at the NBBO.

- **Tweener Lock**: An incoming order that is between the market at CBOE but is marketable against an away market.

- **Tweener**: An incoming order that is between the market at CBOE and does not lock or cross an away market.

Special Considerations for the HAL Auction Type

- A Request for Price (RFP) flash will be used to place the order in an auction state. The RFP flash timer is configurable.

- If a decision to flash the order is taken then CBOEdirect will end any quote locks, quote triggers and any current non-flash auctions will be allocated prior to the start of order flashing.

- CBOEdirect will send RFP at the NBBO price (or order price for a Tweener) to all the market makers quoting in this product or class depending upon the settings.

- RFP will be of type HAL and have the NBBO price as the starting price and the size of the order.

- Response to the flash auction cannot be cancelled.

- Response to the flash auction will result in a Quote Trigger for a pre-configured time.

Single Acronym

Single acronym functionality allows multiple user IDs to share the same acronym. Firms will be allowed to use multiple user ids to quote all their classes and multiple user ids/login ids to share the same acronym and profile. The back office process will be streamlined by coupling trades that are associated with the same acronym.

This functionality adds a new restriction to quote entry and changes the behavior of the quote risk monitor (QRM).

Quote Entry Restrictions

With single acronym, two users sharing the same acronym cannot quote the same class. For example,

1. User ID1 and user ID2 share the same acronym
2. User ID1 is quoting class, IBM. User ID2 tries to quote IBM but the quote is rejected.
3. If user ID1 logs off and all quotes are cancelled, user ID2 will be able to quote IBM.
4. If user ID1 cancels all his/her quotes, without logging off, user ID2 will be able to quote IBM.

QRM

QRM will be setup at the acronym level. Therefore, multiple users that share the same acronym and exchange will be sharing the same QRM values. For example,

- User ID1 and user ID2 are sharing acronym ABC
- User ID1 is quoting IBM
- User ID2 changes QRM on his/her CBOE*direct* trading system for IBM
- User ID1's QRM values will change to reflect the changes made by User ID2

Document Changes

FIX-01

- Removed references to FIX/ORS

FIX-03a

- No changes

FIX-03b (Including Tag Dictionary)

- Added user defined fields: tag 9380 and tag 9381

FIX-03c

- Added tag 654 [LegRefId] to the New Strategy Order – Single Message for Method 2, one-step strategy processing. This tag is optional for options, futures and the common stock leg of buy_writes.

- Created a new section for the Hybrid Automated Liaison auction type, AUCTION_HAL.

Hybrid Automated Liaison Auction Type

The Hybrid Automated Liaison (HAL) auction type (AUCTION_HAL will allow users to participate in auctions for orders that are:

NBBO Reject: An incoming order is marketable but CBOE is not at the NBBO.

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Special Considerations for the HAL Auction Type

- A Request for Price (RFP) flash will be used to place the order in an auction state. The RFP flash timer is configurable.

- If a decision to flash the order is taken then CBOEdirect will end any quote locks, quote triggers and any current non-flash auctions will be allocated prior to the start of order flashing.

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- RFP will be of type HAL and have the NBBO price as the starting price and the size of the order.

- Response to the flash auction cannot be cancelled.

- Response to the flash auction will result in a Quote Trigger for a pre-configured time.

- Added tags 9380 and 9381 to the New Strategy Order—Single Message to facilitate the trading of Buy_Write products

tag 9380, StockFirmName

Buy_writes: used to specify where the equity leg of the buy_write strategy is to be executed. This field is recommended for buy_writes, but not required. Values are:

CBOE="W";
CINCINNATI = "C";
AMERICAN= "A";
BOSTON="B";
CHICAGO="MW";
NASDAQ="O';
NYSE="N";
PACIFIC="P";
PHILIDELPHIA="PH";

tag 9381, StockFirmNameKey

> A text field that is used to specify the contact at the specified Exchange that will facilitate the trading of the equity portion of the buy_write.

