



## **CBOE Application Programming Interface**

**Version 9.0.2**

### **CBOE API Volume 7: CBOEdirect Certification and Testing Procedures**

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Outlines test and certification procedures for client applications using the CMi interface to access the CBOE Network.

***CBOE PROPRIETARY INFORMATION***

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15 July 2011

Document #[API-07]

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# Table of Contents

<b>DISCLAIMER .....</b>	<b>II</b>
<b>TABLE OF CONTENTS .....</b>	<b>3</b>
TABLE OF FIGURES .....	5
TABLE OF TABLES .....	5
<b>CHANGE NOTICES.....</b>	<b>6</b>
<b>ABOUT THIS DOCUMENT.....</b>	<b>8</b>
PURPOSE.....	8
INTENDED AUDIENCE .....	8
RELATED DOCUMENTS .....	8
SUPPORT AND QUESTIONS REGARDING THIS DOCUMENT.....	8
<b>INTRODUCTION.....</b>	<b>9</b>
<b>IMPLEMENTING AN APPLICATION USING THE CML.....</b>	<b>10</b>
DEVELOPMENT .....	10
TEST ENVIRONMENT.....	10
TESTING AND CERTIFICATION.....	10
<i>Phase 1. Stand Alone Testing using the CBOE Application Server Simulator .....</i>	<i>10</i>
<i>Phase 2. Connectivity Testing with CBOE.....</i>	<i>10</i>
<i>Phase 3. Application Test .....</i>	<i>11</i>
<i>Phase 4. Assurance Test .....</i>	<i>11</i>
<i>Phase 5. Production Test .....</i>	<i>12</i>
<b>CERTIFICATION PROCESS .....</b>	<b>13</b>
<b>CERTIFICATION TESTING PHASES .....</b>	<b>14</b>
PHASE 1 STAND-ALONE TESTING .....	14
<i>Entry Criteria.....</i>	<i>14</i>
<i>Inputs .....</i>	<i>14</i>
<i>Process.....</i>	<i>14</i>
<i>Outputs.....</i>	<i>14</i>
<i>Exit Criteria .....</i>	<i>14</i>
PHASE 2 CONNECTIVITY TEST .....	15
<i>Entry Criteria.....</i>	<i>15</i>
<i>Inputs .....</i>	<i>15</i>
<i>Process.....</i>	<i>15</i>
<i>Outputs.....</i>	<i>15</i>
<i>Exit Criteria .....</i>	<i>15</i>
PHASE 3 APPLICATION TEST .....	16
<i>Entry Criteria.....</i>	<i>16</i>
<i>Inputs .....</i>	<i>16</i>
<i>Process.....</i>	<i>16</i>
<i>Outputs.....</i>	<i>17</i>
<i>Exit Criteria .....</i>	<i>17</i>
PHASE 4 ASSURANCE TEST .....	18
<i>Entry Criteria.....</i>	<i>18</i>
<i>Inputs .....</i>	<i>18</i>
<i>Process.....</i>	<i>18</i>
<i>Outputs.....</i>	<i>18</i>
<i>Exit Criteria .....</i>	<i>18</i>
PHASE 5 PRODUCTION TEST .....	19
<i>Entry Criteria.....</i>	<i>19</i>

<i>Inputs</i> .....	19
<i>Process</i> .....	19
<i>Outputs</i> .....	20
<i>Exit Criteria</i> .....	20
<b>GLOSSARY</b> .....	<b>21</b>
<b>TEST PLANS / REQUIREMENTS OVERVIEW</b> .....	<b>22</b>
PHASE 1 CAS SIMULATOR REQUIREMENTS BY ROLE .....	22
PHASE 2 TEST PLANS .....	22
<i>Connectivity Test Plan</i> .....	22
<i>CAS User Session Test Plan</i> .....	22
APPLICATION TEST PLANS .....	22
3a, <i>Security Definition Test Plan</i> .....	22
3b, <i>Market Data Test Plan</i> .....	22
3c, <i>Quote Test Plan – Hybrid-ONE-CFE</i> .....	22
3d, <i>W_MAIN Order Test Plan</i> .....	22
3e, <i>W_MAIN-ONE-CFE Order Test Plan</i> .....	22
3f, <i>Clearing Firm, Duplicate Message Test Plan</i> .....	22
3g, <i>Strategy Quote Test Plan (ONE)</i> .....	23
3h, <i>W_MAIN Strategy Order Test Plan</i> .....	23
3i, <i>W_MAIN-ONE-CFE Strategy Order Test Plan</i> .....	23
3j, <i>(Hybrid Sections of Quote Test Plan - not a separate document)</i> .....	23
3k, <i>(CBOE Futures Exchange (CFE) Supplemental Tests - Contained within document 3e: Order Test Plan)</i> .....	23
3L, <i>(CBOE Futures Exchange (CFE) Supplemental Tests - Contained within document 3c: Quote Test Plan)</i> .....	23
3m, <i>Stock Trading On CBOEdirect (STOC) Order Test Plan</i> .....	23
3n, <i>Stock Trading On CBOEdirect (STOC) Quote Test Plan</i> .....	23
3o, <i>Stock Trading On CBOEdirect (STOC) DPM Administrative Test Plan</i> .....	23
PHASE 3 INTERFACE AND METHOD REQUIREMENTS .....	23
PHASE 3 V2 INTERFACE AND METHOD REQUIREMENTS FOR V2.5 ONLY .....	24
PRODUCTION ENVIRONMENT TEST PLANS .....	24
<i>Phase 4 Test Plan</i> .....	24
ADDITIONAL INFORMATION .....	24
<i>Callback interfaces</i> .....	24
<i>Subscription methods</i> .....	24
<i>Exception Handling</i> .....	24
<b>PHASE 1 CAS SIMULATOR REQUIREMENTS BY ROLE</b> .....	<b>25</b>
TABLE KEY .....	25
CMI::MARKETQUERY INTERFACE .....	25
CMIv2::MARKETQUERY INTERFACE .....	26
CMI::ORDERENTRY INTERFACE .....	27
CMI::ORDERQUERY INTERFACE .....	27
CMIv2::ORDERQUERY INTERFACE .....	28
CMI::PRODUCTDEFINITION INTERFACE .....	28
CMI::PRODUCTQUERY INTERFACE .....	28
CMI::TRADINGSESSION INTERFACE .....	29
CMI::QUOTE INTERFACE .....	29
CMIv2::QUOTE INTERFACE .....	29
CMIv2::USERHISTORY INTERFACE .....	30
<b>PHASE 3 INTERFACE AND METHOD REQUIREMENTS</b> .....	<b>32</b>
USER ACCESS INTERFACE .....	32
CMIUserSessionAdmin INTERFACE .....	32
USER SESSION MANAGER INTERFACE .....	32

