Cboe Futures Exchange Binary Order Entry Implementation Guide

Version 1.0.2

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Contents

1 Introduction

The CBOE Futures Exchange ("CFE") provides both FIX and binary order entry protocols. The Binary order entry protocol for CFE is based on the BOE protocol used for existing BATS BZX and EDGX Options Exchanges. **This document is provided to assist customers with migration of an existing Options Exchange BOE version 2.3.8 implemention for use with CFE BOE interface version 1.1.4.** As a result, this document provides a point-in-time guide to porting from an Options Exchange BOE implementation for use with CFE. Consult the revision history of future revisions as necessary as the protocol specifications evolve to accomondate new exchange features and functionality.

This document follows the same structure as the BOE Specification. In each section, the differences relevant to porting an existing Options Exchange BOE implementation are highlighted.

Note that the customer reference of "Member" throughout the Options specification has been updated to "TPH" throughout the CFE BOE specification as is a more applicable reference per the CFE rule book.

1.1 Overview

See the CFE BOE Specification for an overview of the CFE BOE specification.

1.2 Hours of Operation

Hours of operation are specific to the CFE Exchange. Trading hours on CFE are product specific and are updated as appropriate when new Futures contracts are listed. See the CFE BOE Specification for CFE hours of operation.

1.3 Data Types

Data types are the same between CFE and Options BOE implementations.

1.4 Optional Fields and Bit fields

The design of the BOE protocol with respect to message structure, mandatory message fields and optional fields and bitfields is the same between CFE and Options BOE implementations. Message structure and bitfield documentation is the same between Options Exchange and CFE BOE specifications.

1.5 Protocol Features

Customers implementing the CFE BOE protocol should read this section closely to undertand protocol features designed to accommodate CFE functionality.

1.5.1 Spread Instruments

CFE introduces Spread instrument trading. The following sections highlight protocol details related to Spread instrument trading.

1.5.1.1 Spread Symbology

When new Simple instruments are listed on CFE, all two-leg Sell-Buy Spread instruments, with the earliest expiring contract as the Sell leg, are created automatically by the system and made available for trading. Other two, three and four leg instruments supported on CFE can be created by contacting the CFE Trade Desk (See CFE BOE Specification). CFE does not support dynamic instrument creation via order entry protocols.

Spread instruments are assigned a Bats symbology ID the same as Simple instruments. Once a Bats symbology ID is assigned to an instrument (Simple or Spread) the ID will not change until the associated instrument expires. Bats symbology mappings are available via a symbol mapping file download as with Options exchanges. In addition, TOP and PITCH feeds contain Futures Instrument Definition (“FID”) messages that present symbol detail for all active symbols that repeat throughout the trading day on a one-minute cycle.

1.5.1.2 Spread Trading

Spread instrument orders are submitted using the same `New Order` BOE message that is used for Simple instruments. See ‘1.5.6 - CFE-Specific Optional Fields’ below for specific field differences between CFE and Options exchanges BOE protocols.

Spread instrument orders must use Bats symbology in the *Symbol* field of the `New Order` message whereas Simple instrument orders may alternatively place the associated Product name (e.g., “VX”) in the *Symbol* field and specify the expiration date of the target contract using *MaturityDate* field.

When a Spread instrument order is filled, customers receive multiple `Order Execution` messages that describe the Spread instrument execution and individual leg prints comprising the Spread execution. CFE does not guarantee that Spread instrument execution Execution Report messages and the associated leg print `Order Execution` messages are contiguous. The *SecondaryExecID* field is used to unambiguously associate leg print `Order Execution` messages to a Spread instrument execution. In addition, the *MultilegReportingType* field characterizes an `Order Execution` as a Spread execution or Simple instrument comprising a leg of a Spread execution.

1.5.2 Carried Order Restatements

CFE introduces Good ‘till Cancel (“GTC”) orders as well as multi-segment trading days. As a result, orders on the book may persist from session to session. Customers can opt for restatement messages to be sent when the trading system transitions from suspended to queuing at the beginning of a trading session using the Carried Order Restatements port attribute. See the corresponding section of the CFE BOE Specification for details on Carried Order Restatements.

Note that no notification is provided at the end of a trading session to indicate when GTC orders or Day orders on partial holiday sessions are persisted to carry over to the next trading sessions. Instead, Carried Order Restatements can be used by members to be notified of orders that have persisted from the previous session.

1.5.3 Post-Settlement Execution Restatements

CFE introduces products for which trades are not cleared at the time of execution. Instead, customers are notified with 'pending execution reports' at the time of execution. Information available only after daily settlement prices for an associated contract are required before the trade can be cleared. At this time, customers will receive an 'execution restatement' containing the trade attributes that are used in clearing post-settlement. The details of price, size and symbol transformation and associated messages are product specific and are explained in detail in this section of the CFE BOE Specification.

1.5.4 Spread Instruments and Signed Prices

CFE supports both Simple and Spread instrument trading. For each product, certain Spread instruments are automatically available for trading and others can be created via a request submitted to the CFE Trade Desk. To accommodate Spread trading, prices in CFE BOE are respresented using signed values This section in the CFE BOE Specification contains details related to Spread instrument trading and conventions used for signed prices.

1.5.5 Mass Cancel Specification

CFE introduces a new, more flexible and extensible method of specify mass cancel operations associated with `Cancel Order` and `Purge Orders` messages. The new method uses a new *MassCancelInst* (Mass Cancel Instruction) field that replaces the previously used *MassCancel* and *MassCancelLockout* fields.

Customers are encouraged to study the difference between the legacy *MassCancel* and *MassCancelLockout* based mass cancellation method in the Options BOE specification and the new *MassCancelInst* method in the CFE BOE Specification when porting an options exchange implementation of BOE for use with CFE. Details can be found in the documentation of the `Cancel Order` and `Purge Orders` messages as well as the *MassCancelInst* field documentation in the 'List of Optional Fields' section of the CFE BOE Specification.

