



OneChicago

CME User Reference Guide

V 5.0

Document History

Document Version	Publish Date	Modifications Since Last Revision
1.0	10/24/02	N/A
2.0	09/30/03	Products section added Opening Times Changed References to FIX 2.3 Express removed Corporate Events section added
3.0	11/07/03	Updated Section 6 For Order Types With Market and Stop Orders With Protection Points
4.0	01/27/04	Updated Section 8.4 on Market Data Snapshots
5.0	02/18/08	Removed references to FIX 2.3

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1. Introduction

1.1 BACKGROUND

U.S. Exchanges were given approval to offer futures on individual stocks and narrow based indices after restrictive provisions within the Shad-Johnson Accord were rescinded. On May 14, 2001, Chicago Mercantile Exchange (“CME”), the Chicago Board Options Exchange (“CBOE”), and the Chicago Board of Trade (“CBOT”) created the OneChicago joint venture to introduce security futures.

OneChicago is an electronic exchange. The CBOE*direct* trading host will serve as OneChicago’s matching engine. Orders will be able to be entered through either CBOE’s CBOE*direct*[™] electronic platform or CME's GLOBEX[®] electronic trading system.

In order to provide liquidity for security futures, OneChicago has contracted with Lead Market Makers (LMMs) who are obligated to providing continuous, two-sided market quotes for all products to which they are appointed.

Current members of CME, CBOE, and CBOT are automatically members of OneChicago and can trade through existing memberships and accounts. No new membership fees or applications are required.

All market participants have access to trade at OneChicago. Investors do not need to be a member of the OneChicago exchange in order to trade and may hold positions in OneChicago security futures in either a securities or a futures brokerage account.

The Options Clearing Corporation (“OCC”) will clear all OneChicago trades. CME and CBOE members who are not members of the OCC may clear their trades through a special OCC account with positions maintained at the CME Clearing House

Security futures will be jointly regulated by the Securities Exchange Commission and the Commodities Futures Trading Commission. OneChicago has contracted the CME Regulatory Division to provide regulatory services.

1.2 PURPOSE

CME GLOBEX users are this document's intended audience. The purpose of this document is to highlight functional, market data, and operational support differences for CME users related to the trading of OneChicago security futures as compared to the trading of GLOBEX-only futures.

1.3 SCOPE

The scope of this document includes topics related to the following:

- Help Desk Support
- Contract Characteristics
- Trade Matching
- New Order Attributes
- Functionality Comparison
- Error Conditions
- Market Data

Please note that policy and rule documentation relating to the following topics will only be posted on the OneChicago Web site (www.onechicago.com).

- Error trades
- Block Trades and EFP's
- Fast markets
- System shutdowns

2. Help Desk Support

2.1 LEVEL 1 SUPPORT

Level 1 support refers to any support level that interfaces directly with a user. Level 1 support for OneChicago users will not reside exclusively with any single entity given the cooperative nature of this venture. Therefore, and depending on the user's profile (i.e. connection path, clearing relationship, nature of the issue), the user may receive Level 1 support from a combination of organizations.

The table listed below provides an overview of how Level 1 support center responsibilities will be apportioned given different user support needs.

Support Organization	Level 1 Support Description	Telephone Number
OneChicago Operations Management (OOM)	CBOE User Path Support	1-866-SBT-CBOE (1-866-728-2263)
	CBOE <i>direct</i> User Functionality Issue Support	
	All User Order and Trade Support	
CME GLOBEX Control Center (GCC)	CME User Functionality Issue Support	(312) 456-2391
	CME User Path Support	
CME Clearing	General	(312) 930-3170
	Administration	(312) 930-5676
	Deliveries	(312) 930-5640
	Financial	(312) 207-2594
	Post Trade Processing	(312) 930-4524
	Risk Management	(312) 648-3888
	Trade Processing	(312) 207-2525
OCC	Member Services	(800) 544-6091

2.2 USER PATH SUPPORT

The CME GCC will perform Level 1 technical support for only the CME customer base. Said technical support includes troubleshooting customer connection path issues related to the CME infrastructure.

The GCC will escalate technical issues within CME as is the current practice when it cannot resolve a potential problem on its own. CBOE will be responsible for supporting users who have technical issues related to a CBOE*direct* connection path.

2.3 FUNCTIONALITY ISSUE SUPPORT

As is the current practice for GLOBEX, the GCC will provide functionality “how to” assistance for GLOBEX Trader workstation. Should there be functionality issues for CME customers (i.e. functionality does not perform as expected), GCC will work in concert with OneChicago Operations Management (“OOM”) to determine if the problem’s root cause resides at CME, the connection between CME and CBOE, or at CBOE. OOM will be responsible for supporting users who have functional questions and issues related to CBOE *direct* interfaces.

2.4 ORDER AND TRADE SUPPORT

OOM will have exclusive access to the OneChicago match engine command and control interface tools. OOM’s exclusive access to the aforementioned command and control interface tools is required so that there is no effort overlay and procedural collision between OneChicago participating exchanges. Therefore, the OOM needs to be directly contacted for the following functions:

- Invocation of the Error Trade Policy
- Reporting of Block or EFP transactions

OOM will serve as a facilitator of last resort for activities that cannot be performed by the user during a period when the user is experiencing technical difficulties. The last resort activities that OOM will perform include:

- Querying order status
- Canceling working orders
- Providing fill status on trades.

All OOM activities in this regard are performed on a “best efforts” basis. OOM’s policy is to refrain from entering orders or quotes on behalf of a user.

2.5 USER VERIFICATION

OOM will verify the identity of any user before they perform related order and trade support. As such, OOM will have access to security information for all OneChicago users. OneChicago users must be pre-registered either with CBOE, CME, or CBOT and have their security information at the ready when they contact the OOM.

2.6 CME / CBOE POST TRADE PROCESSING

Depending on their choice of post trade processing exchange / firm (as pre-determined by the executing firm on submitted orders), the member firm responsible for an executed trade may need to contact or otherwise interact with its post trade processing systems of either CME or CBOE to resolve issues or

make modifications. Post trade processing may include account allocations or give-ups. Average pricing is only available via internal firm processes. Prices cannot be changed on ONE matched trades.

Retail customers should be aware of post trade processing firm relationships when entering orders for their customers. For further detail on this topic, please refer to the CME Clearing Web site link that relates to security futures.