MARKET QUERY INTERFACE .....	34
CMICURRENTMARKETCONSUMER INTERFACE.....	35
CMINBBOCONSUMER INTERFACE .....	35
CMIEXPECTEDOPENINGPRICECONSUMER INTERFACE.....	36
CMIRECAPCONSUMER INTERFACE .....	36
CMITICKERCONSUMER INTERFACE .....	36
CMIORDERBOOKCONSUMER INTERFACE .....	36
CMIORDERBOOKUPDATECONSUMER INTERFACE .....	37
CMIPRODUCTSTATUSCONSUMER INTERFACE .....	37
CMISTRATEGYSTATUSCONSUMER INTERFACE.....	37
QUOTE INTERFACE .....	37
CMIQUOTESTATUSCONSUMER INTERFACE .....	39
CMIRFQCONSUMER INTERFACE .....	39
ORDER QUERY INTERFACE .....	40
ORDER ENTRY INTERFACE.....	42
CMIORDERSTATUSCONSUMER INTERFACE .....	43
PRODUCT QUERY INTERFACE .....	44
PRODUCT DEFINITION INTERFACE .....	45
USER PREFERENCE QUERY INTERFACE.....	45
ADMINISTRATOR INTERFACE.....	45
TRADING SESSION INTERFACE.....	46
CMITRADINGSESSIONSTATUSCONSUMER INTERFACE.....	46
CMICLASSSTATUSCONSUMER INTERFACE .....	47
USER HISTORY INTERFACE .....	47
USER TRADING PARAMETERS INTERFACE .....	47
VERSION INTERFACE .....	48
<b>PHASE 3 V2 INTERFACE AND METHOD REQUIREMENTS FOR V2.5 AND HIGHER.....</b>	<b>49</b>
CMIV2::MARKETQUERY INTERFACE.....	49
CMIV2::ORDERQUERY INTERFACE .....	51
CMIV2::QUOTE INTERFACE.....	52
CMIV2::USERACCESSV2 INTERFACE .....	53
CMIV2::USERSESSIONMANAGERV2 INTERFACE.....	53
<b>PHASE 3 V2 INTERFACE AND METHOD REQUIREMENTS FOR V2.6 AND HIGHER.....</b>	<b>55</b>
cmiINTERMARKET::INTERMARKETMANUALHANDLING INTERFACE.....	55
cmiINTERMARKET::INTERMARKETQUERY INTERFACE .....	56
cmiINTERMARKET::INTERMARKETUSERACCESS INTERFACE .....	56
cmiINTERMARKET::INTERMARKETUSERSESSIONMANAGER INTERFACE.....	56
cmiINTERMARKET::NBBOAGENT INTERFACE .....	57
cmiINTERMARKET::NBBOAGENTSESSIONMANAGER INTERFACE .....	57
cmiINTERMARKETCALLBACK::CMiINTERMARKETORDERSTATUSCONSUMER INTERFACE.....	57
cmiINTERMARKETCALLBACK::CMINBBOAGENTSESSIONADMIN INTERFACE.....	58

## Table of Figures

Figure 1 CBOEdirect Certification Process Flowchart.....	13
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## Table of Tables

Table 1 Glossary .....	21
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## Change Notices

The following change notices are provided to assist users of the CMI in determining the impact of changes to their applications.

<b>Date</b>	<b>Version</b>	<b>Description of Change</b>
15 Jul 2011	V9.0.2	No changes
29 Apr 2011	V9.0.1	No changes
14 Jan 2011	V9.0	No changes
08 Jan 2010	V7.0	No changes
12 Aug 2009	V6.1	No changes
22 May 2009	V6.0	No changes
25 Nov 2008	V5.3	No changes
03 Oct 2008	V5.2	No changes
18 Jul 2008	V5.1	No changes
29 Feb 2008	V5.0	No changes
18 Jan 2008	V4.2.4	No changes
02 Nov 2007	V4.2.3	No changes
01 June 2007	V4.2.2	No changes
23 Feb 2007	V4.2.1	No changes
15 Dec 2006	V4.2	No changes
20 Sept 2006	V4.1	No changes
25 May 2006	V4.0	Referenced the new MDX document, API-08
06 Jan 2006	V3.2b	No changes
12 Aug 2005	V3.2	No updates
29 Jul 2005	V3.2	Modified section: Phase 5 Production test  Added a new section for the “Cert” environment
08 Apr 2005	V3.1a	No changes
30 Nov 2004	V3.1	Updates for internalization and auctions.
18 June 2004	V3.0	Updates for phase 1 quote requirements
28 Apr 2004	V2.52	No changes.
06 Feb 2004	V2.63	Added support for CBOE Futures

<b>Date</b>	<b>Version</b>	<b>Description of Change</b>
		Exchange and Stock trading on CBOEdirect.
10 Oct 2003	V2.62	No changes.
29 Aug 2003	V2.61	Broker dealer support for quote lock messages and market linkage changes.
31 July 2003	V2.6	Support for market linkage and stock
08 July 2003	V2.51	Documentation Update
14 Mar 2003	V2.5	Support for Hybrid
24 Jan 2003	V2.1	Production release update to support Linkage P orders.
20 May 2002	V2.0.1	No change.
22 April 2002	V2.0	Production Release
27 February 2002	V2.0b	CMi Version 2.0b Software Development Kit Beta 2
23 January 2002	V2.0a	CMi Version 2.0a Software Development Kit Beta 1
14 December 2001	V2.0	Updated documentation only for Version 2.0
18 May 2001	V1.0b	Added Market Data role information.
19 March 2001	V1.0a	Production Update
15 September 2000	V0.9	Initial Draft

## About This Document

### Purpose

This document outlines and describes each phase of testing to obtain certification to access the CBOE Network using the CBOE Market Interface (CMi).

### Intended Audience

Anyone who is involved in the deployment of an application using the CMi to access CBOEdirect®.

### Related Documents

Document Number	Document Description
Roadmap.doc	CBOE API and CAS Document Road Map
API-01	CBOE API Volume 1: Overview and Concepts
API-02	CBOE API Volume 2: CMi Programmer's Guide to Interfaces and Operations
API-03	CBOE API Volume 3: CMi Programmer's Guide to Messages and Data Types
API-04	CBOE API Volume 4: CMi Dictionary of Attributes and Operations
API-05	CBOE API Volume 5: Using CMi with Specific Object Request Brokers
API-06	CBOE API Volume 6: Connecting to the CBOE Network
API-08	CBOE API Volume 8: CMi Programmer's Guide to the Market Data Express (MDX) Data Feed
CAS-01	CBOE Application Server Volume 1: Overview and Concepts
CAS-02	CBOE Application Server Volume 2: CBOE Application Server Simulator for Stand Alone Testing
NET-01	CBOE Network Connection Information

### Support and Questions Regarding This Document

Specific questions regarding setting up a test connection to CBOEdirect via CMi can be directed to [cmiconnect@cboe.com](mailto:cmiconnect@cboe.com). General questions regarding CBOEdirect APIs can be directed to 312.786.7300 or [api@cboe.com](mailto:api@cboe.com).

Please email [hybrid@cboe.com](mailto:hybrid@cboe.com) for support for production Hybrid application testing and general Hybrid business rules questions.



## Introduction

The Chicago Board Options Exchange (“Exchange” or “CBOE”) is adding new interfaces to provide access to Exchange services, including CBOEdirect™. These interfaces are designed to support both electronic and open outcry trading at the CBOE.

The API discussed in this document is the CBOE Market Interface (CMi). This document describes in detail what must be done to pass each phase of testing to become a certified CMi user. Within each phase are entry criteria, inputs, processes, outputs, and exit criteria to move from one phase to the next.

This is a living document and will be updated periodically. The most current version of this document can be obtained at the CBOE API web site at <http://systems.cboe.com/webapi/>.

## Implementing an application using the CMi

### Development

Organizations wishing to interface to CBOE exchange services begin by signing the License Agreement and then downloading the CBOE CMi Software Development Kit ("SDK") from the CBOE web site. The SDK contains documentation, software, and example code to start development.

### Test Environment

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

### Testing and Certification

The testing and certification of your application is done in phases. Each testing phase must be performed in sequential order. Each phase is described below. Some software vendors supply an API to their end-user for certain functionality to be performed. The end-user would have to test the software vendor's API using this functionality in the CBOEdirect test environment before proceeding to the production environment (phase 4) despite the fact that the software vendor has already passed the functionality tests in the test environment.