- Replaced Table 1: Types of Market Data Provided

- Updated tag 109, Client ID to read: "Options and Futures: Correspondent Firm. This is an optional free-form field. The maximum size is 4 characters and the data type is uppercase alphabetic only."

- Added a new section labeled "Repeating Groups" to stress the importance of the order of the tags in a repeating group.

> It is important to stress that when repeating groups are involved, the order of the tags is significant. Additionally, only those tags documented as belonging to a repeating group should be used. If these guidelines are not followed, it is likely that the message will not be interpreted as desired; error responses may be misleading, and it is possible that some attribute values will not be processed.

- Removed tag 9468, UserDefinedCancelId, from the Cancel Execution report.

- Updated the section "Special Considerations for CFE Orders" with the following information.

> The only CFE user role that can enter orders of origin "M" is the market-maker role. The broker-dealer role is not allowed to enter "M" orders into the CFE_MAIN session.

- Added a new section for Preferred DPM (PDPM) and updated the New Order Single message table to include a clearer defintion for PDPM in tag 9324.

> Firms that wish to give one DPM priority in participating in a trade use optional data (tag 9324 in FIX). The firm would send "P:firm;" and can coexist with other data that may be present in this tag. "firm" is the CBOE firm acronym that will be supplied by CBOE. Please note that the message must include the colon : and semi-colon ;

- Modified the section: "Specifying Clearing Related Information" with the tables below.

FIX Options Order Clearing Information in New Order Message

FIX Tag Name	Tag #	Sample	Description
Account	1	ABC or QAB	For market-makers, this typically would be either the joint account (often called q-account) or the market-maker three-letter badge acronym. Passed through to OCC. Required for Market-Maker and DPM roles in all sessions. For Market-Maker and DPM roles, CBOE validates the value of this field on inbound orders against the CBOE Membership system. For Market-Maker and DPMs, user cannot use more than one account per class. Optional for Broker-Dealer and Firm roles. CBOE performs no validation checks on the value of this field for Broker-Dealer and Firm roles. Exact size is 3 and data type is alpha only.

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FIX Tag Name	Tag #	Sample	Description
ClearingFirm	439	CBOE:123 or 123	The CMTA (Clearing Member Trade Agreement) field is used to designate an OCC clearing firm if it is different from the executingOrGiveUpFirm. CBOE performs no validation checks on the CMTA field against the CBOE Membership system. This field is optional for all roles in all sessions. CMTA is comprised of two components: an e*xchange* component, which contains the exchange code and CMTA firm number. The e*xchange* string is the exchange on which your order will trade. The exchange portion of the CMTA field is alpha only. Please note that you must use a colon : between the exchange and the firm number. If you leave exchange blank but include a firm number, then the exchange defaults to CBOE. The *firm number* is the OCC clearing firm where the order will clear. The firm number portion of the CMTA field is numeric only. Even though the maximum size for the firm number component is 5, CBOE will read the first three numbers of this field to use as the OCC clearing firm. In other words, if the desired CMTA firm at the OCC is "123", do not send "00123", send "123".
ClientID	109	ABC or ABCD	This field is commonly referred to as the Correspondent Firm field by CBOE. It is used by the executing give up firm to differentiate the firm or system sending the order. The 1st three characters of this field are mapped to the optional data field on the CBOE Trade Match (CTM) record. This field has no impact on the clearing of the trade. This field is optional. CBOE performs no validation checks on the correspondentFirm field against the CBOE Membership system. Maximum size is 4 characters and data type is uppercase alpha only.