Note that future versions of options exchange BOE specifications will migrate to the new *MassCancelInst* method of specifying mass cancel operations.

1.5.6 CFE-Specific Optional Fields

Fields that appear in the CFE BOE specification but are not contained in the Options BOE specification are presented in the following list. See the CFE BOE Specification List of Optional fields section for definition and function of each field.

- *CtiCode*
- *ManualOrderIndicator*
- *OEOID*
- *TradeDate*
- *ClearingPrice (previously named VariancePrice)*
- *ClearingSize (previously named VarianceSize*
- *ClearingSymbol (previously named OrigSymbolId)*
- *CumQty*
- *DayOrderQty*
- *DayCumQty*
- *AvgPx*
- *DayAvgPx*
- *PendingStatus*

2 Session

The Session functionality description is the same between CFE and Options Exchange BOE specifications including Message Headers, Login, Replay and Sequencing, Sequence Reset, Heartbeats and Logging Out.

3 Session Messages

The definition and documentation of Session Messages from the Member/TPH to the exchange (Login Request, Logout Request and Client Heartbeast) are unchanged between CFE and Options. Similarly, definition and documentation of Session Messages from the exchange to Members/TPHs (Logout, Server Heartbeat and Replay Complete) are unchanged between CFE and Options.

4 Application Messages

4.1 TPH to CFE

The following table summarizes the TPH-to-CFE Applicaton Messages that are present in both the CFE BOE specification and the Options BOE specification. Note the "V2" name appendage of the Options BOE specification message has been dropped in the associated CFE specification message (e.g., `New Order V2` in the Options BOE specification corresponds to the `New Order` message in the CFE BOE specification).

Message Name	Type
New Order	0x38
Cancel Order	0x39
Modify Order	0x3A
Purge Orders	0x47

The following table summarizes the TPH-to-CFE Application Messages that are present in the Options BOE specification but are **not** present in the CFE BOE implementation.

Message Name	Type
New Complex Order	0x4B
New Order Cross	0x41
Bulk Order V2	0x3B
New Complex Instrument	0x4C

The following sections present porting considerations for each TPH-to-CFE Application Message contained in both CFE and Options BOE specifications.

4.1.1 New Order

The required fields of the `New Order` message are the same between CFE and Options BOE implementations. The optional fields input fields for CFE and Options BOE `New Order` messages are different between CFE and Options exchanges. The differences are presented side-by-side in 'Section 5.1 - New Order'. Note that spread (complex) instruments in CFE are submitted using the standard `New Order` message.

4.1.2 Cancel Order

The required fields of the `Cancel Order` message are the same between CFE and Options BOE implementations. The optional fields input fields for CFE and Options BOE `Cancel Order` messages are presented side-by-side in 'Section 5.2 - Cancel Order'.

See 'Section 1.6.1 - Mass Cancel Specification' of this document for an explanation of mass cancel operation specification differences between CFE and Options BOE.

4.1.3 Modify Order

The required fields of the `Modify Order` message are the same between CFE and Options BOE implementations. The optional fields input fields for CFE and Options BOE `Modify Order` messages are presented side-by-side in ‘Section 5.3 - Modify Order’.

4.1.4 Purge Orders

The required fields of the `Purge Orders` message are the same between CFE and Options BOE implementations. The optional fields input fields for CFE and Options BOE `Purge Orders` messages are presented side-by-side in ‘Section 4.1.4 - Purge Orders’.

See ‘Section 1.6.1 - Mass Cancel Specification’ of this document for an explanation of mass cancel operation specification differences between CFE and Options exchange BOE.

4.2 CFE to TPH

The following table summarizes the CFE-to-TPH Application Messages that are present in both the CFE BOE specification and the Options BOE specification. Note the “V2” name appendage of the Option BOE specification message has been dropped in the associated CFE BOE specification message (e.g., `Order Acknowledgment V2` in the Options BOE specification corresponds to the `Order Acknowledgment` message in the CFE BOE specification).

Message Name	Type
Order Acknowledgment	0x25
Order Rejected	0x26
Order Modified	0x27
User Modify Rejected	0x29
Order Cancelled	0x2A
Cancel Rejected	0x2B
Order Execution	0x2C
Trade Cancel or Correct	0x2D
Purge Rejected	0x48
Mass Cancel Acknowledgment	0x36

The following table summarizes the CFE-to-TPH Application Messages that are present in the Options BOE specification but are **not** present in the CFE BOE specification.

Message Name	Type
Cross Order Acknowledgement V2	0x43
Cross Order Rejected	0x44
Order Restated V2	0x28
Cross Order Cancelled	0x46
Complex Instrument Accepted	0x4D
Complex Instrument Rejected	0x4D

The following table summarizes the CFE-to-TPH Application Messages that are unique to the CFE BOE specification and are **not** present in the Options BOE specification.

Message Name	Type
TAS Restatement	0x49
Variance Restatement	0x4A

Section 6 of this document presents a side-by-side comparison of the permissible return optional fields for each CFE-to-TPH Application Message common to both CFE and Option BOE Specifications.

5 Input Bitfields Per Message

Legend:

R	Indicates that the field must be specified (Required) for a message.
●	Indicates that the field can be specified for a message.
(Blank)	Indicates that the field cannot be specified for a message.

Blank cells in the "CFE" column represent fields that are not used by the associated CFE message. Input messages submitted to CFE that contain a field not used by the associated CFE message and will result in a reject if selected. The "Opt" column indicates permissible fields for the Options BOE implementation. Grayed fields are fields that are not used by CFE in any message but may be used by other exchanges that employ BOE, including Options exchanges.