#### Phase 1. Stand Alone Testing using the CBOE Application Server Simulator

Once an application has been developed it should be tested using the stand alone CBOE Application Server (CAS) Simulator that is provided with the CMi SDK. The CAS Simulator is a software program that emulates the CBOE Application Server. The Simulator is provided with a predefined set of responses that can be used to test applications written to the CBOE APIs. All firms that plan to dial in to the CBOEdirect CMi test environment of must first submit an error free CMi Simulator audit log showing message calls to all required methods before access to the test environment will be granted.

#### Phase 2. Connectivity Testing with CBOE

Verify that your application can talk to a version of the CAS running at CBOE.

#### 2 CMi Phase 2 Test Plan

**Phase 3. Application Test**

Verify that your application behaves properly with a CAS running at the CBOE via a dial-up connection. All test plans must be repeated exception free.

- 3a Security Definition Test Plan
- 3b Market Data Test Plan
- 3c Quote Test Plan - Hybrid-ONE-CFE
- 3d W\_MAIN Order Test Plan
- 3e W\_MAIN-ONE-CFE Order Test Plan
- 3f Clearing Firm, Duplicate Message Test Plan
- 3g Strategy Quote Test Plan - ONE-CFE
- 3h W\_MAIN Strategy Order Test Plan
- 3i W\_MAIN-ONE-CFE Strategy Order Test Plan
- 3j Hybrid Quote Testing (Contained within 3c Quote Test Plan)
- 3k CBOE Futures Exchange (CFE) Supplemental Tests  
(Contained within document 3e: Order Test Plan)
- 3L CBOE Futures Exchange (CFE) Supplemental Tests  
(Contained within document 3c: Quote Test Plan)
- 3m Stock Trading On CBOEdirect (STOC) Order Test Plan
- 3n Stock Trading On CBOEdirect (STOC) Quote Test Plan
- 3o Stock Trading On CBOEdirect (STOC) DPM Administrative Test Plan
- 3x Functionality Acceptance Test

**Phase 4. Assurance Test****Hybrid Options**

Log on using your production CAS to the CBOEdirect production environment after trading hours. No application testing and no test plans are required.

**OneChicago and CBOE Futures Exchange (CFE)**

Test your application with the CAS installed at your site connecting to the CBOEdirect production environment outside of trading hours.

## 4 Phase 4 Test Plan

**Stock Trading on CBOEdirect (STOC)**

Ask your Systems Client Services (SCS, formerly API Client Relations and Systems Liaison) representative.

## Phase 5. Production Test

### Hybrid Options

Test your application in production from the CBOE Trading Floor during trading hours using your production hardware, software, and networking. CBOE Trading Operations department will run this test. No test plans are required. The following fake test classes will be used. These are not real stocks and are used for testing purposes only.

**HYR** (underlying market data is mapped to DJX production underlying market data - *HYR must only be used between 3:02 and 3:30 p.m.*)

**HBB** (underlying market data is mapped to EBAY production underlying market data)

**HTS** (underlying market data is mapped to IBM production underlying market data)

**HBR** (underlying market data is mapped to MRK production underlying market data)

### CBOE Futures Exchange (CFE)

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

CH

BT

### OneChicago

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

AK

HOB

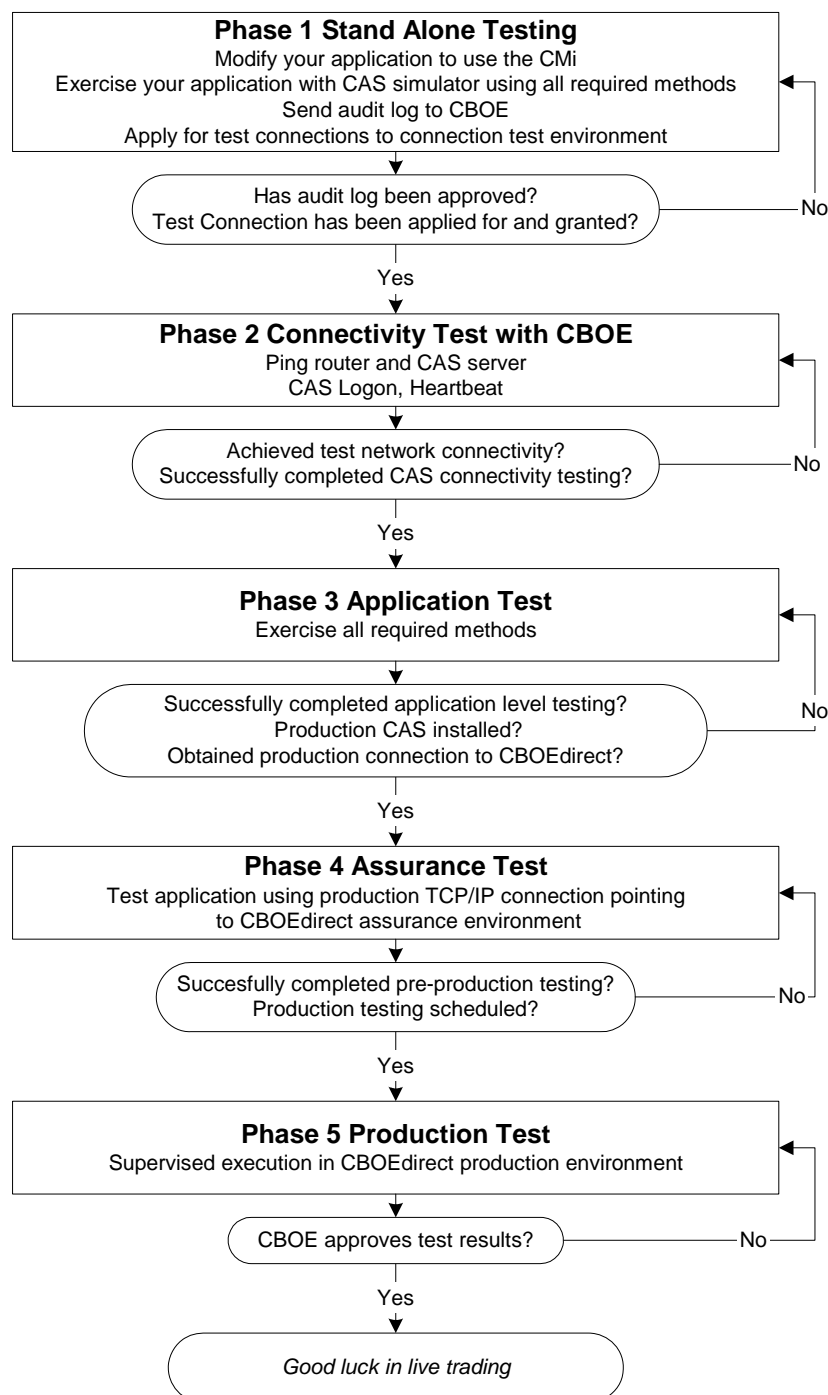
### Stock Trading on CBOEdirect (STOC)

Ask your Systems Client Services representative.

## Certification Process

Figure 1 provides an overview of the phases involved in certifying an application with CBOE.

**Figure 1 CBOEdirect Certification Process Flowchart**



## Certification Testing Phases

Each testing phase is outlined below. If you have any questions regarding the certification process or connecting your application to CBOEdirect, call your Systems Client Services representative, call API support at 312.786-7300, or e-mail [api@cboe.com](mailto:api@cboe.com). Please email [hybrid@cboe.com](mailto:hybrid@cboe.com) for questions regarding phase 5 testing and general Hybrid business questions.

### Phase 1 Stand-Alone Testing

During stand alone testing you will use the CAS Simulator that is provided with the CMi Software Development Kit (CMi/SDK). Once you are satisfied that your firm's application implements the required CAS Simulator interfaces and methods you will submit the *cas.audit* output log from the CAS Simulator to [api@cboe.com](mailto:api@cboe.com). The CBOE will verify the test results before moving on to Phase 2 of testing.

#### Entry Criteria

- Enter into the appropriate software license agreement with CBOE.