2.7 CME CLEARING / OCC

Depending on the member firm's choice of clearing entity for their OneChicago security futures, they may need to contact either CME Clearing or the Options Clearing Corporation to properly maintain positions for which they are responsible.

3. Contract Characteristics

3.1 SECURITY FUTURES CONTRACT DEFINITIONS

OneChicago will list two quarterly expirations and two serial months for every security future product class at all times for a total of four (4) expirations per product class. OneChicago products will follow the quarterly cycle of March (H), June (M), September (U), and December (Z). Serial months traded will be the two nearest months that are not quarterly expirations.

Current Month	Listed Months														
	Jan (F)	Feb (G)	Mar (H)	Apr (J)	May (K)	Jun (M)	Jul (N)	Aug (Q)	Sep (U)	Oct (V)	Nov (X)	Dec (Z)	Jan (F)	Feb (G)	Mar (H)
January	S	S	Q			Q									
February		S	Q	S		Q									
March			Q	S	S	Q									
April				S	S	Q			Q						
May					S	Q	S		Q						
June						Q	S	S	Q						
July							S	S	Q			Q			
August								S	Q	S		Q			
September									Q	S	S	Q			
October										S	S	Q			Q
November											S	Q	S		Q
December												Q	S	S	Q

Contracts Available For Trading At OneChicago (Q = Quarterly; S = Serial Month)

Salient product characteristics for Single Stock Futures (single equity):

- Point Description of \$.01 = \$1
- Trading Venue of ONE
- No trading limits
- Minimum fluctuation of .01 = \$1 which is regular (there are no half ticks)
- Physically settled at settlement price on expiration day
- Contracts expire on 3rd Friday of the month (expiration will occur on Thursday if Friday is a holiday)
- Initial trading hours: 8:30 AM – 3:00 PM Central Time

- Position Limits on the derivatives of certain illiquid cash securities

Salient product characteristics for Narrow-Based Indices (NBIs):

- Point Description of \$.01 = \$5
- Trading Venue of ONE
- No trading limits
- Minimum fluctuation of .01 = \$5 which is regular (there are no half ticks)
- Physically settled at settlement price on expiration day. See the OneChicago Web site at www.onechicago.com for procedures to determine actual delivery price of components.
- Contracts expire on 3rd Friday of the month (expiration will occur on Thursday if Friday is a holiday)
- Initial trading hours: 8:30 AM – 3:00 PM Central Time

Salient product characteristics for Exchange Traded Funds (ETFs):

- Point Description of \$.01 = \$5
- Trading Venue of ONE
- No trading limits
- Minimum fluctuation of .01 = \$5 which is regular (there are no half ticks)
- Physically settled at settlement price on expiration day. See the OneChicago Web site at www.onechicago.com for procedures to determine actual delivery price of components.
- Contracts expire on 3rd Friday of the month (expiration will occur on Thursday if Friday is a holiday)
- Initial trading hours: 8:15 AM – 3:15 PM Central Time

NOTE: Security futures won't have CME sponsored order protection parameters related to price banding or quantity restrictions as is customary with GLOBEX-only products.

3.2 SECURITY FUTURES NAMING CONVENTIONS

The following outlines the product naming conventions related to security futures:

- The ticker symbol used for security futures can be up to eight characters in length.

- IBM1CZ2

- SUNW2CG3
- The first four alpha characters (or less) represent the ticker symbol of the underlying equity or narrow based indices. When the underlying symbol is less than four characters, all characters that follow will be left justified. No imbedded blanks will be utilized.
 - **IBM** (International Business Machines)
 - **IBM1CZ2**
 - **SUNW** (Sun Microsystems)
 - **SUNW2CG3**
- The next character is numeric. It represents the contract deliverable (used to differentiate same-stocks resulting from corporate event actions).
 - **1** (base number of shares (usually 100 shares))
 - **IBM1CZ2**
 - **2** (deliverable number of shares plus any cash)
 - **SUNW2CG3**
- The next character is an alpha designation. It represents the Exchange (i.e. C for OneChicago).
 - **C** (OneChicago)
 - **IBM1CZ2**
 - **SUNW2CG3**
- The next two characters identify the delivery month and year for the contract. Delivery month is always designated by a letter. Delivery year is always designated by a number with a range of 0-9.
 - **Z2** (December, 2002)
 - **IBM1CZ2**
 - **G3** (February, 2003)
 - **SUNW2CG3**

NOTE: Displays will be different for different vendors.

3.3 SPREADS

CME will not initially support the trading of security futures spread contracts.

3.4 PRODUCTS

Please reference the OneChicago web site (www.onechicago.com) for the current list of Single Stock Futures, Narrow Based Indices, and Exchange Traded Funds.

3.4 CORPORATE EVENTS

“Corporate Events” is any action initiated by a security that affects its contract specification. Corporate events may include such actions as stock splits, cash adjustments, and mergers.

Any one of these events may impact the price, quantity, or name of the security future. OneChicago will notify all customers in advance of these events. For any further information on Corporate Events, please reference the OneChicago web site (www.onechicago.com).

4. Trade Matching

4.1 TRADE MATCH ALGORITHM

OneChicago has contracted with CBOE to utilize the CBOE*direct* match engine to perform matching functionality. Of the available algorithms, OneChicago has a strict price-time priority with an overlay of Lead Market Maker Participation Rights.

Price-time priority is defined as “preferencing” resting orders on the book first as to the highest bid and lowest offer price and then within each price point, by the time the order was received by the system.

4.2 LEAD MARKET MAKER TRADE PARTICIPATION RIGHT

As an incentive to provide continuous two-sided markets, Lead Market Makers (“LMMs”) are given a participation right to all incoming orders as long as they have established or joined the best bid or best offer prior to the order arriving at OneChicago.

The Lead Market Maker Trade Participation Right is expressed as a percentage of the incoming order size. Initially, the percentage will be set to 30%. LMMs will not be allocated a quantity greater than the total size of their bid or offer. To participate in a trade, the LMM’s quote and/or order must be present at the best price. The LMM does not have the opportunity to “step up” to a better price once an incoming order is received.