5.1 New Order

Byte	Bit	Field	CFE	Opt
1	1	*ClearingFirm*	●	●
	2	*ClearingAccount*	●	●
	4	*Price*	●	●
	8	*ExecInst*		●
	16	*OrdType*	●	●
	32	*TimeInForce*	**R**	●
	64	*MinQty*	●	●
	128	*MaxFloor*		●
2	1	*Symbol*	**R**	●
	2	*SymbolSfx*		
	4	*Currency*		
	8	*IdSource*		
	16	*SecurityId*		
	32	*SecurityExchange*		
	64	*Capacity*	**R**	●
	128	*RoutingInst*		●
3	1	*Account*	**R**	●
	2	*DisplayIndicator*		●
	4	*MaxRemovePct*		●
	8	*DiscretionAmount*		
	16	*PegDifference*		
	32	*PreventMatch*	●	●
	64	*LocateRequired*		
	128	*ExpireTime*		●
4	1	*MaturityDate*	●	●
	2	*StrikePrice*		●
	4	*PutOrCall*		●
	8	*RiskReset*	●	●
	16	*OpenClose*	●	●
	32	*CMTANumber*	●	●
	64	*TargetPartyID*		●
	128	*(Reserved)*		

Byte	Bit	Field	CFE	Opt
5	1	*(Reserved)*		
	2	*AttributedQuote*		●
	4	*BookingType*		
	8	*ExtExecInst*		
	16	*ClientID*		
	32	*InvestorID*		
	64	*ExecutorID*		
	128	*OrderOrigination*		
6	1	*DisplayRange*		●
	2	*StopPx*	●	●
	4	*RoutStrategy*		●
	8	*RouteDeliveryMethod*		●
	16	*ExDestination*		●
	32	*EchoText*	●	●
	64	*AuctionId*		●
	128	*RoutingFirmID*		●
7	1	*AlgorithmicIndicator*		
	2	*CustomGroupId*	●	●
	4	*ClientQualifiedRole*		
	8	*InvestorQualifiedRole*		
	16	*ExecutorQualifiedRole*		
	32	*CtiCode*	**R**	
	64	*ManualOrderIndicator*	**R**	
	128	*OEOID*	**R**	

5.2 Cancel Order

Byte	Bit	Field	CFE	Opt
1	1	*ClearingFirm*	●	●
	2	*MassCancelLockout*		●
	4	*MassCancel*		●
	8	*ProductName*	●	●
	16	*MassCancelID*	●	●
	32	*RoutingFirmID*		●
	64	*ManualOrderIndicator*	**R**	
	128	*OEOID*	**R**	
2	1	*MassCancelInst*	●	●
	2	*(Reserved)*		
	4	*(Reserved)*		
	8	*(Reserved)*		
	16	*(Reserved)*		
	32	*(Reserved)*		
	64	*(Reserved)*		
	128	*(Reserved)*		

5.3 Modify Order

Byte	Bit	Field	CFE	Opt
1	1	*ClearingFirm*	●	●
	2	*(Reserved)*		
	4	*OrderQty*	**R**	**R**
	8	*Price*	**R**	**R**
	16	*OrdType*	●	●
	32	*CancelOrigOnReject*	●	●
	64	*ExecInst*		●
	128	*Side*		
2	1	*MaxFloor*		●
	2	*StopPx*	●	●
	4	*RoutingFirmID*		●
	8	*ManualOrderIndicator*	**R**	
	16	*OEOID*	**R**	
	32	*(Reserved)*		
	64	*(Reserved)*		
	128	*(Reserved)*		

5.4 Purge Orders

Byte	Bit	Field	CFE	Opt
1	1	*ClearingFirm*	●	●
	2	*MassCancelLockout*		
	4	*MassCancelInst*	**R**	**R**
	8	*ProductName*	●	●
	16	*MassCancelID*	●	●
	32	*RoutingFirmID*		
	64	*ManualOrderIndicator*	**R**	**R**
	128	*OEOID*	**R**	**R**

6 Return Bitfields Per Message

Legend:

●	Indicates that the field can be requested for a message.
—	Indicates that the field cannot be requested for a message.
(Blank)	Indicates that the field is not used by CFE and cannot be requested for a message.

Blank cells in the "CFE" column represent fields that are not available to be returned in associated CFE-to-TPH message. Attempts to register to receive an unused field in the Login Request message will result in a rejected login. The "Opt" column indicates available fields in the associated CFE-to-TPH message as implemented in the Options BOE specification.

6.1 Order Acknowledgment

Byte	Bit	Field	CFE	Opt
1	1	*Side*	●	●
	2	*PegDifference*		
	4	*Price*	●	●
	8	*ExecInst*		●
	16	*OrderType*	●	●
	32	*TimeInForce*	●	●
	64	*MinQty*	●	●
	128	*MaxRemovePct*		●
2	1	*Symbol*	●	●
	2	*SymbolSfx*		
	4	*Currency*		
	8	*IdSource*		
	16	*SecurityId*		
	32	*SecurityExchange*		
	64	*Capacity*	●	●
	128	*(Reserved)*		
3	1	*Account*	●	●
	2	*ClearingFirm*	●	●
	4	*ClearingAccount*	●	●
	8	*DisplayIndicator*		●
	16	*MaxFloor*		●
	32	*DiscretionAmount*		
	64	*OrderQty*	●	●
	128	*PreventMatch*	●	●
4	1	*MaturityDate*	●	●
	2	*StrikePrice*		●
	4	*PutOrCall*		●
	8	*OpenClose*	●	●
	16	*ClOrdIdBatch*		●
	32	*CorrectedSize*	–	●
	64	*PartyID*		
	128	*AccessFee*		
5	1	*OrigClOrdId*	–	●
	2	*LeavesQty*	–	●
	4	*LastShares*	–	●
	8	*LastPx*	–	●
	16	*DisplayPrice*		●
	32	*WorkingPrice*		●
	64	*BaseLiquidityIndicator*	●	●
	128	*ExpireTime*		●