#### Inputs

- CMi Documentation
- API web site (to access Software License Agreement and Software Development Kit).

#### Process

- Obtain the CMi/SDK from the CBOE API web site.
- Modify or develop an application that uses the CMi interface.
- Test your application using the CAS Simulator provided with the CMi/SDK.
- Submit the *cas.audit* output log from the CAS Simulator that verifies the interaction of your application with the CAS Simulator.
- Submit the Test Connection Request Form that can be downloaded on the API web site at: <http://systems.cboe.com/webapi/>.

#### Outputs

- Application that works with CMi.
- CAS Simulator *cas.audit* output log file that contains results of the interaction with your application. All phase 1 CAS Simulator Required Methods must appear in the log and be exception free (as defined in the *Phase 1 CAS Simulator Requirements by Role* Test Plan which is available for download at the CBOE API web site at: <http://systems.cboe.com/webapi/>).
- A completed CBOE *CMi Test Connection Request Form* received by CBOE.

#### Exit Criteria

- CBOE approval of *cas.audit* file.
- CBOE reply to CMi Test Connection Request.

## Phase 2 Connectivity Test

During this phase your application will connect to a CAS in the test environment at the CBOE. This is done using an analog or ISDN dial-up TCP/IP connection. In lieu of using dial-up, firms may use the CBOE Managed WAN to connect to the CBOEdirect test environment. This test will verify the user's ability to establish a connection to the CAS and basic user session functionality.

### Entry Criteria

- CBOE has provided you with a test connection for your firm and CAS configuration information, signifying that your application is ready for testing with the CBOE application testing environment.

### Inputs

- Dial up network hardware (router, modem, firewall etc.) configured as described and in documents NET-01 and API-06.

### Process

- Schedule the connectivity test with CBOE personnel by contacting [api@cboe.com](mailto:api@cboe.com).
- Configure your test network to dial up and connect to the CBOE CMi test environment.
- Establish dial up connection to CBOE.
- Perform the following CMi Phase 2 Test Plans (available for download at the CBOE API web site at <http://systems.cboe.com/webapi/>):
  - ❖ **Connectivity Test Plan:** This plan tests network connectivity to the CBOE test environment by pinging the CBOE router, pinging CBOE CAS, and verifying the availability of the CAS HTTP Server.
  - ❖ **CAS User Session Test Plan:** This test plan verifies ability to access the UserAccess interface, login to the CAS, obtain the UserSessionManager interface, and verify acceptable implementation of the CMiUserSessionAdmin callback interface.

### Outputs

- Log file from CAS running in CBOE Connectivity test environment.

### Exit Criteria

- CBOE verifies results of connectivity tests and approves advancing to Phase 3.

## Phase 3 Application Test

During this phase of testing your firm's application will test against a CAS in the test environment at the CBOE using an analog or ISDN dial-up TCP/IP connection. This test is intended to verify that your application operates successfully with a CAS. **All of your application and debug logs generated during the testing should be saved for future reference.**

### Entry Criteria

- Successful completion of Phase 2 testing.

### Inputs

- Your firm's application establishes a user session with a CAS in the test environment at the CBOE via a dial-up connection.

### Process

- The application test environment should be accessed with CBOE Systems Client Services supervision. The application test environment will normally be available 24 hours a day, seven days a week. The CBOE supports the test environment Monday through Friday during local regular business hours. Please contact the API group to find out when the test environment will be shut down for maintenance.
- Execute the appropriate *Phase 3 Application Test Plans* that are available for download at the CBOE API web site at <http://systems.cboe.com/webapi/>. CBOE will turn on logging and then all test plans must be repeated exception free for phase 3x.

Test Plan	Broker-Dealer (Broker)	Market-Maker and DPM	Class Display	(Clearing) Firm	Firm Display
3a, Security Definition Test Plan	Required	Required	Required	Required	Required
3b, Market Data Test Plan	Suggested	DPM: Required MM: Suggested	Required	Optional	Optional
3c, Quote Test Plan (W_MAIN / ONE)	N/A	Required	N/A	N/A	N/A
3d, W_MAIN Order Test Plan	Required	Suggested	N/A	Required	N/A
3e, W_MAIN / ONE Order Test Plans	Required	Suggested	N/A	Required	N/A
3f, Clearing Firm, Duplicate Message	Required	Required	N/A	Required	Required
3g, Strategy Quote Test Plan (ONE)	Optional	Optional	N/A	Optional	N/A
3h, W_MAIN Strategy Order Test Plan	Optional	Optional	N/A	Optional	N/A
3i, W_MAIN / ONE Strategy Order Test Plan	Optional	Optional	N/A	Optional	N/A



<b>Test Plan</b>	<b>Broker-Dealer (Broker)</b>	<b>Market-Maker and DPM</b>	<b>Class Display</b>	<b>(Clearing) Firm</b>	<b>Firm Display</b>
3j, Hybrid Quote Testing (Contained within 3c Quote Test Plan)	N/A	Required for Hybrid	N/A	N/A	N/A
3k, CBOE Futures Exchange (CFE) Supplemental Tests (Contained within document 3e: Order Test Plan)	Required for CFE	Optional	N/A	N/A	N/A
3L, CBOE Futures Exchange (CFE) Supplemental Tests (Contained within document 3c: Quote Test Plan)	N/A	Required for CFE	N/A	N/A	N/A
3m, Stock Trading On CBOEdirect (STOC) Order Test Plan	Required for STOC	Optional for MM, Required for DPMs	N/A	Optional	N/A
3n, Stock Trading On CBOEdirect (STOC) Quote Test Plan	N/A	Required for STOC	N/A	N/A	N/A
3o, Stock Trading On CBOEdirect (STOC) DPM Administrative Test Plan	N/A	DPM only	N/A	N/A	N/A

**Outputs**

- Test results for each test plan and log review for the 3x portion of the test.

**Exit Criteria**

- CBOE verifies successful completion of all required methods in each test plan and produces audit log results of test plans.
- Firm calls all phase 3 required methods exception free during a logged 3x functionality acceptance test.
- CBOE approves advancing to the Phase 4 CBOE Acceptance Test.

## Phase 4 Assurance Test

During this phase, you will use the production TCP/IP connection as described in document NET-01. CBOE will install and configure a CAS on your firm's premises. Your application will be tested against production CBOEdirect. If the user plans to use the CBOE Trader Workstation, then this phase must be performed.

### Entry Criteria

- Successful completion of Phase 3 testing.
- Obtained production connection to CBOEdirect.

### Inputs

- *NET-01 Connecting to the CBOE Network* – Production Connection Request

### Process

- Acquire a production connection to the CBOE as defined in *NET-01* and *API-06*.
- CBOE will install a CAS on your premises. Related fees can be obtained at the API web site.
- Schedule a production testing session at least one day in advance.
- For Independent Software Vendors (ISV), this phase must be performed at every client site as it checks production connectivity.

#### Hybrid Options Process

- Log on using your production CAS to the CBOEdirect production environment after trading hours. No application testing and no test plans are required.

#### OneChicago Futures Process

- Test your application with the CAS installed at your site connecting to the CBOEdirect production environment outside of trading hours. Perform this test using the Phase 4 Test Plan.

#### Stock Trading on CBOEdirect (STOC)

- Ask your Systems Client Services representative

### Outputs

- CBOE test logs for each test plan.

### Exit Criteria

- Successful completion of all test plans.
- CBOE approves advancing to the Phase 5 Production Test.

## Phase 5 Production Test

The final step in testing is in the production environment. If the user plans to use the CBOE Trader Workstation, then this phase must be performed.

### Entry Criteria

- You have successfully completed Phase 4 testing.

### Inputs

- CMi application configured for production.