4.3 ONECHICAGO ALGORITHM EXAMPLES

Example A

1. Incoming limit order to sell a 100-lot
2. LMM Trade Participation Right = 30%
3. Order 1 has earliest timestamp; LMM has latest timestamp
4. Book’s resting bids and Trade Match results:

Category	Bid Qty	Filled from TPR (30%)	Total Fills	Remaining Qty
Order 1	100		70	30
Order 2	200		0	200
Order 3	200		0	200
LMM	100	30	30	70
Total	600	30	100	500

Example B

1. Incoming limit order to sell a 200-lot
2. LMM Trade Participation Right = 30%
3. Order 1 has earliest timestamp; Order 5 has latest timestamp
4. Book's resting bids and Trade Match results:

Category	Bid Qty	Filled from TPR (30%)	Total Fills	Remaining Qty
Order 1	100		100	0
Order 2	200		40	160
Order 3	100			100
LMM	100	60	60	40
Order 5	100			100
Total	600	60	200	400

Example C

1. Incoming limit order to sell a 200-lot
2. LMM Trade Participation Right = 30%
3. Order 1 has earliest timestamp; Order 4 has latest timestamp
4. Book's resting bids and Trade Match results:

Category	Bid Qty	Filled from TPR (30%)	Total Fills	Remaining Qty
Order 1	50		50	0
Order 2	50		50	0
LMM	300	60	100	200
Order 4	100		0	100
Total	500	60	200	300

5. New Order Attributes

5.1 OPEN/CLOSE INDICATOR

Orders submitted to OneChicago may include an Open / Close indicator to identify whether they are increasing or decreasing a customer position. If a customer order is not marked with either an Open or Close indicator, then CME will automatically default the order with an “open” designation.

Member firms must make post trade modifications or clearing house position adjustments to reconcile their books with those of their clearinghouse. As market maker positions are carried net at the OCC, the Open / Close code has no effect on trades in these positions.

5.2 CUSTOMER TYPE INDICATOR AND ORIGIN COMBINATIONS

Security futures will support two new Origin values in addition to the standard Origin values which are currently recognized by the futures industry. The below table lists valid CTI and Origin values which will be available for security futures.

CTI Value	Definition	Notes
CTI 1	Applies to orders entered by a member for their own account or an account in which they have a financial interest.	This CTI value will remain consistent for security futures.
CTI 2	Applies to orders entered for the proprietary account of the clearing firm.	This CTI value will remain consistent for security futures.
CTI 3	Applies to orders entered by a member for the account of another member.	This CTI value will remain consistent for security futures.
CTI 4	Applies to all order types that do not fall into the above three categories (i.e. non-member).	This CTI value will remain consistent for security futures.

Origin Value	Definition	Notes
Origin 1	Applies to customer orders.	This Origin value will remain consistent for security futures.
Origin 2	Applies to non-customer orders.	This Origin value will remain consistent for security futures.
Origin 5	Applies to Reserve Customer (RESC) orders.	<ul style="list-style-type: none"> • New Origin value related to security futures. • Used to indicate that a customer account chooses to be insured under the Security Insurance Protection Corporation (SIPC). SIPC insurance, in part, protects investors from broker-dealer failure. The use of the Origin 5 designation is strictly optional at the customer's behest as they may still choose to transact in a security future in Origin 1 as well.
Origin 6	Applies to all orders entered by a Market Maker.	<ul style="list-style-type: none"> • New Origin value related to security futures. • Market Makers (including LMMs) may not submit quotes via GLOBEX access paths. • Entities clearing security futures trades in the Market Maker range at OCC may enter orders via GLOBEX access paths. These orders must be submitted under Origin 6. • Market Makers of other U.S. Options exchanges may also submit orders under this designation, but they must use a non-member (i.e. non-One Chicago) CTI code on their orders.

5.3 VALID CTI/ORIGIN VALUE COMBINATIONS

The below table lists valid CTI and Origin value combinations for security futures as designated by OneChicago. Note that CME CTI / Origin combinations will be translated into the appropriate CBOE codes for submission to the match engine and OCC Origins for trade clearing at OCC.

CTI / Origin Value Combinations		CBOE Origin Value	OCC ORIGIN VALUE	Typical Usage
CTI 1 / Origin 1	=	V	C	Member for his own account
CTI 1 / Origin 2	=	E	F	Member for a house account
CTI 1 / Origin 5	=	Q	C	Member for a customer SIPC account
CTI 1 / Origin 6	=	M	M	Member for their market maker account
CTI 2 / Origin 2	=	F	F	Member firm for proprietary account
CTI 3 / Origin 1	=	G	C	Member for another member order
CTI 3 / Origin 2	=	H	F	Member for a house account
CTI 3 / Origin 5	=	R	C	Member for a member wishing SIPC protection
CTI 4 / Origin 1	=	C	C	Non-member customer account
CTI 4 / Origin 2	=	O	F	Non-member house account
CTI 4 / Origin 6	=	N	M	Non-member for a market maker account

6. *Functionality Comparison*

6.1 USER ACCESS

OneChicago security futures transactions will be routed to CBOE's CBOE*direct* trading host for matching. CME users can access OneChicago security futures through one of the following CME-sponsored access points:

- GLOBEX Trader
- CME iLink (1.0 or 2.0)
- TOPS
- GALAX-C™

6.2 ORDER ENTRY FUNCTIONALITY PROVIDED BY CME USER PATHS

All CME user access methods do not currently offer the exact same functionality for GLOBEX-only futures. Furthermore, the OneChicago match engine and CME's GLOBEX user access methods do not exactly correlate with one another for supported functionality. As such, CME users must understand that some of the functionality that is currently available for GLOBEX-only trading will not be available when entering orders for security futures.

The below table illustrates what subset functionality CME users will be able to utilize for a given access method in relation to Order Entry, Order Types, Order Qualifiers, and Order Management when entering orders for security futures.

Please note: if at least one CME user path can provide a specific functionality, then that functionality is included in the table and all user paths are compared equivalently.