Byte	Bit	Field	CFE	Opt
6	1	*SecondaryOrderId*	–	●
	2	*CCP*		
	4	*ContraCapacity*		●
	8	*AttributedOrder*		●
	16	*ExtExecInst*		
	32	*BulkOrderIds*		
	64	*BulkRejectReasons*		
	128	*PartyRole*		
7	1	*SubLiquidityIndicator*	●	●
	2	*TradeReportTypeReturn*		
	4	*TradePublishIndReturn*		
	8	*Text*		
	16	*Bid*		
	32	*Offer*		
	64	*LargeSize*		
	128	*LastMkt*		
8	1	*FeeCode*	–	
	2	*EchoText*	●	●
	4	*StopPx*	●	●
	8	*RoutingInst*		●
	16	*RoutStrategy*		●
	32	*RouteDeliveryMethod*		●
	64	*ExDestination*		●
	128	*TradeReportRefID*		
9	1	*MarketingFeeCode*		●
	2	*TargetPartyID*		●
	4	*AuctionId*		●
	8	*OrderCategory*		
	16	*LiquidityProvision*		
	32	*CmtaNumber*	●	●
	64	*CrossType*		
	128	*CrossPrioritization*		
10	1	*CrossId*		●
	2	*AllocQty*		●
	4	*GiveUpFirmID*		●
	8	*RoutingFirmID*		●
	16	*WaiverType*		
	32	*CrossExclusionIndicator*		●
	64	*PriceFormation*		
	128	*ClientQualifiedRole*		

Byte	Bit	Field	CFE	Opt
11	1	*ClientID*		
	2	*InvestorID*		
	4	*ExecutorID*		
	8	*OrderOrigination*		
	16	*Algo*		
	32	*DeferralReason*		
	64	*InvestorQualifiedRole*		
	128	*ExecutorQualifiedRole*		
12	1	*CtiCode*	●	
	2	*ManualOrderIndicator*	●	
	4	*OEOID*	●	
	8	*TradeDate*	–	
	16	*ClearingPrice*	–	
	32	*ClearingSize*	–	
	64	*ClearingSymbol*	–	
	128	*(Reserved)*	–	
13	1	*CumQty*	–	
	2	*DayOrderQty*	–	
	4	*DayCumQty*	–	
	8	*AvgPx*	–	
	16	*DayAvgPx*	–	
	32	*PendingStatus*	–	
	64	*DrillThruProtection*		●
	128	*MultilegReportingType*	–	
14	1	*LegCFICode*		
	2	*LegMaturityDate*		
	4	*LegStrikePrice*		
	8	*RoomId*		
	16	*SecondaryExecId*	–	
	32	*(Reserved)*		
	64	*(Reserved)*		
	128	*(Reserved)*		

6.2 Order Rejected

Byte	Bit	Field	CFE	Opt
1	1	*Side*	●	●
	2	*PegDifference*		
	4	*Price*	●	●
	8	*ExecInst*		●
	16	*OrderType*	●	●
	32	*TimeInForce*	●	●
	64	*MinQty*	●	●
	128	*MaxRemovePct*		●
2	1	*Symbol*	●	●
	2	*SymbolSfx*		
	4	*Currency*		
	8	*IdSource*		
	16	*SecurityId*		
	32	*SecurityExchange*		
	64	*Capacity*	●	●
	128	*(Reserved)*		
3	1	*Account*	●	●
	2	*ClearingFirm*	●	●
	4	*ClearingAccount*	●	●
	8	*DisplayIndicator*		●
	16	*MaxFloor*		●
	32	*DiscretionAmount*		
	64	*OrderQty*	●	●
	128	*PreventMatch*	●	●
4	1	*MaturityDate*	●	●
	2	*StrikePrice*		●
	4	*PutOrCall*		●
	8	*OpenClose*	●	●
	16	*ClOrdIdBatch*		●
	32	*CorrectedSize*	–	●
	64	*PartyID*		
	128	*AccessFee*		
5	1	*OrigClOrdId*	–	
	2	*LeavesQty*	–	
	4	*LastShares*	–	
	8	*LastPx*	–	
	16	*DisplayPrice*		
	32	*WorkingPrice*		
	64	*BaseLiquidityIndicator*	–	
	128	*ExpireTime*		
6	1	*SecondaryOrderId*	–	●
	2	*CCP*		
	4	*ContraCapacity*		●
	8	*AttributedOrder*		●
	16	*ExtExecInst*		
	32	*BulkOrderIds*		
	64	*BulkRejectReasons*		
	128	*PartyRole*		

Byte	Bit	Field	CFE	Opt
7	1	*SubLiquidityIndicator*	–	
	2	*TradeReportTypeReturn*		
	4	*TradePublishIndReturn*		
	8	*Text*		
	16	*Bid*		
	32	*Offer*		
	64	*LargeSize*		
	128	*LastMkt*		
8	1	*FeeCode*	–	
	2	*EchoText*	●	●
	4	*StopPx*	●	●
	8	*RoutingInst*		●
	16	*RoutStrategy*		●
	32	*RouteDeliveryMethod*		●
	64	*ExDestination*		●
	128	*TradeReportRefID*		
9	1	*MarketingFeeCode*		●
	2	*TargetPartyID*		●
	4	*AuctionId*		●
	8	*OrderCategory*		
	16	*LiquidityProvision*		
	32	*CmtaNumber*	●	●
	64	*CrossType*		
	128	*CrossPrioritization*		
10	1	*CrossId*		●
	2	*AllocQty*		●
	4	*GiveUpFirmID*		●
	8	*RoutingFIrmID*		●
	16	*WaiverType*		
	32	*CrossExclusionIndicator*		●
	64	*PriceFormation*		
	128	*ClientQualifiedRole*		
11	1	*ClientID*		
	2	*InvestorID*		
	4	*ExecutorID*		
	8	*OrderOrigination*		
	16	*Algo*		
	32	*DeferralReason*		
	64	*InvestorQualifiedRole*		
	128	*ExecutorQualifiedRole*		
12	1	*CtiCode*	●	
	2	*ManualOrderIndicator*	●	
	4	*OEOID*	●	
	8	*TradeDate*	–	
	16	*ClearingPrice*	–	
	32	*ClearingSize*	–	
	64	*ClearingSymbol*	–	
	128	*(Reserved)*	–	