FIX Tag Name	Tag #	Sample	Description
ExecBroker	76	CBOE:123 or 123	This is the CBOE post trade processing firm (which must be a CBOE clearing firm) that is representing the order in live trading. If no CMTA (tag 439) firm is present in the order, then the this field represents the OCC clearing firm where the order will clear. Required for all orders sent to CBOE for all roles in all sessions regardless of whether a CMTA firm is given or not. CBOE performs validation checks of ExecBroker against the CBOE Membership system on options orders routed to the W_MAIN session. Broker-Dealer and Firm roles must choose from a list of pre-approved and pre-configured firms and the Market-Maker and DPM roles must use default ExecBroker only. This field is comprised of two components: e*xchange* which contains the exchange code and *firm number*. The *Exchange string* is the exchange on which your order will trade. The exchange portion is alpha only. Please note that you must use a colon : between the exchange and the firm number. If you leave exchange blank but include a firm number, then the exchange defaults to CBOE. If there is no CMTA given in the order, then the ExecBroker *firm number* will be the OCC clearing firm where the order will clear. If there is a CMTA given in the order, then the firm number is the CBOE clearing firm that is representing the order in live trading (post trade processing firm). The firm number portion of the CMTA field is numeric only. Even though the maximum size for the firm number component is 5, CBOE will only read the first three numbers of this field to use as the ExecBroker. In other words, if the desired firm is "123", do not send "00123", send "123".

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FIX Tag Name	Tag #	Sample	Description
ClearingOptionalData	9324	M:ABC ABC123ABC	Orders of origin Customer ("C"): The first four characters are reported to the last four characters of CBOE Trade Match Optional Data field. These four characters are reported to OCC. Do not put "C:" in this field. Orders of origin In-Crowd Market-maker ("I") This field is not required. Do not put "I:" in this field. In-Crowd Market-Maker (ICM) options orders of origin 'I', similar to two-sided quotes, take their clearing information from the market-maker profile in the CBOE System Administrator GUI (SAGUI). Orders of origin Market-maker ("M") and Away Market-maker ("N") This tag is _required_ for all options orders of origin "M" or "N" that are sent to the CBOE. This contains data that will be passed on to the CBOE Trade Match system (CTM) and will be part of clearing information sent to the OCC. The data is specific to each member firm. For "M" and "N" orders routed to the CBOE Trading Floor (W_MAIN session), the tag 9324 should contain the Market Maker Account (Q Account, joint account, or market maker acronym). If a subaccount is also used, then it must be supplied as well. If a firm sends an origin of "N", then this field must begin with the characters "M:", not "N:". Market-Maker format: `M:ABC ABC123ABC` M: in characters 1 and 2 (including the colon) ABC in characters 3 – 5. This value should contain the market maker account, Q-account, or joint account where the trade will clear. This value will be moved to the Market Maker Account field on the Trade Match record. The account portion of optional data in characters 3-5 is required for all "M" and "N" orders or the trade will not clear properly. (Space) in character 6 ABC123 in characters 7 – 12 This is the firm's back office subaccount field. Not a required field. If present, it will be moved to characters 6–11 of the Trade Match Optional Data field. (Same as a Market-Maker Terminal trade). If a subaccount is present, it may be alpha-numeric and it may be between 1-6 characters. The subaccount portion of this must be left alligned within these six characters. ABC in characters 13-15 For orders of origin "I", "M", and "N", these three characters should contain the three-letter market-maker originator acronym. _Please see the "originator" field for more detailed requirements information._

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CBOE Proprietary Information

FIX Tag Name	Tag #	Sample	Description
			Examples
			M:ABC ABC123ABC
			Market-maker ABC has no q-account or joint account, but has subaccount ABC123.
			M:QAB AB1 ABC
			Market-maker ABC has q-account (joint account) QAB with subaccount AB1. Note that there are three spaces between AB1 and ABC.
			M:QAB ABC
			Market-maker ABC has q-account (joint account) QAB with no subaccount. Note that there are seven spaces between QAB and ABC.
			M:QAB
			Market-maker ABC has q-account (joint account) QAB with no subaccount.
			M:ABC
			Market-maker ABC has no q-account or joint account, and has no subaccount.
			Preferred DPM
			Firms that give one DPM priority in participating in a trade use this tag.
			Firm is specified as **P:*firm*;** and can coexist with other data that may be present in this tag. *"Firm"* is the CBOE firm acronym as listed in the Order Test Plan. Please note that the colon : and semi-colon ; are both mandatory.
			Linkage: This tag is *not* used for Linkage.

