



C2 Exchange Platform Change Matrix

Version 1.0.3

March 20, 2018

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The following are lists of key platform changes by categories of interest designed to provide Trading Permit Holders (“TPHs”) with an overview on what key platform specific features will be added, retained, modified or removed from C2 upon migration to the Bats technology platform. Please refer to the relevant specifications on the [C2 Integration Website](#) for more details.

Matrix Legend

E=Existing Feature Planned to Maintain As-Is

M=Modification to Existing Feature

A=Addition of New Feature

D=Deletion of Feature

Order Entry	
BOE	A
FIX	M
FIX DROP	M
Order by Order DROP	A
CMi 2 Order Entry	D
CMi 2 Quote Entry	D

CMi 2 is being replaced with Bats BOE (Binary Order Entry). In order to support certain C2 specific features, the current BOE protocol for options will be modified. The BOE implementation for C2 does not support entry of two-sided quotes. However, bulk order entry ports will be available for C2 customers to allow multiple orders to be sent in a single message. All orders sent through bulk ports will be post-only and if not marked as post-only will be rejected. These orders cannot be used to take resting interest, nor will they route to away exchanges if they lock or cross the NBBO. Bulk Order messages will require use of underlying product in the Symbol field rather than the OSI Root as is used on BZX Options and EDGX Options.

The existing Bats FIX and DROP protocols will replace C2’s current FIX and DROP and support for the Bats Order by Order DROP protocol will be added to C2.

Note that while FIX is an ASCII based protocol, BOE is binary based providing for efficiencies that can allow for reduced latency.

Notable differences in order entry functionality include (refer to the specifications for complete details):

- Client Order ID replaces Branch/Sequence number.
- Matched Trade Prevention instructions may be provided on an order-by-order basis.
- Complex order debit/credit pricing is changing. Please refer to the Complex Order Price fields (both short and long form) of the FIX and/or BOE specification for complete details.
- Fee codes provided on fill reports.
- Order mass cancel message (by underlying product).

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- Purge port to mass cancel groups of orders by underlying product for a firm, regardless of order entry port.
- Cancel-Replace/Order update handling will conform to standard FIX handling where an *OrderQty* delta is calculated and applied to *LeavesQty*. This leaves the user in total control of contract quantity exposure when the modification request overlaps partial fills for the order.
- Bandwidth restrictions (orders per second) will be substantially higher. There are no bandwidth restrictions on bulk ports.

Order Types and Handling	
Market/Limit Orders	E
DAY, GTC, IOC Time-in-Force	E
GTD Time-in-Force	A
FOK, OPG Orders	E
Complex Orders	M¹
Opening Process	M²
Stop/Stop Limit Orders	M³
Post Only Modifier	A
Price Adjust Modifier	A
Cancel Back Modifier	A
Order Format 2	D
All-or-None	D

¹Complex Orders that become marketable due to an incoming leg order will execute before booking of the leg order. Buy/Sell indicators will replace Defined and Opposite. Limit prices on orders will be positive if the complex order is priced as expected. See [Complex Book Process Specification](#) for details.

²The opening process will be modified. It is described further in the [Opening Process Specification](#).

³Stop and Stop Limit orders will be triggered by National bids, offers and trades, not just C2 markets and trades.

Port Attributes	
Cancel on Disconnect	M¹
Send Trade Breaks	A
Default MTP Value	A
Microsecond Time Stamp Granularity	A
Carried Order Restatements	M²

¹Cancel on Disconnect will allow the port owner to select Day, All or None.

²This functionality is similar to current C2 CMI2/FIX functionality that allows the user to query for open orders.

Upon migration, port owners will be permitted/required to set certain attributes at a port level. The full set of port attributes are described in the relevant BOE/FIX specs. The above table highlights attributes that are different from similar functionality currently available at C2.

Data Feeds	
CSM	D

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CSM Level 2	D
Multicast TOP	A
Multicast PITCH	A
Complex Multicast TOP	A
Complex Multicast PITCH	A
Complex Multicast Auction	A

C2's current data feeds – CSM and CSM Level 2 – will be replaced by the Bats Multicast TOP and PITCH feed protocols. The PITCH feed is an order-by-order feed, and it replaces CSM Level 2's aggregated depth feed. Market data from both PITCH and TOP will be segregated into underlying based channels for distribution. Market data generated from complex orders will be on separate TOP and PITCH feeds. Note that the trade reports in single legs generated from complex order trading will be available on the regular TOP and PITCH feeds. Other notable differences in data feeds include:

- The Multicast TOP feed will serve as a convenience feed as it will be derived from the PITCH feed. As a result, the PITCH feed will be inherently faster than the TOP feed. Auction messages will only be available through the Multicast Auction Feed. They will no longer be available through the CMI2 and FIX, as they are today.

Other	
Web Portal – TPH Firm Risk Controls	M¹
QRM	D¹
Web Portal – General	A²
CTMi	D
Clearing Editor	A³
Market Access Portal (MAP) – Permit Management	D⁴
Secure Web API	A

¹TPH Firm risk controls will be available through the Customer Web Portal. [See Risk spec for details](#). Note that risk settings can only be set through the Web Portal. TPHs will no longer be able to set QRM-style settings through a trading API. Underlying symbols will be used to manage risk rules.

²TPHs will have access to various functions and information through the Customer Web Portal, including: viewing real time latency; order lookup; open orders query; cancel orders; and setting Port Attributes; in addition to other functionality.

³Clearing Editor functionality is similar to CTMi. [Please see Clearing Editor spec for more details](#).

⁴Functionality similar to what is currently available in MAP will be available through the Customer Web Portal.

The Bats technology suite of Web Portal and Risk Management tools will be made available to C2 TPHs replacing existing mechanisms that control similar features on C2.

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Revision History

Document Version	Date	Description
1.0.0	09/01/17	Initial version.
1.0.1	10/17/17	Cboe branding/logo changes.
1.0.2	10/30/17	Bulk order entry ports may be used by any customer on C2, but will be restricted to Post-Only orders only.
1.0.3	03/20/18	Updated BOE Bulk, Mass Cancel, Purge, Risk, and Market Data references to highlight usage of underlying product based Symbology.