Byte	Bit	Field	CFE	Opt
13	1	*CumQty*	–	
	2	*DayOrderQty*	–	
	4	*DayCumQty*	–	
	8	*AvgPx*	–	
	16	*DayAvgPx*	–	
	32	*PendingStatus*	–	
	64	*DrillThruProtection*		
	128	*MultilegReportingType*	–	
14	1	*LegCFICode*		
	2	*LegMaturityDate*		
	4	*LegStrikePrice*		
	8	*RoomId*		
	16	*SecondaryExecId*	–	
	32	*(Reserved)*		
	64	*(Reserved)*		
	128	*(Reserved)*		

6.3 Order Modified

Byte	Bit	Field	CFE	Opt
1	1	*Side*	●	●
	2	*PegDifference*		
	4	*Price*	●	●
	8	*ExecInst*		●
	16	*OrderType*	●	●
	32	*TimeInForce*	●	●
	64	*MinQty*	●	●
	128	*MaxRemovePct*		●
2	1	*Symbol*	●	
	2	*SymbolSfx*		
	4	*Currency*		
	8	*IdSource*		
	16	*SecurityId*		
	32	*SecurityExchange*		
	64	*Capacity*	●	
	128	*(Reserved)*		
3	1	*Account*	●	●
	2	*ClearingFirm*	●	●
	4	*ClearingAccount*	●	●
	8	*DisplayIndicator*		●
	16	*MaxFloor*		●
	32	*DiscretionAmount*		
	64	*OrderQty*	●	●
	128	*PreventMatch*	●	●
4	1	*MaturityDate*	●	
	2	*StrikePrice*		
	4	*PutOrCall*		
	8	*OpenClose*	●	
	16	*ClOrdIdBatch*		
	32	*CorrectedSize*	–	
	64	*PartyID*		
	128	*AccessFee*		
5	1	*OrigClOrdId*	–	●
	2	*LeavesQty*	–	●
	4	*LastShares*	–	●
	8	*LastPx*	–	●
	16	*DisplayPrice*		●
	32	*WorkingPrice*		●
	64	*BaseLiquidityIndicator*	–	●
	128	*ExpireTime*		●
6	1	*SecondaryOrderId*	–	●
	2	*CCP*		
	4	*ContraCapacity*		●
	8	*AttributedOrder*		●
	16	*ExtExecInst*		
	32	*BulkOrderIds*		
	64	*BulkRejectReasons*		
	128	*PartyRole*		

Byte	Bit	Field	CFE	Opt
7	1	*SubLiquidityIndicator*	–	
	2	*TradeReportTypeReturn*		
	4	*TradePublishIndReturn*		
	8	*Text*		
	16	*Bid*		
	32	*Offer*		
	64	*LargeSize*		
	128	*LastMkt*		
8	1	*FeeCode*	–	
	2	*EchoText*	●	●
	4	*StopPx*	●	●
	8	*RoutingInst*		●
	16	*RoutStrategy*		●
	32	*RouteDeliveryMethod*		●
	64	*ExDestination*		●
	128	*TradeReportRefID*		
9	1	*MarketingFeeCode*		●
	2	*TargetPartyID*		●
	4	*AuctionId*		●
	8	*OrderCategory*		
	16	*LiquidityProvision*		
	32	*CmtaNumber*	●	●
	64	*CrossType*		
	128	*CrossPrioritization*		
10	1	*CrossId*		●
	2	*AllocQty*		●
	4	*GiveUpFirmID*		●
	8	*RoutingFirmID*		●
	16	*WaiverType*		
	32	*CrossExclusionIndicator*		●
	64	*PriceFormation*		
	128	*ClientQualifiedRole*		
11	1	*ClientID*		
	2	*InvestorID*		
	4	*ExecutorID*		
	8	*OrderOrigination*		
	16	*Algo*		
	32	*DeferralReason*		
	64	*InvestorQualifiedRole*		
	128	*ExecutorQualifiedRole*		
12	1	*CtiCode*	●	
	2	*ManualOrderIndicator*	●	
	4	*OEOID*	●	
	8	*TradeDate*	–	
	16	*ClearingPrice*	–	
	32	*ClearingSize*	–	
	64	*ClearingSymbol*	–	
	128	*(Reserved)*	–	

Byte	Bit	Field	CFE	Opt
13	1	*CumQty*	–	
	2	*DayOrderQty*	–	
	4	*DayCumQty*	–	
	8	*AvgPx*	–	
	16	*DayAvgPx*	–	
	32	*PendingStatus*	–	
	64	*DrillThruProtection*		
	128	*MultilegReportingType*	–	
14	1	*LegCFICode*		
	2	*LegMaturityDate*		
	4	*LegStrikePrice*		
	8	*RoomId*		
	16	*SecondaryExecId*	–	
	32	*(Reserved)*		
	64	*(Reserved)*		
	128	*(Reserved)*		

6.4 User Modify Rejected

Byte	Bit	Field	CFE	Opt
1	1	*Side*	–	
	2	*PegDifference*		
	4	*Price*	–	
	8	*ExecInst*		
	16	*OrderType*	–	
	32	*TimeInForce*	–	
	64	*MinQty*	–	
	128	*MaxRemovePct*		
2	1	*Symbol*	–	
	2	*SymbolSfx*		
	4	*Currency*		
	8	*IdSource*		
	16	*SecurityId*		
	32	*SecurityExchange*		
	64	*Capacity*	–	
	128	*(Reserved)*		
3	1	*Account*	–	
	2	*ClearingFirm*	–	
	4	*ClearingAccount*	–	
	8	*DisplayIndicator*		
	16	*MaxFloor*		
	32	*DiscretionAmount*		
	64	*OrderQty*	–	
	128	*PreventMatch*	–	
4	1	*MaturityDate*	–	
	2	*StrikePrice*		
	4	*PutOrCall*		
	8	*OpenClose*	–	
	16	*ClOrdIdBatch*		
	32	*CorrectedSize*	–	
	64	*PartyID*		
	128	*AccessFee*		
5	1	*OrigClOrdId*	–	
	2	*LeavesQty*	–	
	4	*LastShares*	–	
	8	*LastPx*	–	
	16	*DisplayPrice*		
	32	*WorkingPrice*		
	64	*BaseLiquidityIndicator*	–	
	128	*ExpireTime*		
6	1	*SecondaryOrderId*	–	
	2	*CCP*		
	4	*ContraCapacity*		
	8	*AttributedOrder*		
	16	*ExtExecInst*		
	32	*BulkOrderIds*		
	64	*BulkRejectReasons*		
	128	*PartyRole*		