### Process

- Configure your production environment for connections to CBOEdirect production environment.
- For Independent Software Vendors (ISV), this phase must be performed at each client site.

### Hybrid Options

- Test your application in production from the CBOE Trading Floor during trading hours using your production hardware, software, and networking. CBOE Trading Operations department will run this test. No test plans are required. The following fake test classes will be used. These are not real stocks and are used for testing purposes only.

**HYR** (underlying market data is mapped to DJX production underlying market data - *HYR must only be used between 3:02 and 3:30 p.m.*)

**HBB** (underlying market data is mapped to EBAY production underlying market data)

**HTS** (underlying market data is mapped to IBM production underlying market data)

**HBR** (underlying market data is mapped to MRK production underlying market data)

### CBOE Futures Exchange (CFE)

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

CH  
BT

### OneChicago

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

AK  
HOB

### Stock Trading on CBOEdirect (STOC)

- Ask your Systems Client Services representative

### **Outputs**

- CBOE verifies results of testing as described above.

### **Exit Criteria**

- Participation in the live CBOEdirect marketplace.

## Glossary

The following contains a list of terms that you should be familiar with when using this document.

**Table 1 Glossary**

Application Test Plan	Application test cases that certify that a firm is generating proper requests (for orders, cancel, cancel/replace) and is properly receiving responses (execution reports, rejects, cancel reports).
Application Test Environment	The CBOEdirect application test environment consists of a dial up IP network and a CAS that communicates with a test version of the CBOEdirect electronic trading system. The application test environment is used to validate your application using a CAS connected to the CBOEdirect electronic trading system.
CBOE Trader Workstation	(Also called CBOE GUI) This is a CBOE supplied graphical user interface that can be used for entering orders, individual quotes, viewing market data, etc.
Connection Test Environment	The CBOEdirect Connection Test Environment consists of a dial up IP network and a CAS Simulator running at the CBOE premises.
Connectivity Test Plan	Test cases that are used to verify connectivity between your application and the CAS that is running in the Connection Test Environment.
Production Connection Request	Form provided on the CBOE API web site <a href="http://systems.cboe.com/webapi">http://systems.cboe.com/webapi</a> to request a connection to the CBOE Network.
W_MAIN	Regular Trading Hours. The W_MAIN trading session takes place from 8:30 a.m. – 3:15 p.m. CT.
Test Connection Request	Form provided on the CBOE API web site <a href="http://systems.cboe.com/webapi">http://systems.cboe.com/webapi</a> that is used to request a connection to the CBOEdirect test environment.
Test Plan	A set of test cases that must be passed as part of the certification process. CBOEdirect Test Plans are available for download at the CBOE API web site at <a href="http://systems.cboe.com/webapi/">http://systems.cboe.com/webapi/</a> .

## Test Plans / Requirements Overview

Test Plans are available for download at the CBOE API web site at <http://systems.cboe.com/webapi/>.

### Phase 1 CAS Simulator Requirements by Role

This section included in this document provides charts that list which methods from which interfaces must be tested and logged in the CAS.audit log file when submitting the file to the CBOE. This test plan applies to Phase 1 only. Currently, this section is not available for download as a separate document.

### Phase 2 Test Plans

These test plans are available for download at the CBOE API web site.

#### Connectivity Test Plan

This test plan verifies proper firm application connectivity to the CBOE.

#### CAS User Session Test Plan

This test plan verifies that your firm's application properly connects to and establishes a user session with the CAS.

### Application Test Plans

These test plans apply to phase 3 of CMi testing.

#### 3a, Security Definition Test Plan

This test plan involves acquiring and dealing with products. It is required for all roles.

#### 3b, Market Data Test Plan

This test plan is required for the Class Display role and suggested for all other roles. It is also required for options DPMs.

#### 3c, Quote Test Plan – Hybrid-ONE-CFE

This test plan is required for Market-Makers and DPMs. It is not allowed for all other roles.

#### 3d, W\_MAIN Order Test Plan

Contact your Systems Client Services representative to discuss this test plan.

#### 3e, W\_MAIN-ONE-CFE Order Test Plan

This test plan is for users who intend to submit orders to CBOE, OneChicago, and CFE. It is required for the Broker (Broker-Dealer) and Firm role and suggested for Market-Makers and DPMs. It is not allowed for the Class Display and Firm Display roles.

#### 3f, Clearing Firm, Duplicate Message Test Plan

This test plan is for the (Clearing) Firm, Firm Display, Market-Maker, Broker-Dealer, and DPM roles. It is used to test duplicate messages that are generated when a Firm or Firm Display role logs on to CBOE.

### **3g, Strategy Quote Test Plan (ONE)**

This test plan is optional for Market-Makers and DPMs. It is not allowed for all other roles. It is used for entering complex (multi-leg) quotes in the ONE\_MAIN session only.

### **3h, W\_MAIN Strategy Order Test Plan**

Contact your Systems Client Services representative to discuss this test plan.

### **3i, W\_MAIN-ONE-CFE Strategy Order Test Plan**

This test plan is for users who intend to submit strategy (complex, multi-leg) orders to CBOE and OneChicago. It is optional for the Broker (Broker-Dealer), Market-Maker, DPM, and Firm roles. It is not allowed for the Class Display and Firm Display roles.

### **3j, (Hybrid Sections of Quote Test Plan - not a separate document)**

These sections are for users who intend to submit quotes to Hybrid. It is required for Hybrid Market-Makers and DPMs, but not allowed for all other roles.

### **3k, (CBOE Futures Exchange (CFE) Supplemental Tests - Contained within document 3e: Order Test Plan)**

This test plan is for users who intend to submit orders to CFE. It is optional for the Broker (Broker-Dealer), Market-Maker, DPM, and Firm roles. It is not allowed for the Class Display and Firm Display roles.

### **3L, (CBOE Futures Exchange (CFE) Supplemental Tests - Contained within document 3c: Quote Test Plan)**

These sections are for users who intend to submit quotes to CFE. It is required for CFE Market-Makers and DPMs, but not allowed for all other roles.

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

This test plan is for users who intend to submit orders to STOC. It is optional for the Broker (Broker-Dealer), Market-Maker, DPM, and Firm roles. It is not allowed for the Class Display and Firm Display roles.

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

This test plan is for users who intend to submit quotes to STOC. It is required for STOC Market-Makers and DPMs, but not allowed for all other roles.

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

This test plan is required for STOC DPMs and not allowed for all other roles.

## **Phase 3 Interface and Method Requirements**

This section included in this document describes requirements for all interfaces and methods for all roles. This section applies to Phases 3, 4, and 5 of CMI testing. Currently, this section appears in this document and is not available for download as a separate document. This section describes the interfaces and methods that were originally published in V2.0 but are still supported in V2.5.

## **Phase 3 V2 Interface and Method Requirements for V2.5 only**

This section included in this document describes requirements for all interfaces and methods for all roles. This section applies to Phases 3, 4, and 5 of CMi testing. Currently, this section appears in this document and is not available for download as a separate document. This section describes the interfaces and methods that were introduced in V2.5.

## **Production Environment Test Plans**

These test plans apply to Phases 4 of for OneChicago and CBOE Futures Exchange testing.

### **Phase 4 Test Plan**

The Phase 4 Test Plan is a last minute checkout of application functionality before proceeding to phase 5 of CBOEdirect testing. This test plan is currently used for OneChicago and CBOE Futures Exchange only.

## **Additional Information**

### **Callback interfaces**

The implementation of most of the offered business service interfaces involves the use of callback interfaces. To implement and test the methods of the interface requires the developer to exercise the callback interfaces. For example, if the Order Entry interface is implemented, then all methods in the Order Status Callback interface must be tested. If your application calls a message in one of the new V2 interfaces, you will receive a callback from one of the V2 callback interfaces.