- **If no CME user paths can provide a specific functionality, then that functionality is not included in the table.**
- **CME users will not be required to make any programming changes in order to submit orders for security futures.**

	LOBEX TRADER	CME ILINK	TOPS	GALAX-C
Order Entry:				
Bid, Offer	YES	YES	YES	YES
Hit, Take	YES ¹	NO	NO	YES
Bid & Ask	YES ²	NO	NO	NO
Order Types:				
Market	YES	YES	YES	NO
Market WP	YES ⁵	YES ⁵	NO	NO
Limit	YES	YES	YES	YES
Stop	NO	NO	NO ⁴	NO
STOP WP	NO ⁶	NO ⁶	NO ⁶	NO ⁶
Stop Limit	YES	YES	YES	NO
Mrkt. If Touched	YES	NO	NO	NO
Order Qualifiers:				
Session	YES ³	NO	NO	NO
Day	YES	YES	YES	YES
Good Til	YES	YES	YES	NO
Fill And Kill	YES	YES	NO	NO
Order Management:				
Order Cancel	YES	YES	YES	YES
Order Modify	YES	YES	YES	NO

- 1 GLOBEX Trader Hit or Take orders will be converted into Fill And Kill orders before being submitted to the CBOE*direct* match engine.
- 2 GLOBEX Trader Bid & Ask orders will result in separate buy and sell orders being submitted to the CBOE*direct* match engine.
- 3 GLOBEX Trader Session orders will be converted into Day orders before being submitted to the CBOE*direct* match engine.
- 4 Outright Stop orders will be rejected for security futures. CME FIX API 2.3 and TOPS currently support Stops, but only for ES and NQ (ES = E-mini S&P. NQ = E-mini NASDAQ).
- 5 **Market With Protection orders are only allowable for the CME GLOBEX match engine.** However, if users enter this order type for SSF products, they will be converted into outright Market orders before submitted to CBOE*direct* match engine.
- 6 **Stop With Protection orders are only allowable for the CME GLOBEX match engine.** However, if users enter this order type for SSF products, they will be rejected as CME does not support Stop orders for SSF products.

NOTE: OneChicago policy prohibits the use of automatic order generation software. Entities wishing to engage in this type of activity must use CBOE*direct* quote functionality via direct attachment to CBOE*direct*.

6.3 ORDER FUNCTIONALITY CAUSING ORDER REJECTS FOR CME USER PATHS

Order characteristic functionality is currently available for some/all CME user paths as it relates to non-security futures. For security futures, however, **the order characteristics listed below will cause a security futures order to be rejected** from a CME user path perspective:

- One cancels another (OCO) order
- Fill or Kill (FOK) order
- Order that specifies a minimum quantity
- Order that specifies a disclosed quantity
- Good Thru Date (GTD) orders
- SX (SIMEX) orders
- Stop-Limit Fill and Kill (FAK) orders

6.4 ORDER FUNCTIONALITY ONLY SUPPORTED BY CBOE FRONT ENDS

The below list details which functionality will be supported strictly by CBOE*direct* sponsored user path connections.

6.4.1 Spread Orders

Only CBOE*direct* sponsored front ends will support calendar spreads for security futures. Calendar spread orders will be integrated with the books of the individual instruments. CBOE*direct* will assure that the spread legs are executed in pairs. Inter-market spreads (spreads between two different products) will not be supported.

6.4.2 Quotes and Quote Cancels

CBOE*direct* users are the only OneChicago user types who have the opportunity to become LMMs. CBOE*direct* attached market makers (including LMMs) will be the only users authorized to enter and cancel quotes.

6.4.3 Request For Quotes (RFQ) Messaging

CBOE*direct* users are the only OneChicago user types who have the functionality to issue RFQs. However, if a CME user enters a Market order and the market bid-ask spread exceeds the OneChicago prescribed width, then the OneChicago match engine will automatically generate an RFQ on behalf of the

CME user and distribute it to market maker type users directly attached to CBOE*direct*.

6.4.4 Trade Bust Messaging

Only users connected with a CBOE*direct* sponsored interface will receive CBOE*direct* match engine generated messages related to trade busts. If a CME user is a party to a security futures trade bust, then they will not be sent an order execution cancellation message as is the current practice.

Instead, the user will be solely notified of the trade bust by means of GCC text communications. Trade busts will be communicated to all CME users via standard GLOBEX Control Center notification protocols in keeping with the current practice (e.g. text message alerts).

Please refer to the error trade procedural document which is posted on the OneChicago security futures Web site for information relating to invoking an error trade bust request (www.onechicago.com).

6.4.5 Block Trades and EFP's

Only users connected with a CBOE*direct* sponsored interface will receive OneChicago match engine generated messages related to Block Trades and EFP's. For CME user paths, Block Trade and EFP transactions will be communicated to CME users via standard GLOBEX Control Center notification protocols in keeping with the current practice.

As such, regardless of whether a CME user is involved in a Block Trade or EFP transaction, they will receive notification of said transaction only by means of GCC text communications. Block and EFP trade reports will be disseminated by the CFN market data feed.

Please refer to the Block Trade and EFP procedural documents which are posted on the OneChicago security futures Web site for related procedures on how to register for and submit these trade types (www.onechicago.com).

6.4.6 Contingency Order Types

The displayed table summarizes which contingency order types are supported by the CBOE*direct* sponsored interfaces as compared to what CME user paths can enter.

CBOE<i>direct</i> supported Contingency Order Types	CME supported Contingency Order Types
Stop	Not Supported by CME
Stop Limit	Supported for all CME user paths except GALAX-C
AON	Not Supported by CME
FOK	Not Supported by CME
FAK (a.k.a. IOC)	Supported by all CME user paths except TOPS

6.5 MARKET ORDER FUNCTIONALITY

The CBOE*direct* match engine protects Market orders by automatically executing such orders against the best bid or offer only if there is a “standard” market (standard market is defined by the book width being less than or equal to the Exchange Prescribed Quote Width).

If there is no standard market, CBOE*direct* match engine puts the Market order on hold and solicits quotes by automatically sending an RFQ message to all attached market makers subscribing to the contract. CBOE*direct* match engine will attempt to execute the Market order after any one of the following conditions is true:

- The best quote’s width is at or within the Exchange Prescribed Width
- At least one LMM has responded
- A Limit order on the same side as that market order is received that would match the best bid or offer and at least one standard quote has been received.

If none of the above conditions are met, CBOE*direct* match engine will generate additional RFQs until the condition is satisfied.

If a Market order is queued, subsequent Market orders for the same instrument are queued behind the initial Market order. This logic ensures that Market orders are processed in time sequence.

6.6 CONTINGENCY ORDER FUNCTIONALITY

All contingency orders have the lowest execution priority

6.6.1 Fill and Kill (FAK)

Fill And Kill (“FAK”) orders must be executed for whatever quantity is possible within five (5) seconds of being accepted by CBOE*direct* match engine. Any

quantity that cannot be executed within that timeframe is canceled. FAK orders are accepted only during the “Continuous Trading” State.