Byte	Bit	Field	CFE	Opt
7	1	*SubLiquidityIndicator*	–	
	2	*TradeReportTypeReturn*		
	4	*TradePublishIndReturn*		
	8	*Text*		
	16	*Bid*		
	32	*Offer*		
	64	*LargeSize*		
	128	*LastMkt*		
8	1	*FeeCode*	–	
	2	*EchoText*	–	
	4	*StopPx*	–	
	8	*RoutingInst*		
	16	*RoutStrategy*		
	32	*RouteDeliveryMethod*		
	64	*ExDestination*		
	128	*TradeReportRefID*		
9	1	*MarketingFeeCode*		
	2	*TargetPartyID*		
	4	*AuctionId*		
	8	*OrderCategory*		
	16	*LiquidityProvision*		
	32	*CmtaNumber*	–	
	64	*CrossType*		
	128	*CrossPrioritization*		
10	1	*CrossId*		●
	2	*AllocQty*		●
	4	*GiveUpFirmID*		●
	8	*RoutingFirmID*		●
	16	*WaiverType*		
	32	*CrossExclusionIndicator*		●
	64	*PriceFormation*		
	128	*ClientQualifiedRole*		
11	1	*ClientID*		
	2	*InvestorID*		
	4	*ExecutorID*		
	8	*OrderOrigination*		
	16	*Algo*		
	32	*DeferralReason*		
	64	*InvestorQualifiedRole*		
	128	*ExecutorQualifiedRole*		
12	1	*CtiCode*	–	
	2	*ManualOrderIndicator*	–	
	4	*OEOID*	–	
	8	*TradeDate*	–	
	16	*ClearingPrice*	–	
	32	*ClearingSize*	–	
	64	*ClearingSymbol*	–	
	128	*(Reserved)*	–	

Byte	Bit	Field	CFE	Opt
13	1	*CumQty*	–	
	2	*DayOrderQty*	–	
	4	*DayCumQty*	–	
	8	*AvgPx*	–	
	16	*DayAvgPx*	–	
	32	*PendingStatus*	–	
	64	*DrillThruProtection*		
	128	*MultilegReportingType*	–	
14	1	*LegCFICode*		
	2	*LegMaturityDate*		
	4	*LegStrikePrice*		
	8	*RoomId*		
	16	*SecondaryExecId*	–	
	32	*(Reserved)*		
	64	*(Reserved)*		
	128	*(Reserved)*		

6.5 Order Cancelled

Byte	Bit	Field	CFE	Opt
1	1	Side	●	●
	2	PegDifference		
	4	Price	●	●
	8	ExecInst		●
	16	OrderType	●	●
	32	TimeInForce	●	●
	64	MinQty	●	●
	128	MaxRemovePct		●
2	1	Symbol	●	●
	2	SymbolSfx		
	4	Currency		
	8	IdSource		
	16	SecurityId		
	32	SecurityExchange		
	64	Capacity	●	●
	128	(Reserved)		
3	1	Account	●	●
	2	ClearingFirm	●	●
	4	ClearingAccount	●	●
	8	DisplayIndicator		●
	16	MaxFloor		●
	32	DiscretionAmount		
	64	OrderQty	●	●
	128	PreventMatch	●	●
4	1	MaturityDate	●	●
	2	StrikePrice		●
	4	PutOrCall		●
	8	OpenClose	●	●
	16	ClOrdIdBatch		●
	32	CorrectedSize	–	●
	64	PartyID		
	128	AccessFee		
5	1	OrigClOrdId	●	●
	2	LeavesQty	●	●
	4	LastShares	●	●
	8	LastPx	●	●
	16	DisplayPrice		●
	32	WorkingPrice		●
	64	BaseLiquidityIndicator	●	●
	128	ExpireTime		●
6	1	SecondaryOrderId	●	●
	2	CCP		
	4	ContraCapacity		●
	8	AttributedOrder		●
	16	ExtExecInst		
	32	BulkOrderIds		
	64	BulkRejectReasons		
	128	PartyRole		

Byte	Bit	Field	CFE	Opt
7	1	SubLiquidityIndicator	–	
	2	TradeReportTypeReturn		
	4	TradePublishIndReturn		
	8	Text		
	16	Bid		
	32	Offer		
	64	LargeSize		
	128	LastMkt		
8	1	FeeCode	–	
	2	EchoText	●	●
	4	StopPx	●	●
	8	RoutingInst		●
	16	RoutStrategy		●
	32	RouteDeliveryMethod		●
	64	ExDestination		●
	128	TradeReportRefID		
9	1	MarketingFeeCode		●
	2	TargetPartyID		●
	4	AuctionId		●
	8	OrderCategory		
	16	LiquidityProvision		
	32	CmtaNumber	●	●
	64	CrossType		
	128	CrossPrioritization		
10	1	CrossId		●
	2	AllocQty		●
	4	GiveUpFirmID		●
	8	RoutingFIrmID		●
	16	WaiverType		
	32	CrossExclusionIndicator		●
	64	PriceFormation		
	128	ClientQualifiedRole		
11	1	ClientID		
	2	InvestorID		
	4	ExecutorID		
	8	OrderOrigination		
	16	Algo		
	32	DeferralReason		
	64	InvestorQualifiedRole		
	128	ExecutorQualifiedRole		
12	1	CtiCode	●	
	2	ManualOrderIndicator	●	
	4	OEOID	●	
	8	TradeDate	–	
	16	ClearingPrice	–	
	32	ClearingSize	–	
	64	ClearingSymbol	–	
	128	(Reserved)	–	