FIX Tag Name	Tag #	Sample	Description
OrderOrigin	9465	ABC	CBOE knows this as the "originator" field. This field would only be used for orders of origin "M", "I", and "N". It is the three-letter acronym ("badge") of the market-maker who originates the order. This field will typically be three characters (occasionally two).
			Orders of origin "M"
			Orders of origin "M" entered by a broker-dealer role must supply the three-letter acronym ("badge") of the market-maker. If a broker-dealer role submits an options order of origin "M" on behalf of a CBOE market-maker, then the three-letter (all alpha, all caps) MM acronym must go into either the OrderOrigin (tag 9465) or the originator portion (positions 13-15) of ClearingOptionalData (tag 9324). The market-maker role does not have to enter this tag when entering orders of origin "M". However, if a market-maker role wishes to enter this tag when entering orders of origin "M", then it may enter the originator acronym into either tag 9465 or the originator portion (positions 13-15) of tag 9324.
			Orders of origin "I"
			Orders of origin "I" entered by a broker-dealer role must supply the three-letter acronym ("badge") of the market-maker. If a broker-dealer role submits an options order of origin "I" on behalf of a CBOE market-maker, then the three-letter (all alpha, all caps) MM acronym must go into the OrderOrigin field (tag 9465). If a broker-dealer role submits an options order of origin "I" on behalf of a CBOE market-maker, then it may also if it wishes put the originator acronym in the originator portion (positions 13-15) of the ClearingOptionalData field (tag 9324). The market-maker role does not have to enter the this tag when entering orders of origin "I". However, if a market-maker role wishes to enter this tag when entering orders of origin "I", then it may enter the originator acronym into either the this field (tag 9465) or the originator portion (positions 13-15) of the ClearingOptionalData field (tag 9324 in FIX).
			Orders of origin "N"
			Orders of origin "N" entered by a broker-dealer role must supply the three-letter acronym ("badge") of the market-maker. If a broker-dealer role submits an options order of origin "N" on behalf of a non-CBOE market-maker (e.g. a CBOE BD role enters an order on behalf of an AMEX market-maker), then the MM acronym must go into the originator portion (positions 13-15) of the optional data field (tag 9324 in FIX) and not the OrderOrigin field (tag 9465). If a broker-dealer role submits an options order of origin "N" on behalf of a non-CBOE market-maker and enters any value into the OrderOrigin field (tag 9465), then CBOE will reject the order. CBOE does not allow the market-maker role to enter orders of origin "N".
ClearingAccount	440	AB2, ABC, ABC123, QA12, QAB123	CBOE refers to this as the "subaccount" field. CBOE performs no validation checks on this field against the CBOE Membership system. It is optional for all roles. Maximum size is 6 and data type is alphanumeric. For Broker and Firm roles, if subaccount is used then the account field is not required.