### **Subscription methods**

It is recommended that you unsubscribe for any previously subscribed data streams if at any point during your session the data is no longer desired. If your application will not unsubscribe for any data stream until the close of the user session, you do not have to call the unsubscribe methods. The cleanup will take place at logout. Therefore, unsubscribe methods are listed as optional for testing.

### **Exception Handling**

We perform limited tests of your exception handling code at this time. It is the trading system developer's responsibility to verify that all implemented method's expected exceptions are correctly processed. The expected exceptions are listed in the signatures of each method.



## Phase 1 CAS Simulator Requirements By Role

### Table Key

Shading indicates that a method is not allowed for new development.

The following roles are represented in the tables below:

Market-Maker = MM

DPM = DPM

Broker Dealer = Brok

Firm = Firm

Firm Display = Firm Disp

Class Display = Cls D

The following levels of requirements are used in the tables below:

R = Required

E = Encouraged

O = Optional

N = Not allowed

- = Not applicable

### cmi::MarketQuery Interface

Not allowed for new development. The cmiV2::MarketQuery interface must be used instead.

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	getBookDepth (In W_MAIN, a user may only send this message once per 10 minutes per user for all options in the W_MAIN session)	O	O	O	O	O	O
	getMarketDataHistoryByTime	O	O	O	O	O	O
	subscribeBookDepth	N	N	N	N	N	N
	subscribeBookDepthUpdate	N	N	N	N	N	N
	subscribeCurrentMarketForClass	N	N	N	N	N	N
	subscribeCurrentMarketForProduct	N	N	N	N	N	N
	subscribeExpectedOpeningPrice	N	N	N	N	N	N
	subscribeNBBOForClass	N	N	N	N	N	N
	subscribeNBBOForProduct	N	N	N	N	N	N
	subscribeRecapForClass	N	N	N	N	N	N
	subscribeRecapForProduct	N	N	N	N	N	N
	subscribeTicker	N	N	N	N	N	N
	unsubscribeBookDepth	N	N	N	N	N	N
	unsubscribeBookDepthUpdate	N	N	N	N	N	N
	unsubscribeCurrentMarketForClass	N	N	N	N	N	N
	unsubscribeCurrentMarketForProduct	N	N	N	N	N	N
	unsubscribeExpectedOpeningPrice	N	N	N	N	N	N
	unsubscribeNBBOForClass	N	N	N	N	N	N
	unsubscribeNBBOForProduct	N	N	N	N	N	N
	unsubscribeRecapForClass	N	N	N	N	N	N

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	unsubscribeRecapForProduct	N	N	N	N	N	N
	unsubscribeTicker	N	N	N	N	N	N

## cmiV2::MarketQuery Interface

All messages optional for all roles.

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	getBookDepthDetails	O	O	O	O	O	O
	subscribeBookDepthForClassV2 (Not allowed for classes in W_MAIN. Not allowed for new development.)	O	O	O	O	O	O
	subscribeBookDepthForProductV2 (Not allowed for classes in W_MAIN. Not allowed for new development.)	O	O	O	O	O	O
	subscribeBookDepthUpdateForClassV2 (Not allowed for classes in W_MAIN. Not allowed for new development.)	O	O	O	O	O	O
	subscribeBookDepthUpdateForProductV2 (Not allowed for classes in W_MAIN. Not allowed for new development.)	O	O	O	O	O	O
	subscribeCurrentMarketForClassV2	O	O	O	O	O	O
	subscribeCurrentMarketForProductV2	O	O	O	O	O	O
	subscribeExpectedOpeningPriceForClassV2	O	O	O	O	O	O
	subscribeExpectedOpeningPriceForProductV2	O	O	O	O	O	O
	subscribeNBBOForClassV2	O	O	O	O	O	O
	subscribeNBBOForProductV2	O	O	O	O	O	O
	subscribeRecapForClassV2	O	O	O	O	O	O
	subscribeRecapForProductV2	O	O	O	O	O	O
	subscribeTickerForClassV2	O	O	O	O	O	O
	subscribeTickerForProductV2	O	O	O	O	O	O
	unsubscribeBookDepthForClassV2	O	O	O	O	O	O
	unsubscribeBookDepthForProductV2	O	O	O	O	O	O
	unsubscribeBookDepthUpdateForClassV2	O	O	O	O	O	O
	unsubscribeBookDepthUpdateForProductV2	O	O	O	O	O	O
	unsubscribeCurrentMarketForClassV2	O	O	O	O	O	O
	unsubscribeCurrentMarketForProductV2	O	O	O	O	O	O
	unsubscribeExpectedOpeningPriceForClassV2	O	O	O	O	O	O
	unsubscribeExpectedOpeningPriceForProductV2	O	O	O	O	O	O
	unsubscribeNBBOForClassV2	O	O	O	O	O	O
	unsubscribeNBBOForProductV2	O	O	O	O	O	O
	unsubscribeRecapForClassV2	O	O	O	O	O	O
	unsubscribeRecapForProductV2	O	O	O	O	O	O
	unsubscribeTickerForClassV2	O	O	O	O	O	O

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	unsubscribeTickerForProductV2	O	O	O	O	O	O

## cmi::OrderEntry Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	<b>acceptOrder –or- acceptOrderByProductName</b>	R	R	R	R	N	N
	acceptOrderCancelRequest	R	R	R	R	N	N
	acceptOrderUpdateRequest	E	E	E	E	N	N
	acceptOrderCancelReplaceRequest	R	R	R	R	N	N
	acceptCrossingOrder <i>Currently not supported in CBOEdirect</i>	-	-	-	-	-	-
	AcceptRequestForQuote	E	E	R	R	N	N
	acceptStrategyOrder	O	O	O	O	N	N
	acceptStrategyOrderUpdateRequest	O	O	O	O	N	N
	acceptStrategyOrderCancelReplaceRequest	O	O	O	O	N	N

## cmi::OrderQuery Interface

Subscription messages are not allowed for new development. The cmiV2::OrderQuery interface must be used for order subscriptions.

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	getPendingAdjustmentOrdersByProduct	O	O	O	O	O	N
	getPendingAdjustmentOrdersByClass	O	O	O	O	O	N
	queryOrderHistory	O	O	O	O	O	N
	getOrdersForProduct	E	E	E	E	N	N
	getOrdersForSession	E	E	E	E	N	N
	getOrderById	O	O	O	O	O	N
	getOrdersForType	O	O	O	O	O	N
	getOrdersForClass	O	O	O	O	O	N
	<b>subscribeOrders –or- subscribeOrdersWithoutPublish</b>	N	N	N	N	N	N
	subscribeOrdersByFirmWithoutPublish	N	N	N	N	N	N
	subscribeOrdersByFirm	N	N	N	N	N	N
	unsubscribeOrderStatusForProduct	N	N	N	N	N	N
	unsubscribeOrderStatusForSession	N	N	N	N	N	N
	unsubscribeOrderStatusForFirm	N	N	N	N	N	N
	unsubscribeAllOrderStatusForType	N	N	N	N	N	N
	unsubscribeOrderStatusByClass	N	N	N	N	N	N

## cmiV2::OrderQuery Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	subscribeOrderStatusV2 -or- subscribeOrderStatusForClassV2	R	R	R	R	N	N
	subscribeOrderStatusForFirmV2 -or- subscribeOrderStatusForFirmForClassV2	N	N	N	R	N	N
	unsubscribeOrderStatusV2	O	O	O	N	N	N
	unsubscribeOrderStatusForClassV2	O	O	O	N	N	N
	unsubscribeOrderStatusForFirmV2	N	N	N	O	N	N
	unsubscribeOrderStatusForFirmForClassV2	N	N	N	O	N	N