Byte	Bit	Field	CFE	Opt
13	1	CumQty	–	
	2	DayOrderQty	–	
	4	DayCumQty	–	
	8	AvgPx	–	
	16	DayAvgPx	–	
	32	PendingStatus	–	
	64	DrillThruProtection		
	128	MultilegReportingType	–	
14	1	LegCFICode		
	2	LegMaturityDate		
	4	LegStrikePrice		
	8	RoomId		
	16	SecondaryExecId	–	
	32	(Reserved)		
	64	(Reserved)		
	128	(Reserved)		

6.6 Cancel Rejected

Byte	Bit	Field	CFE	Opt
1	1	Side	●	●
	2	PegDifference		
	4	Price	●	●
	8	ExecInst		●
	16	OrderType	●	●
	32	TimeInForce	●	●
	64	MinQty	●	●
	128	MaxRemovePct		●
2	1	Symbol	●	●
	2	SymbolSfx		
	4	Currency		
	8	IdSource		
	16	SecurityId		
	32	SecurityExchange		
	64	Capacity	●	●
	128	(Reserved)		
3	1	Account	–	
	2	ClearingFirm	–	
	4	ClearingAccount	–	
	8	DisplayIndicator		
	16	MaxFloor		
	32	DiscretionAmount		
	64	OrderQty	–	
	128	PreventMatch	–	
4	1	MaturityDate	●	●
	2	StrikePrice		●
	4	PutOrCall		●
	8	OpenClose	●	●
	16	ClOrdIdBatch		●
	32	CorrectedSize	–	●
	64	PartyID		
	128	AccessFee		
5	1	OrigClOrdId	–	
	2	LeavesQty	–	
	4	LastShares	–	
	8	LastPx	–	
	16	DisplayPrice		
	32	WorkingPrice		
	64	BaseLiquidityIndicator	–	
	128	ExpireTime		
6	1	SecondaryOrderId	–	
	2	CCP		
	4	ContraCapacity		
	8	AttributedOrder		
	16	ExtExecInst		
	32	BulkOrderIds		
	64	BulkRejectReasons		
	128	PartyRole		

Byte	Bit	Field	CFE	Opt
7	1	SubLiquidityIndicator	–	
	2	TradeReportTypeReturn		
	4	TradePublishIndReturn		
	8	Text		
	16	Bid		
	32	Offer		
	64	LargeSize		
	128	LastMkt		
8	1	FeeCode	–	
	2	EchoText	●	●
	4	StopPx	●	●
	8	RoutingInst		
	16	RoutStrategy		
	32	RouteDeliveryMethod		
	64	ExDestination		
	128	TradeReportRefID		
9	1	MarketingFeeCode		●
	2	TargetPartyID		●
	4	AuctionId		●
	8	OrderCategory		
	16	LiquidityProvision		
	32	CmtaNumber	●	●
	64	CrossType		
	128	CrossPrioritization		
10	1	CrossId		●
	2	AllocQty		●
	4	GiveUpFirmID		●
	8	RoutingFIrmID		●
	16	WaiverType		
	32	CrossExclusionIndicator		●
	64	PriceFormation		
	128	ClientQualifiedRole		
11	1	ClientID		
	2	InvestorID		
	4	ExecutorID		
	8	OrderOrigination		
	16	Algo		
	32	DeferralReason		
	64	InvestorQualifiedRole		
	128	ExecutorQualifiedRole		
12	1	CtiCode	●	
	2	ManualOrderIndicator	●	
	4	OEOID	●	
	8	TradeDate	–	
	16	ClearingPrice	–	
	32	ClearingSize	–	
	64	ClearingSymbol	–	
	128	(Reserved)	–	

Byte	Bit	Field	CFE	Opt
13	1	CumQty	–	
	2	DayOrderQty	–	
	4	DayCumQty	–	
	8	AvgPx	–	
	16	DayAvgPx	–	
	32	PendingStatus	–	
	64	DrillThruProtection		
	128	MultilegReportingType	–	
14	1	LegCFICode		
	2	LegMaturityDate		
	4	LegStrikePrice		
	8	RoomId		
	16	SecondaryExecId	–	
	32	(Reserved)		
	64	(Reserved)		
	128	(Reserved)		

6.7 Order Execution

Byte	Bit	Field	CFE	Opt
1	1	Side	●	●
	2	PegDifference		
	4	Price	●	●
	8	ExecInst		●
	16	OrderType	●	●
	32	TimeInForce	●	●
	64	MinQty	●	●
	128	MaxRemovePct		●
2	1	Symbol	●	●
	2	SymbolSfx		
	4	Currency		
	8	IdSource		
	16	SecurityId		
	32	SecurityExchange		
	64	Capacity	●	●
	128	(Reserved)		
3	1	Account	●	●
	2	ClearingFirm	●	●
	4	ClearingAccount	●	●
	8	DisplayIndicator		●
	16	MaxFloor		●
	32	DiscretionAmount		
	64	OrderQty	●	●
	128	PreventMatch	●	●
4	1	MaturityDate	●	●
	2	StrikePrice		●
	4	PutOrCall		●
	8	OpenClose	●	●
	16	ClOrdIdBatch		●
	32	CorrectedSize	–	●
	64	PartyID		
	128	AccessFee		
5	1	OrigClOrdId	–	
	2	LeavesQty	–	
	4	LastShares	–	
	8	LastPx	–	
	16	DisplayPrice		
	32	WorkingPrice		
	64	BaseLiquidityIndicator	–	
	128	ExpireTime		
6	1	SecondaryOrderId	–	
	2	CCP		
	4	ContraCapacity		●
	8	AttributedOrder		●
	16	ExtExecInst		
	32	BulkOrderIds		
	64	BulkRejectReasons		
	128	PartyRole		