6.6.2 Fill or Kill (FOK)

Fill Or Kill (“FOK”) orders will be executed at their full quantity within five (5) seconds of being accepted by the CBOE*direct* match engine or not at all. FOK orders are accepted only during the Trading State. CME user paths will not support the entry of FOK contingency order types.

6.6.3 All or None (AON)

All Or None (“AON”) orders must be executed at their full quantity or not at all. The CBOE*direct* match engine accepts AON orders at any time. CME user paths will not support the entry of AON contingency order types.

6.6.4 Stop Orders

Stop Orders will be executed at their full quantity once the market trades at, or is bid above or offered below, the stop price. CME user paths will not support the entry of Stop Order contingency types.

6.6.5 Stop Limit Orders

Stop Limit Orders will be executable once the market trades at, or is bid above or offered below, the stop price. The order matches until the complete quantity is satisfied, or the price reaches the limit price.

7. Error Conditions

7.1 ERROR CONDITIONS RELATED TO ENTERING ORDER PRICES

When entering an order for OneChicago security futures, GLOBEX users are required to enter a price format that includes a decimal point (all OneChicago security futures have a point description of \$.01). ***This requirement applies to all paths into GLOBEX except for TOPS.***

Failure to enter a decimal point at time of order entry will cause the order to be delivered to the CBOE*direct* match engine with two zeroes appended to the order price. This occurs because CME systems look for a decimal locator on the order price. When a decimal locator is not detected, CME systems assume the decimal is located at the end of the entered price.

Therefore, if the desired order price is "\$24.57," the user must enter "24.57." If a user erroneously enters a price of "2457" (i.e. with no decimal), the order will be delivered to CBOE*direct* match engine with a price of "\$2457.00" (instead of the user's intended price of \$24.57). The table below compares paths into GLOBEX and the requisite price format at time of order entry.

CME User Path	Desired Price	Entered Price
GLOBEX Trader	\$24.57	24.57
CME iLink	\$24.57	24.57
TOPS	\$24.57	2457

For CME iLink, your ISV may choose to pre-format the security futures price before submitting to CME systems. Please verify with your front-end provider whether a pre-formatted price format condition exists.

7.2 CONDITIONS RELATED TO ORDER MODIFICATIONS

Because orders for security futures will be routed from GLOBEX to the OneChicago match engine for execution, certain order management procedures are different for security futures products than for GLOBEX-only products. One such difference relates to the process of modifying resting orders. The section below explains how to modify resting orders for security futures products, depending on the user's path for accessing GLOBEX.

7.2.1 CME iLink

Order Modification for Price Only:

To modify only the price of a resting order, the user must change the price and re-enter the total quantity they originally wanted filled before submitting the order modification (regardless of whether they have already received partial fills).

Order Modification for Quantity Only:

To modify only the quantity of a resting order, the user must change only the quantity before submitting the order modification.

Order Modification for Price and Quantity:

To modify both the price and quantity of a resting order, the user should change the quantity and price to the desired levels and submit the order modification.

7.2.2 GLOBEX Trader

Order Modification for Price Only:

When attempting to modify a resting order using the Modify Order Dialog Box, the dialogue box is brought up with the Quantity field defaulted to "REMAINING QUANTITY."

If the user changes only the Price field and leaves the Quantity field at "REMAINING QUANTITY," the order will be rejected. In order to avoid this problem, the user must always type in the Quantity on the Modify Order Dialog Box even if the quantity is not being modified.

Order Modification for Quantity Only:

When attempting to modify an order using the Modify Order Dialog Box, the dialogue box is brought up with the Quantity field defaulted to "REMAINING QUANTITY." If a user only changes the "REMAINING QUANTITY" field and leaves the Price field the same, the order modification will be submitted with the new quantity and the previously existing price.

Order Modification for Price and Quantity:

When attempting to modify an order using the Modify Order Dialog Box, the dialogue box is brought up with the Quantity field defaulted to "REMAINING QUANTITY." If a user changes the "REMAINING QUANTITY" field and also changes the Price field, the order modification will be submitted with the new quantity and price.

7.2.3 TOPS

Order Modification for Price Only:

It is not possible to modify only the price of a resting order using TOPS. Instead, the user must cancel the order and re-enter a new order with the desired price and quantity.

Order Modification for Quantity Only:

To modify only the quantity of a resting order, the user should simply change the open quantity before submitting the order modification.

Order Modification for Price and Quantity:

To modify both the price and quantity of a resting order, the user should update the price and change the open quantity before submitting the order modification.

7.3 OTHER GLOBEX TRADER ERROR CONDITIONS

GLOBEX Trader			
Error Condition Brief Description	Error Condition	Error Condition Outcome	Remedy
Market Depth Window	The Market Depth window will be not be filled in with any messaging.	No data is available.	N/A
Instrument Summary Window	The Instrument Summary window has a field called Nb which is sums the number of orders that comprise the total quantity of a bid or ask.	This feature is not in scope for security futures and will default to "1" for any bid or ask price level.	N/A
Hits and Takes	When hitting a bid (F12 key) or taking an offer (F1 key), the <u>Order Dialog Box</u> is populated as a Market order with a validity of "FAK".	The OneChicago match engine does not support any contingencies on Market orders, so the order will reject.	Before submitting the order, the user must change the Order Validity of the order to either "GTC," "Session," or "Day."
Global Modification	The OneChicago match engine does not support GLOBEX Trader global modifications.	Global modify requests will be rejected.	Submit modifications on an order by order basis.
Cl. Ref	In the Order Dialog Box, the "Cl. Ref" field is limited to 10 characters.	Although the user can type up to 13 characters, anything over 10 characters will cause the order to reject.	Users should not type any Cl. Ref values greater than 10 characters in this field.
Open/Close Indicator	<ul style="list-style-type: none"> On the <u>Order Entry</u> 	Security futures require a	Users need to be

GLOBEX Trader

Error Condition Brief Description	Error Condition	Error Condition Outcome	Remedy
Default	<p><u>Dialog Box</u>, a user can enter a Posting Action of “O,” “C,” or leave the field blank. If a Posting Action is left blank, the order will be sent with the default Clearing nature that is set up in the Order Setup (which is accessed in the Order Management window’s Setup dropdown menu, selecting Orders, and using the Clearing Nature dropdown menu to select Default, Position Opening, or Position Closing).</p> <ul style="list-style-type: none"> • If the default is set as Position Closing (“C”), and the order’s Posting Action is sent as blank, the order will be sent with a Position Closing (“C”). • if a user types in an “O” or “C” in the Posting Action field, this will override the default settings. 	Posting Action for all orders entered, except market makers. Failure to enter the desired Posting Action may result in the incorrect value to be submitted.	aware of Posting Action set up in Clearing Defaults.
Care Orders	For security futures, the feature “Cancel Care Order on Sending” must be de-selected.	<ul style="list-style-type: none"> • If not de-selected, orders that are released into the market from the Care window may not be able to be canceled. • Once released to the market, a Care Order cannot be modified above the order’s original quantity. 	De-select feature “Cancel Care Order on Sending” for security future products.