## cmi::ProductDefinition Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	acceptStrategy	O	O	O	O	O	O
	buildStrategyRequestByName	O	O	O	O	O	O
	buildStrategyRequestByProductKey	O	O	O	O	O	O

## cmi::ProductQuery Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	getProductTypes	O	O	O	O	O	O
	getProductClasses	O	O	O	O	O	O
	getProductsByClass	O	O	O	O	O	O
	getProducts	O	O	O	O	O	O
	getProductByName	O	O	O	O	O	O
	getProductNameStruct	O	O	O	O	O	O
	getProductClassByKey	O	O	O	O	O	O
	getProductByKey	O	O	O	O	O	O
	getClassByKey	O	O	O	O	O	O
	getClassBySymbol	O	O	O	O	O	O
	isValidProductName	O	O	O	O	O	O
	getAllPendingAdjustments	O	O	O	O	O	O
	getPendingAdjustments	O	O	O	O	O	O
	getPendingAdjustmentProducts	O	O	O	O	O	O
	getStrategyByKey	O	O	O	O	O	O
	getStrategiesByClass	O	O	O	O	O	O
	getStrategiesByComponent	O	O	O	O	O	O

## cmi::TradingSession Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	getCurrentTradingSessions	R	R	R	R	R	R
	getProductTypesForSession	R	R	R	R	R	R
	getClassesForSession	R	R	R	R	R	R
	getProductsForSession	R	R	R	R	R	R
	getStrategiesByClassForSession	O	O	O	O	O	O
	getProductBySessionForKey	O	O	O	O	O	O
	getStrategyBySessionForKey	O	O	O	O	O	O
	getClassBySessionForKey	O	O	O	O	O	O
	getProductBySessionForName	O	O	O	O	O	O
	getClassBySessionForSymbol	O	O	O	O	O	O
	getStrategiesByComponent	O	O	O	O	O	O
	unsubscribeClassesByTypeForSession	O	O	O	O	O	O
	unsubscribeProductsByClassForSession	O	O	O	O	O	O
	unsubscribeStrategiesByClassForSession	O	O	O	O	O	O
	unsubscribeTradingSessionStatus	O	O	O	O	O	O

## cmi::Quote Interface

All messages except for getQuote, cancelQuote, cancelAllQuotes, and cancelQuotesByClass are not allowed for new development. The cmiV2::Quote interface must be used instead.

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	acceptQuote	N	N	N	N	N	N
	acceptQuotesForClass	N	N	N	N	N	N
	getQuote	O	O	N	N	N	N
	cancelQuote	R	R	N	N	N	N
	cancelAllQuotes	O	O	N	N	N	N
	cancelQuotesByClass	R	R	N	N	N	N
	subscribeQuoteStatus	N	N	N	N	N	N
	subscribeRFQ	N	N	N	N	N	N
	subscribeQuoteStatusForFirm	N	N	N	N	N	N
	unsubscribeQuoteStatus	N	N	N	N	N	N
	unsubscribeRFQ	N	N	N	N	N	N
	unsubscribeQuoteStatusForFirm	N	N	N	N	N	N
	subscribeQuoteStatusWithoutPublish	N	N	N	N	N	N

## cmiV2::Quote Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	acceptQuotesForClassV2	R	R	N	N	N	N
	subscribeQuoteLockedNotification -or- subscribeQuoteLockedNotificationForClass	R	R	O	N	N	N
	subscribeQuoteStatusV2 -or- subscribeQuoteStatusForClassV2	R	R	N	N	N	N
	subscribeQuoteStatusForFirmV2 -or- subscribeQuoteStatusForFirmForClassV2	N	N	N	R	R	N
	subscribeRFQV2 ( <i>required for futures, not required for options or STOC</i> )	R	R	N	N	N	N
	unsubscribeQuoteLockedNotification	O	O	O	N	N	N
	unsubscribeQuoteLockedNotificationForClass	O	O	O	N	N	N
	unsubscribeQuoteStatusForClassV2	O	O	N	N	N	N
	unsubscribeQuoteStatusForFirmForClassV2	N	N	N	O	O	N
	unsubscribeQuoteStatusForFirmV2	N	N	N	O	O	N
	unsubscribeQuoteStatusV2	O	O	N	N	N	N
	unsubscribeRFQV2	O	O	N	N	N	N

### cmiV2::UserHistory Interface

Status (P or F)	Operation	MM	DPM	Brok	Firm	Firm Disp	Cls D
	getTraderClassActivityByTime	O	O	O	O	O	N
	getTraderProductActivityByTime	O	O	O	O	O	N



## Phase 3 Interface and Method Requirements

The following interfaces originally appeared in V2.0 but are still usable in V2.5. Some exceptions apply. Read the descriptions of each method below. Shading indicates that a method is not allowed for new development.

### User Access Interface

Status (P/F)	Method	Description
	login	Required for all roles.

### CMIUserSessionAdmin Interface

Status (P/F)	Method	Description
	acceptHeartBeat	Required for all roles.
	acceptLogout	Required for all roles.
	acceptTextMessage	Required for all roles.
	acceptAuthenticationNotice	Required for all roles.
	acceptCallbackRemoval	Required for all roles.

### User Session Manager Interface

Status (P/F)	Method	Description
	logout	Required for all roles.
	authenticate	Required for all roles.



Status (P/F)	Method	Description
	getAdministrator	Required for the Market Maker, DPM, Broker and Firm roles. Optional for the Firm Display role. Not allowed for the Class Display role..
	getValidUser	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for Class Display and Firm Display roles.
	changePassword	Required for all roles.
	getVersion	Required for all roles.
	getSystemDateTime	Optional for all roles.
	getTradingSession	Required for all roles.
	getMarketQuery	Optional for all roles but required for the Class Display role.
	getOrderQuery	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Not allowed for the Class Display and Firm Display roles.
	getProductDefinition	Implemented but not used in second Version of CBOEdirect.
	getProductQuery	Optional for all roles.
	getQuote	Required for Market-Makers and DPMs. Optional for the Broker-Dealer role. Not allowed for Class Display role. Optional for the Firm and Firm Display roles.
	getOrderEntry	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Not allowed for the Class Display and Firm Display roles.
	getUserTradingParameters	Not allowed for the Class Display or Firm Display role. Optional for all other roles.
	getUserHistory	Not allowed for the Class Display or Firm Display role. Optional for all other roles.

Status (P/F)	Method	Description
	getUserPreferenceQuery	Not allowed for all roles. For CBOE internal use only.

## Market Query Interface

This interface is not allowed for new development. The MarketQueryV2 interface should be used instead.

Status (P/F)	Method	Description
	getBookDepth	In W_MAIN, a user may only send this message once per 10 minutes per user for all options in the W_MAIN session. Not allowed for the Class Display role. Optional for all other roles.
	getMarketDataHistoryByTime	Not allowed for the Class Display role. Optional for all other roles.
	subscribeTicker	Not allowed for new development. Optional for all roles.
	subscribeRecapForClass	Not allowed for new development. Optional for all roles.
	subscribeRecapForProduct	Not allowed for new development. Optional for all roles.
	subscribeCurrentMarketForClass	Not allowed for new development. Optional for all roles.
	subscribeCurrentMarketForProduct	Not allowed for new development. Optional for all roles.
	subscribeNBBOForClass	Not allowed for new development. Optional for all roles.
	subscribeNBBOForProduct	Not allowed for new development. Optional for all roles.
	subscribeExpectedOpeningPrice	Not allowed for new development. Optional for all roles.
	subscribeBookDepth	Not allowed for new development. Not allowed for the Class Display role. Optional for all other roles.
	subscribeBookDepthUpdate	Not allowed for new development. Not allowed for the Class Display role. Optional for all other roles.
	unsubscribeCurrentMarketForProduct	Not allowed for new development. Optional for all roles.