Byte	Bit	Field	CFE	Opt
7	1	SubLiquidityIndicator	–	
	2	TradeReportTypeReturn		
	4	TradePublishIndReturn		
	8	Text		
	16	Bid		
	32	Offer		
	64	LargeSize		
	128	LastMkt		
8	1	FeeCode	●	●
	2	EchoText	●	●
	4	StopPx	●	●
	8	RoutingInst		●
	16	RoutStrategy		●
	32	RouteDeliveryMethod		●
	64	ExDestination		●
	128	TradeReportRefID		
9	1	MarketingFeeCode		●
	2	TargetPartyID		●
	4	AuctionId		●
	8	OrderCategory		
	16	LiquidityProvision		
	32	CmtaNumber	●	●
	64	CrossType		●
	128	CrossPrioritization		●
10	1	CrossId		●
	2	AllocQty		●
	4	GiveUpFirmID		●
	8	RoutingFIrmID		●
	16	WaiverType		
	32	CrossExclusionIndicator		●
	64	PriceFormation		
	128	ClientQualifiedRole		
11	1	ClientID		
	2	InvestorID		
	4	ExecutorID		
	8	OrderOrigination		
	16	Algo		
	32	DeferralReason		
	64	InvestorQualifiedRole		
	128	ExecutorQualifiedRole		
12	1	CtiCode	●	
	2	ManualOrderIndicator	●	
	4	OEOID	●	
	8	TradeDate	●	
	16	ClearingPrice	–	
	32	ClearingSize	–	
	64	ClearingSymbol	–	
	128	(Reserved)	–	

Byte	Bit	Field	CFE	Opt
13	1	CumQty	●	
	2	DayOrderQty	●	
	4	DayCumQty	●	
	8	AvgPx	●	
	16	DayAvgPx	●	
	32	PendingStatus	●	
	64	DrillThruPotection		●
	128	MultilegReportingType	●	●
14	1	LegCFICode		
	2	LegMaturityDate		
	4	LegStrikePrice		
	8	RoomId		
	16	SecondaryExecId	●	●
	32	(Reserved)		
	64	(Reserved)		
	128	(Reserved)		

6.8 Trade Cancel or Correct

Byte	Bit	Field	CFE	Opt
1	1	Side	–	
	2	PegDifference		
	4	Price	–	
	8	ExecInst		
	16	OrderType	–	
	32	TimeInForce	–	
	64	MinQty	–	
	128	MaxRemovePct		
2	1	Symbol	●	●
	2	SymbolSfx		
	4	Currency		
	8	IdSource		
	16	SecurityId		
	32	SecurityExchange		
	64	Capacity	●	●
	128	(Reserved)		
3	1	Account	–	
	2	ClearingFirm	–	
	4	ClearingAccount	–	
	8	DisplayIndicator		
	16	MaxFloor		
	32	DiscretionAmount		
	64	OrderQty	–	
	128	PreventMatch	–	
4	1	MaturityDate	●	●
	2	StrikePrice		
	4	PutOrCall		
	8	OpenClose	●	●
	16	ClOrdIdBatch		
	32	CorrectedSize	●	●
	64	PartyID		
	128	AccessFee		
5	1	OrigClOrdId	–	
	2	LeavesQty	–	
	4	LastShares	–	
	8	LastPx	–	
	16	DisplayPrice		
	32	WorkingPrice		
	64	BaseLiquidityIndicator	–	
	128	ExpireTime		
6	1	SecondaryOrderId	–	
	2	CCP		
	4	ContraCapacity		
	8	AttributedOrder		
	16	ExtExecInst		
	32	BulkOrderIds		
	64	BulkRejectReasons		
	128	PartyRole		
7	1	SubLiquidityIndicator	–	
	2	TradeReportTypeReturn		
	4	TradePublishIndReturn		
	8	Text		
	16	Bid		
	32	Offer		
	64	LargeSize		
	128	LastMkt		
8	1	FeeCode	–	
	2	EchoText	–	
	4	StopPx	–	
	8	RoutingInst		
	16	RoutStrategy		
	32	RouteDeliveryMethod		
	64	ExDestination		
	128	TradeReportRefID		
9	1	MarketingFeeCode		
	2	TargetPartyID		
	4	AuctionId		
	8	OrderCategory		
	16	LiquidityProvision		
	32	CmtaNumber	●	●
	64	CrossType		
	128	CrossPrioritization		
10	1	CrossId		
	2	AllocQty		
	4	GiveUpFirmID		
	8	RoutingFirmID		
	16	WaiverType		
	32	CrossExclusionIndicator		
	64	PriceFormation		
	128	ClientQualifiedRole		
11	1	ClientID		
	2	InvestorID		
	4	ExecutorID		
	8	OrderOrigination		
	16	Algo		
	32	DeferralReason		
	64	InvestorQualifiedRole		
	128	ExecutorQualifiedRole		
12	1	CtiCode	–	
	2	ManualOrderIndicator	–	
	4	OEOID	–	
	8	TradeDate	–	
	16	ClearingPrice	–	
	32	ClearingSize	–	
	64	ClearingSymbol	–	
	128	(Reserved)	–	
13	1	CumQty	–	
	2	DayOrderQty	–	
	4	DayCumQty	–	
	8	AvgPx	–	
	16	DayAvgPx	–	
	32	PendingStatus	–	
	64	DrillThruProtection		
	128	MultilegReportingType	–	
14	1	LegCFICode		
	2	LegMaturityDate		
	4	LegStrikePrice		
	8	RoomId		
	16	SecondaryExecId	–	
	32	(Reserved)		
	64	(Reserved)		
	128	(Reserved)		

Revision History

Version	Date	Description
1.0.0	08/30/17	Initial version.
1.0.1	10/17/17	Cboe branding/logo changes.
1.0.2	04/26/18	Updated field name of *OperatorID* to *OEOID*