FIX Options Order Clearing Information in New Order Message

FIX Tag Name	Tag #	Sample	Description
Account	1	ABC or QAB	For market-makers, this typically would be either the joint account (often called q-account) or the market-maker three-letter badge acronym. Passed through to OCC. Required for Market-Maker and DPM roles in all sessions. For Market-Maker and DPM roles, CBOE validates the value of this field on inbound orders against the CBOE Membership system. For Market-Maker and DPMs, user cannot use more than one account per class. Optional for Broker-Dealer and Firm roles. CBOE performs no validation checks on the value of this field for Broker-Dealer and Firm roles. Exact size is 3 and data type is alpha only.
ClearingFirm	439	CBOE:123 or 123	The CMTA (Clearing Member Trade Agreement) field is used to designate an OCC clearing firm if it is different from the executingOrGiveUpFirm. CBOE performs no validation checks on the CMTA field against the CBOE Membership system. This field is optional for all roles in all sessions. CMTA is comprised of two components: an e*xchange* component, which contains the exchange code and CMTA firm number. The e*xchange* string is the exchange on which your order will trade. The exchange portion of the CMTA field is alpha only. Please note that you must use a colon : between the exchange and the firm number. If you leave exchange blank but include a firm number, then the exchange defaults to CBOE. The *firm number* is the OCC clearing firm where the order will clear. The firm number portion of the CMTA field is numeric only. Even though the maximum size for the firm number component is 5, CBOE will read the first three numbers of this field to use as the OCC clearing firm. In other words, if the desired CMTA firm at the OCC is "123", do not send "00123", send "123".
ClientID	109	ABC or ABCD	The correspondent firm field is used by the executing give up firm to differentiate the firm or system sending the order. The 1st three characters of this field are mapped to the optional data field on the CBOE Trade Match (CTM) record. This field has no impact on the clearing of the trade. This field is optional. CBOE performs no validation checks on the correspondentFirm field against the CBOE Membership system. Maximum size is 4 characters and data type is uppercase alpha only.

FIX Tag Name	Tag #	Sample	Description
ExecBroker	76	CBOE:123 or CFE:123 or ONE:123	This is the post trade processing firm (which must be a clearing firm) that is representing the order in live trading. If no CMTA (tag 439) firm is present in the order, then the this field represents the OCC clearing firm where the order will clear. Required for all orders sent to CBOE, CFE, or OneChicago for all roles in all sessions regardless of whether a CMTA firm is given or not. CBOE performs validation checks of ExecBroker against the CBOE Membership system on futures orders routed to the CFE_MAIN and ONE_MAIN sessions. Broker-Dealer and Firm roles must choose from a list of pre-approved and pre-configured firms and the Market-Maker and DPM roles must use default ExecBroker only.
			This field is comprised of two components: e*xchange* which contains the exchange code and *firm number*.
			The *Exchange string* is the exchange on which your order will trade. The exchange portion is alpha only. Please note that you must use a colon : between the exchange and the firm number. If you leave exchange blank but include a firm number, then the exchange defaults to CBOE.
			If there is no CMTA given in the order, then the ExecBroker *firm number* will be the OCC clearing firm where the order will clear. If there is a CMTA given in the order, then the firm number is the CBOE clearing firm that is representing the order in live trading (post trade processing firm). The firm number portion of the CMTA field is numeric only. Even though the maximum size for the firm number component is 5, CBOE will only read the first three numbers of this field to use as the ExecBroker. In other words, if the desired firm is "123", do not send "00123", send "123".
ClearingOptionalData	9324	ThisIsBobsOrder12	CBOE refers to this field as optional data. This field stays with the order for the life of the order. The first 16 bytes go to the OCC. This field is optional for all roles for futures orders. Maximum size is 128 characters and data type is alphanumeric. Do not send "M:" account information like is used for options clearing.
OrderOrigin	9465	ABC	CBOE knows this as the "originator" field. This field is used for market-maker orders only. It is optional for OneChicago futures but not used for CFE futures. It would contain the three letter market-maker acronym. The acronym is the three-letter acronym ("badge") of the market-maker who originates the order. This field will typically be three characters (occasionally two).
ClearingAccount	440	AB2, ABC, ABC123, QA12, QAB123	CBOE refers to this as the "subaccount" field. It contains the account into which the trade will clear. CBOE performs no validation checks on this field against the CBOE Membership system. This field is required for all roles for futures. Maximum size is 6 and data type is alphanumeric. For Broker and Firm roles, if subaccount is used then the account field is not required.