7.4 OTHER ERROR CONDITIONS RELATED TO ALL CME USER PATHS

The below table illustrates error conditions which CME users must understand given the processing logic inherent to the OneChicago match engine.

All CME User Paths			
Error Condition Brief Description	Error Condition	Error Condition Outcome	Remedy
In-flight fill condition for cancelled orders	<p>The various pathways for entering CME orders would reject a cancel replace on a security future order known to be closed.</p> <p>In contrast, the OneChicago match engine responds to a cancel replace on an already closed order with a new order.</p>	<p>An in-flight fill could cause CME pathways to not be aware that an order was closed. A new order will be generated by the OneChicago match engine in this scenario.</p>	<p>User should cancel the newly created working order.</p>
Cancel and Cancel Replace on same order processed out of order by OneChicago match engine	<p>Cancel and cancel replace requests are not necessarily submitted to the OneChicago match engine in FIFO order. Therefore, a cancel replace request followed by a cancel request before the cancel replace was confirmed could be delivered into the OneChicago match engine in the reverse order (cancel request followed by the cancel replace request).</p>	<p>If the delivery sequence is inverted, the cancel request will close the order and the cancel replace request will create a new order for the client.</p>	<p>User should cancel the newly created working order.</p>
Rejected messages during CME server failover	<p>During fault tolerance conditions when a CME order entry server is failing over, orders will be rejected instead of queued.</p>	<p>The error message on the reject messages will be "Request rejected during gateway failover – resubmit".</p>	<p>The order should be resubmitted.</p>
Rejection due to high order flow	<p>Orders may be rejected by the OneChicago match engine during times when one instrument or multiple instruments for a particular order entry server are experiencing a very high order flow.</p>	<p>The error message on the reject messages will be a "Call Limit Exceeded" error message.</p>	<p>The order should be resubmitted.</p>
Rejection for cancel request	<p>The OneChicago match engine logic for handling cancel requests sent by CME customers allows for the possibility that a</p>	<p>The error message in the reject message will be "initially accepted request rejected due to in-flight fill".</p>	<p>The cancel or cancel replace request should be resubmitted with a quantity that matches</p>

All CME User Paths			
Error Condition Brief Description	Error Condition	Error Condition Outcome	Remedy
	cancel or cancel replace could be rejected even though the partially unfilled or open order to be cancelled is still open.		the unfilled quantity.
Rejection of FAK order due to price	The OneChicago match engine will reject FAK orders when the associated order price does not equal or better the best bid-ask price.	Order will be rejected with an "Order eliminated" error message.	Resubmit FAK order at a price that equals or betters the best bid-ask price.
Rejection of FAK order due to time limit expiration	If a FAK order is not filled within 5 seconds of being received by the OneChicago match engine, it will be rejected.	Order will be rejected with an "Order eliminated" error message.	Resubmit FAK order at a price that equals or betters the best bid-ask price.

All CME User Paths			
Error Condition Brief Description	Error Condition	Error Condition Outcome	Remedy
Cancellation of GTC orders due to server rebalancing	Due to load balancing constraints related to the order entry servers, the CME may need to periodically change which connections it utilizes to route particular security futures.	GTC orders for those security futures that have been routed to another order entry server will need to be cancelled and resubmitted.	Client will receive notification from the GCC of the GTC orders that need to be cancelled.
Incorrect order attributes due to Corporate Event	<ul style="list-style-type: none"> Some corporate events cause resting orders for the affected security future instruments to have their price and quantity changed. Please note that corporate events may be announced during a trading state, but the related effect on resting orders will never be manifested during a trading state. 	Failure to cancel affected orders may cause the resting orders to persist at unreasonable prices after the corporate event takes place.	If a corporate event is pending, clients will be requested by GCC to cancel their orders for the affected security future instrument.

8. Market Data

8.1 MARKET DATA BROADCASTING

OneChicago has established a Lead Market Making Program for its security futures products. LMMs assigned to a security future will be obligated to provide a continuous and reasonable two-sided quote. The market quote for security futures is expected to change at a rate that approximates the rate of change in the underlying cash market equity.

Underlying equity prices routinely change at a rate between once to twice a second. As such, it is anticipated that security futures will generate a large market data stream. CME has chosen to implement a strategic course which balances client and exchange infrastructure capabilities with the business requirement to disseminate timely market data information.

8.2 MARKET DEPTH AND LAST PRICE

Four contract months will be available for trading for each security future. CME will broadcast the top five market depth limit order price levels for the first two listed months and only the top of book limit order prices for the last two contract months.

CME will only broadcast limit orders for every listed contract month. Stop, Stop Limit, FOK, and AON contingency order types will not be included in what is broadcast to CME users. However, the FAK contingency order type will be included in the limit order price levels.

If an FAK contingency order type betters the last price, then CME will broadcast the bettered price as the complimentary last price. CME will not broadcast a new complimentary last price if the last price was bettered by a FOK or AON contingency order type since FOK and AON order types have associated quantity restrictions. CBOE, in contrast, will not broadcast a new last price if a contingency order type betters the last price.

8.3 LAST PRICE AND TRIGGERING OF STOP ORDERS

Resting Stop or Stop Limit orders on the CBOE*direct* match engine can be triggered by a trade price or a same side Limit order price that equals or betters the stop's trigger price. For CME Globex-only products, Stop Limit orders are only triggered by a trade price.

8.4 MARKET DATA SNAPSHOT

CME will broadcast all OneChicago market data messages relating to trades and all updates regarding a new daily High/Low for all OneChicago contracts. Given the high volumes of book-depth updates in OneChicago markets, CME will broadcast periodic “snapshots of OneChicago’s market data quote streams related to book depth messages (i.e. quotes) that do not contain trade information or new daily High/Low messages

For all OneChicago Single Stock Futures and futures on Exchange Traded Funds, the snapshot rate for filtering book depth messages for the front serial and front quarterly contracts will be one (1) message per second. For these products, CME will filter book depth updates for the second serial and quarterly contract months at the rate of one message every five (5) seconds.

For OneChicago Narrow-Based Index products, the snapshot rate for filtering book depth messages for all contract months will be one (1) message per second.

OneChicago may adjust these snapshot rates over time depending on customer preferences, the frequency of updates observed in the market, system capacity issues, and other factors.

8.5 MARKET STATE MESSAGING

CME will be routing all security futures orders to the CBOE*direct* match engine for matching. It must be noted that the CBOE*direct* match engine does not support all market states to which CME users are currently accustomed for GLOBEX.

As such, market control states through which a security futures product will transition in a typical trading day will not exactly mirror those which are applied for GLOBEX-only products. The below table details what market control state changes through which security futures will transition for a typical trading day (all times are Central Time).

MARKET CONTROL STATES	TIMELINE (CENTRAL TIME)	GLOBEX TRADER		MDAPI		NOTES
		SUSPENSION FLAG INDICATOR "G"	IXM FLAG INDICATOR "S"	MJ MESSAGE	MG MESSAGE	
Mini Batch	3:00:00 AM to 6:15:00 AM	Yellow X	Green R	IXM Group Status = "M"	IXM 1 st character = "A" IXM 2 nd character = "R"	<ul style="list-style-type: none"> No CME user activity allowed. System runs maintenance cycle in preparation for next trading session.
Pre-Opening	6:15:00 AM to 8:30:00 AM	Green P	Green R	IXM Group Status = "P"	IXM 1 st character = "A" IXM 2 nd character = "R"	<ul style="list-style-type: none"> CME users may enter, modify, and cancel orders. No order matching occurs.
Opening Rotation Notice	8:30:00 AM	Red O	Green R	IXM Group Status = "O"	IXM 1 st character = "A" IXM 2 nd character = "R"	<ul style="list-style-type: none"> CME users may enter, modify, and cancel orders. Bids and offers are displayed in the book. No order matching occurs. After the first 10 seconds of this phase and if there is the potential for an opening trade, an Indicative Opening Price (IOP) is disseminated. The IOP is both recalculated and disseminated every 3 seconds thereafter.
<ul style="list-style-type: none"> Market Opening 	8:30:15 AM to 8:30:35 AM.	Red O <OR> "blank"	Green R <OR> "blank"	IXM Group Status = "O" <OR> = "S"	IXM 1 st character = "A"	<ul style="list-style-type: none"> CME users may enter orders during the actual opening, but those orders are put into a hold status until trading starts. Bids and offers are displayed in the book. Initial order matching occurs (opening price). The opening time for each security futures is randomly selected

MARKET CONTROL STATES	TIMELINE (CENTRAL TIME)	GLOBEX TRADER		MDAPI		NOTES
		SUSPENSION FLAG INDICATOR "G"	IXM FLAG INDICATOR "S"	MJ MESSAGE	MG MESSAGE	
					IXM 2 nd character = "R" <OR> = "blank"	<ul style="list-style-type: none"> between 15 and 35 seconds after the opening notice is sent. When the first instrument in any of the Security Groups opens (which is random every day provided there is a crossed market), then that Suspension Flag Indicator for which the instrument is part of will transition from "Red O" to "blank".
Continuous Trading	8:30:35 AM to 3:00 PM	"blank"	"blank"	IXM Group Status = "S"	IXM 1 st character = "A"	<ul style="list-style-type: none"> The starting time for Continuous Trading in a security contract will vary slightly from day to day given the random nature of the Market Opening. CME users may enter and modify orders. Bids and offers are displayed in the book. Order matching occurs.
					IXM 2 nd character = "blank"	

MARKET CONTROL STATES	TIMELINE (CENTRAL TIME)	GLOBEX TRADER		MDAPI		NOTES
		SUSPENSION FLAG INDICATOR "G"	IXM FLAG INDICATOR "S"	MJ MESSAGE	MG MESSAGE	
Surveillance Intervention	3:00:00 PM to 4:05:00 PM	Green H	Green R	IXM Group Status = "N"	IXM 1 st character = "A"	<ul style="list-style-type: none"> Trading session closed. CME users may cancel orders. No order modifications or new orders are accepted.
					IXM 2 nd character = "R"	
End Of Day Inquiries	4:05:00 PM to (Next Business Day) 3:00:00 AM	Green H	Green R	IXM Group Status = "F"	IXM 1 st character = "A"	<ul style="list-style-type: none"> No CME user activity allowed
					IXM 2 nd character = "R"	

MARKET CONTROL STATES	TIMELINE (CENTRAL TIME)	GLOBEX TRADER		MDAPI		NOTES
		SUSPENSION FLAG INDICATOR "G"	IXM FLAG INDICATOR "S"	MJ MESSAGE	MG MESSAGE	
For Emergency Market Halts						
Emergency Market Halt	Anytime during trading day	"blank"	Green R	IXM Group Status = "S"	IXM 1 st character = "A"	<ul style="list-style-type: none"> The IXM Group State will not reflect a change when a market gets halted. Instead, the halt will be reflected in each individual instrument.
					IXM 2 nd character = "R"	

8.6 RLC MESSAGES SUPPORTED FOR SECURITY FUTURE PRODUCTS

The below table outlines which CME RLC messages will be supported for security futures.

RLC Messages	Supported for Security Futures?
(M0) Last	Supported
(M1) Clearing	Not Supported
(M2) Reset Of Statistics	Not Supported
(M3) NSC Closure	Not Supported
(M4) Request For Quote	Not Supported
(M5) Opening Trade	Supported
(M6) Trade	Supported
(M7) Price	Supported
(M8) Theoretical Opening	Supported
(M9) Opening Summary	Supported
(MA) Limits	Supported
(MB) Supply Or Demand Display	Not Supported
(MC) Delete N Lines	Not Supported
(MD) Retransmitted Orders	Not Supported
(ME) Price Override	Not Supported
(MF) Market Sheet	Not Supported
(MG) Instrument Status	Supported
(MH) Trading Day Timetables	Not Supported
(MI) Intermediate Thresholds	Supported
(MJ) Group State Marker Change	Supported
(MK) NSC Starting	Not Supported
(ML) Start Of The Instrument Referential Broadcasting	Not Supported
(MM) End Of The Instrument Referential Broadcasting	Not Supported
(MO) Creation Of Instrument Characteristics	Supported
(MQ) Average Weighted Sheet	Not Supported
(MS) Market Sheet (Stop or AON)	Not Supported
(MT) Delete N Lines (Stop or AON)	Not Supported
(MY) Implied Spreads	Not Supported

8.7 RLC MESSAGES ATTRIBUTE CHANGES

The below section outlines attribute changes for those RLC messages which are supported for security futures.