FIX-03d

- Updated Trade Condition, tag 277, to include the new Expected Opening Price message:

  PRICE_NOT_IN_BOTR_RANGE = "X"
  This EOP message type indicates that the potential opening price is not in the valid Best of the Rest (BOTR) range based on the current BOTR price, current potential opening quantity and the system configuration. The EOP message will provide users with the potential opening price and opening quantity

- Modified the Expected Opening Price section to read:

  The expected opening price contains the price at which a product is expected to open. Expected opening messages will be sent prior to the opening in addition to the current opening process. The messages will be sent at pre-determined intervals, currently planned for every 30 seconds.

  The Hybrid openings have changed to calculate the opening range based on the midpoint of the Best quote (or I order) bid and the best quote (or I order) ask, minus/plus half the spread width for the price range. (Ex. Best bid 1.00, best ask 1.10 Opening Spread width .25 for non-LEAP option will calculate an opening range of .925 - 1.175 which will round to .90 - 1.20)

  Example Price Not in BOTR range:

  > Opening quote range: 1.00 - 1.10 20 x 20

  > Order to sell 10 at the market; BOTR Range = 1.05 - 1.10

  > Message X sent to users will include the CBOE calculated opening price of 1.00 and the size of 10.

  Example Need more buyers:

  > Opening quote range: 1.00 - 1.10 20 x 20

  > Order to sell 50 at the market

  > Message P sent to users will include the Bid price of 1.00 and the size of 30.

  Example Need more sellers:

  > Opening quote range: 1.00 - 1.10 20 x 20

  > Order to buy 50 at the market

  > Message Q sent to users will include the Ask price of 1.10 and the size of 30.

- Updated tag 9383 to include AuctionType_HAL=4. HAL stands for Hybrid Automated Liaison.

- Added a new section labeled "Repeating Groups" to stress the importance of the order of the tags in a repeating group.

  > It is important to stress that when repeating groups are involved, the order of the tags is significant. Additionally, only those tags documented as belonging to a repeating group should be used. If these guidelines are not followed, it is likely that the message will not be interpreted as desired; error responses may be misleading, and it is possible that some attribute values will not be processed.

- Updated the Market Data Interface section to include more information on recommended subscriptions.

    CBOE suggests that you subscribe to market data by class for recap and current market. Note that book depth must be by product (not class) and ticker should be subscribed by class for futures and options, by class or by product for underlying. Also note that CBOE currently does not permit book depth subscriptions for options.

FIX-06

- Added a section to describe the new "Cert" environment.

    CBOE has a new environment available for firms to use for FIX development and testing. The new environment is called the "Certification" or "Cert" environment. This environment will be the exact same FIX version as production, which will make it easy for your firm to test production issues if they arise. In addition, if your firm is coding to CBOE's APIs to go live in production, your firm may wish to use this new Cert environment to ensure API version compatibility when going live. This environment has all sessions (W_MAIN, CFE_MAIN, ONE_MAIN, UNDERLYING, etc.), similar to the current test environment.

- Modified Phase 5 Production test to read:

    CBOE Futures Exchange (CFE)
    Test your application in the production environment with the CBOE Production Help Desk prior to going live. No test plans are needed.
    >   CH
    >   BT

    OneChicago
    Test your application in the production environment with the CBOE Production Help Desk prior to going live. No test plans are needed.
    >   AK
    >   HOB

FIX-07

- No changes

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Test Plan Changes

FIX Phase 2 Test Plans

- At the completion of the CMi Phase 2 Test Plan, API Client Relations Staff will check to verify that all messages were delivered properly, and that there are no messages waiting in queue to be delivered to the user.

3a, Security Definition Test Plan

- No Changes

3b, Market Data Test Plan

- The firm is required to specify the Symbol[55] and the SecurityType[167] to subscribe (to market data) by class.

- Added a step CMR.10 in the Current Markets and Recaps section for user to set the Queue Action on the market data subscription to "OVERLAY_LAST".

- CFE book depth will be available via the FIX 4.2, CMi, and CBOE Financial Network (CFN) interfaces.