8.7.1 RLC Common Header

Attribute Name	Change
Sender ID	Set to a value of "20"
Inflow Message Number	Will be reset to "1" if a Market Data gateway fails over to a backup
Outflow Message Number	Will be reset to "1" if a Market Data gateway fails over to a backup
Exchange Code	Set to value of "008" except for "MO," MI," and "M7" messages which will remain "016"

8.7.1.1 M0 – Last

The M0 message will be generated for the following conditions:

- Settlement Price is determined (or updated) at the start of a new trading day
- New Theoretical Opening Price
- New best bid that is greater than the previous M0 Last Price
- New best offers that is less than the previous M0 Last Price
- Trade

CBOE*direct* does not provide information for attributes for some of these conditions as outlined below.

8.7.1.2 M0 – Last (Settlement Price)

Attribute Name	Change For Security Futures
Last Price Type Flag	Set to "S"
Highest Price	Set to "9's"
Highest Price Type Flag	Set to "blanks"
Lowest Price	Set to "9's"
Lowest Price Type Flag	Set to "blanks"
Last Traded Quantity	Set to 0
Trading Mode	Set to 0
Side Variation	Set to "blanks"

8.7.1.3 M0 – Last (Theoretical Opening Price)

Attribute Name	Change For Security Futures
Last Price Type Flag	Set to "1" (Theoretical Opening Price)

8.7.1.4 M0 – Last (Best Bid/Offer)

No attribute changes

8.7.1.5 M0 – Last (Trade)

No attribute changes

For the M0 Highest Price attribute, this attribute will be set to all "9's" before the open.

After the open, this attribute will contain the value of the trade price or the Best bid. For the M0 Lowest Price attribute, this attribute will be set to all "9's" before the open. After the open, this attribute will contain the value of the trade price or the best offer.

8.7.2 M5 – Opening Trade

CBOE does not provide information for the Buying and Selling Subscriber and Trade ID fields.

Attribute Name	Change For Security Futures
Buy Subscriber ID	Set to "blanks"
Sell Subscriber ID	Set to "blanks"
Buy Trader ID	Set to "blanks"
Sell Trader ID	Set to "blanks"

8.7.3 M6 – Trade

CBOE does not provide information for the Buying and Selling Subscriber and Trade ID fields.

Attribute Name	Change For Security Futures
Buy Subscriber ID	Set to "blanks"
Sell Subscriber ID	Set to "blanks"
Buy Trader ID	Set to "blanks"
Sell Trader ID	Set to "blanks"

8.7.4 M7 – Price

No attribute changes

8.7.5 M8 – Theoretical Opening

CBOE does not provide information for Simulated Buy/Sell Quantities and Simulated Total Trade Quantity attributes.

Attribute Name	Change For Security Futures
Total Traded Quantity At Open	Set to 0
Total Simulated Buy Quantity	Set to 0
Simulated Buy Limit	Set to 0
Simulated Sell Limit	Set to 0
Total Simulated Sell Quantity	Set to 0

8.7.6 M9 – Opening Summary

No attribute changes

8.7.7 MA – Limits (Book Depth)

CBOE does not provide the count of Buy/Sell Number Of Limit Order attributes

Attribute Name	Change For Security Futures
Buy Limit Number Of Orders	Set to 0
Sell Limit Number Of Orders	Set to 0

8.7.8 MG – Instrument Status

No attribute changes

8.7.9 MI - Intermediate Thresholds

No attribute changes

8.7.10 MJ – Group State Marker Change

No attribute changes

8.7.11 MO - Creation Of Instrument Characteristics

No attribute changes

8.8 MARKET DATA NOT PROVIDED FOR SECURITY FUTURES

Market data provided by the OneChicago match engine will have some characteristics that are not in keeping with what GLOBEX users have for non-security futures. The below outlines those differences.

8.8.1 Indicative Opening Price

The indicative opening price message (M8) is not sent during the pre-open. Provided that a crossed market exists and the LMM is quoting appropriately, the indicative opening price messages will be sent every three seconds between the times of 8:30:10 (Central Time) and the end of the opening rotation period time (8:30:35).

8.8.2 Market Depth Window Display

The GLOBEX Trader market depth window displays every individual order in the market in priority order. This display will never be completed for security futures instruments because the OneChicago match engine summarizes all orders by price.

8.8.3 Number of Trade Messages per Trade

One trade message (M5 and M6) will be sent per execution regardless of the number of counterparties on the trade. For example, a 20-lot sell order that is matched against 20 one-lot buy orders will be delivered as one trade message. The same trade for GLOBEX-only instrument would be sent as 20 separate trade messages with each having a one-lot size.

8.9 SCENARIOS WHICH DELAY A MARKET OPENING

There are specific scenarios during the Opening Rotation phase which will cause a security futures product to not transition to “Open”. These scenarios are detailed in the below table.

SCENARIOS WHICH DELAY A MARKET OPENING	DESCRIPTION	HOW MARKET OPENING DELAY GETS RECTIFIED
Market order imbalance	Occurs when there are more market buy (sell) orders than market sell (buy) orders. More limit orders to buy (sell) than to sell (buy) will not prevent an opening.	LMM or other market maker provides sufficient size for their respective quotes in order to absorb the market order quantity imbalance.
No market maker quotes	Occurs when the book is locked/crossed, but there is no valid market maker quote in the book. Security futures products are not allowed to open without a valid market maker quote in the book.	LMM or other market maker provides a valid bid-ask as prescribed by OneChicago rules.
Opening price not in quote range	Occurs when the book is locked/crossed, but the EOP is not within 75% of the lowest quote bid <OR> 125% of the highest quote offer.	LMM or other market maker provides a valid bid-ask as prescribed by OneChicago rules.