- Added step CMR.70 to the Current Markets and Recaps section where user receives cmiCallbackV3::CMICurrentMarketConsumer which identifies the Customer order as bestPublicMarkets type CUSTOMER_ORDER and the Firm order as bestPublicMarkets type PROFESSIONAL_ORDER.

3c, Quote Test Plan - Hybrid-ONE-CFE (includes 3j, Hybrid Sections and 3L, CFE Supplemental Tests)

- The expected result of step HQT.80 is now "User receives quote cancel notification right away and CBOE processes quote cancellation at the end of the quote trigger. Market-Maker may receive a fill report at the end of the quote trigger." in the Hybrid Quote Trigger section.

- Added sections Quote Guaranteed Message Delivery and Hybrid Quote Guaranteed Message Delivery to ensure that there are no undelivered messages waiting in queue to be delivered to the user.

- Quote Trigger Notifications are currently turned off in production.

- In the test environment W_MAIN session, the JNJ class is reserved for orders only, no quoting please. Also in the test environment W_MAIN session, IBM and MOT are reserved for CBOE internal Linkage testing only. Please do not send quotes in the test environment in IBM or MOT unless CBOE specifically asks you to do so. All other classes are fine for quoting.

- The CBOE Hybrid system contains a setting which monitors the bid ask width. If the bid/ask width is wider than the value contained in the setting the series will not open and after the opening market orders will not execute. This setting is currently set for $5.00, as this is the maximum bid/ask width after the opening. Effective July 1, 2005, the system will utilize

different maximum bid/asks widths for the opening and intra-day. The intra-day widths will remain the same, $5.00. Maximum bid/ask widths for all series will be set at the legal LEAP limit. The system does not have separate settings for LEAPS and non-LEAP series. However, the CBOE rules require opening quotes for non-LEAPS to be the normal legal width.

3e, W_MAIN-ONE-CFE Order Test Plan (includes 3k, CFE Supplemental Tests)

- The expected result of step ICM.130 is now "User receives order cancel notification right away and CBOE processes order cancellation at the end of the quote trigger. Market-Maker may receive a fill report at the end of the quote trigger." in the In-Crowd Market-Maker ("ICM") Orders section.

- Changed "ICM Strategy orders are not supported at this time" to "ICM Strategy orders are supported at this time."

- Added Preferred DPM (PDPM) firm acronyms to step OP.40 in section Order Parameters.

- Added a section Order Guaranteed Message Delivery to ensure that there are no undelivered messages waiting in queue to be delivered to the user.

- Quote Trigger Notifications are currently turned off in production.

- Added a comment to the expected result of step OE.20 in the Order Exceptions section: Options orders will route to clearing firm trading floor booth when the product state is closed.

3f, Clearing Firm, Duplicate Message Test Plan

- Busts are not applicable for options. Numerous steps are shaded to reflect this.

3g, Strategy Quote Test Plan - ONE-CFE

- No changes

3i, W_MAIN-ONE-CFE Strategy Order Test Plan

- W_MAIN allows up to 8 legs in one strategy product. Other sessions (CFE_MAIN, ONE_MAIN) allow up to 4 legs in one strategy product.

- Added a step SOP.35 in the Strategy Order Parameters section to test order origin In-Crowd Market-Maker.

3m, Stock Trading On CBOEdirect (STOC) Order Test Plan

- No changes

3n, Stock Trading On CBOEdirect (STOC) Quote Test Plan

- No changes

3o, Stock Trading On CBOEdirect (STOC) DPM Administrative Test Plan

- No changes

Phase 4 Test Plan

- Added Quote Locks to step Q.620 in the "Autoquoting (Mass Quoting)" section and step Q.691 in the "Quote Fills" section.

- Added a Complex Order section.

- Phase 4 testing does not allow firm to download products, enter quotes or orders in actual production classes. Firm must use test classes only. Added list of test classes in CBOE, CFE, and ONE exchanges.