Status (P/F)	Method	Description
	unsubscribeCurrentMarketForClass	Not allowed for new development. Optional for all roles.
	unsubscribeNBBOForProduct	Not allowed for new development. Optional for all roles.
	unsubscribeNBBOForClass	Not allowed for new development. Optional for all roles.
	unsubscribeRecapForProduct	Not allowed for new development. Optional for all roles.
	unsubscribeRecapForClass	Not allowed for new development. Optional for all roles.
	unsubscribeTicker	Not allowed for new development. Optional for all roles.
	unsubscribeExpectedOpeningPrice	Not allowed for new development. Optional for all roles.
	unsubscribeBookDepth	Not allowed for new development. Not allowed for the Class Display role. Optional for all other roles.
	unsubscribeBookDepthUpdate	Not allowed for new development. Not allowed for the Class Display role. Optional for all other roles.

### CMICurrentMarketConsumer Interface

Status (P/F)	Method	Description
	acceptCurrentMarket	<b>Required if either subscribeCurrentMarketForClass or subscribeCurrentMarketForProduct is invoked.</b>

### CMINBBOConsumer Interface

Status (P/F)	Method	Description
	acceptNBBO	<b>Required if either the subscribeNBBOForClass or subscribeNBBOForProduct methods is invoked.</b>

### **CMIExpectedOpeningPriceConsumer Interface**

Status (P/F)	Method	Description
	acceptExpectedOpeningPrice	<b>Required if the subscribeExpectedOpeningPrice method is invoked.</b>

### **CMIRecapConsumer Interface**

Status (P/F)	Method	Description
	acceptRecap	<b>Required if subscribeRecapForClass or subscribeRecapForProduct method is invoked.</b>

### **CMITickerConsumer Interface**

Status (P/F)	Method	Description
	acceptTicker	<b>Required if the subscribeTicker method is invoked.</b>

### **CMIOrderBookConsumer Interface**

Status (P/F)	Method	Description
	acceptBookDepth	<b>Required if the subscribeBookDepth method is invoked.</b>

## CMIOrderBookUpdateConsumer Interface

Status (P/F)	Method	Description
	acceptBookDepthUpdate	<b>Required if the subscribeBookDepthUpdate method is invoked.</b>

## CMIProductStatusConsumer Interface

Status (P/F)	Method	Description
	acceptProductState	Required for all roles.
	updatedProduct	Required for all roles.

## CMIStrategyStatusConsumer Interface

Status (P/F)	Method	Description
	updateProductStrategy	Optional for all roles.

## Quote Interface

Some messages are not allowed for new development. The QuoteV2 interface should be used instead

Status (P/F)	Method	Description
	acceptQuote	Not allowed for new development. <b>Required for Market-Makers and DPMs if the acceptQuotesForClass method is not used. Optional for Market-Makers and DPMs if the acceptQuotesForClass method is used.</b> Not allowed for the Broker, Firm, Firm Display, and Class Display roles.

Status (P/F)	Method	Description
	acceptQuotesForClass	Not allowed for new development. <b>Required for Market-Makers and DPMs using an autoquoting application that would submit multiple quotes at one time. When autoquoting takes place each method call must contain multiple quotes. If only manual quoting is anticipated, then this method is optional. If not used, then the acceptQuote method is required for Market-Makers and DPMs.</b> Not allowed for the Broker, Firm, Firm Display, and Class Display roles.
	getQuote	Encouraged for Market Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display roles..
	cancelQuote	Required for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display roles.
	cancelAllQuotes	Strongly encouraged for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display roles.
	cancelQuotesByClass	Required for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display roles.
	subscribeRFQ	Not allowed for new development. Required for Market-Makers and DPMs but not allowed for Broker, Firm, Firm Display, and Class Display roles. Required for futures, optional for options.
	subscribeQuoteStatus	Not allowed for new development. Required for Market-Makers and DPMs but not allowed for Broker, Firm, Firm Display, and Class Display roles.
	subscribeQuoteStatusWithoutPublish	Not allowed for new development. Optional for Market-Makers and DPMs but not allowed for Broker, Firm, Firm Display, and Class Display roles.
	unsubscribeRFQ	Not allowed for new development. Optional for Market-Makers and DPMs but not allowed for Broker, Firm, Firm Display, and Class Display roles.

Status (P/F)	Method	Description
	unsubscribeQuoteStatus	Not allowed for new development. Optional for Market-Makers and DPMs but not allowed for Broker, Firm, Firm Display, and Class Display roles.
	subscribeQuoteStatusForFirm	Not allowed for new development. Only the Firm and Firm Display roles may use this method.
	subscribeQuoteStatusForFirmWithoutPublish	Not allowed for new development. Only the Firm and Firm Display roles may use this method.
	unsubscribeQuoteStatusForFirm	Not allowed for new development. Only the Firm and Firm Display roles may use this method.

## CMIQuoteStatusConsumer Interface

Status (P/F)	Method	Description
	acceptQuoteStatus	Required for Market-Makers and DPMs. Optional for Firm and Firm Display roles. Not allowed for the Broker or Class Display roles.
	acceptQuoteFilledReport	Required for Market-Makers and DPMs. Optional for Firm and Firm Display roles. Not allowed for the Broker or Class Display roles.
	acceptQuoteBustReport	Required for Market-Makers and DPMs. Optional for Firm and Firm Display roles. Not allowed for the Broker or Class Display roles.

## CMIRFQConsumer Interface

Status (P/F)	Method	Description
	acceptRFQ	Required for Market-Makers and DPMs but not allowed for Broker, Firm, Firm Display, and Class Display roles. Required for futures, optional for options.

## Order Query Interface

Subscription messages are not allowed for new development. The cmiV2::OrderQuery interface must be used for order subscriptions.

Status (P/F)	Method	Description
	getOrdersForProduct	Encouraged for Broker and Firm roles. Encouraged for Market-Makers and DPMs who intend to submit orders. Not allowed for the Firm Display or Class Display role.
	getOrdersForSession	Encouraged for Broker and Firm roles. Encouraged for Market-Makers and DPMs who intend to submit orders. Not allowed for the Firm Display or Class Display role.
	getOrderById	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	getOrdersForType	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	getOrdersForClass	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	getPendingAdjustmentOrdersByProduct	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	getPendingAdjustmentOrdersByClass	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	queryOrderHistory	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.



Status (P/F)	Method	Description
	subscribeOrders	Not allowed for new development. Required for Broker and Firm roles if the subscribeOrdersWithoutPublish method is not used. Required for Market-Makers and DPMs who intend to submit orders if the subscribeOrdersWithoutPublish method is not used. Not allowed for the Firm Display or Class Display role.
	subscribeOrdersWithoutPublish	Not allowed for new development. Required for Broker and Firm roles if the subscribeOrders method is not used. Required for Market-Makers and DPMs who intend to submit orders if the subscribeOrders method is not used. Not allowed for the Firm Display or Class Display role.
	unsubscribeOrderStatusForProduct	Not allowed for new development. Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	unsubscribeOrderStatusForSession	Not allowed for new development. Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	unsubscribeAllOrderStatusForType	Not allowed for new development. Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	unsubscribeOrderStatusByClass	Not allowed for new development. Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display role.
	subscribeOrdersByFirm	Not allowed for new development. Only the Firm and Firm Display roles may utilize this method.
	subscribeOrdersByFirmWithoutPublish	Not allowed for new development. Only the Firm and Firm Display roles may utilize this method.
	unsubscribeOrderStatusForFirm	Not allowed for new development. Only the Firm and Firm Display roles may utilize this method.

## Order Entry Interface

Status (P/F)	Method	Description
	acceptOrder	<b>Required for Broker and Firm roles if acceptOrderByProductName is not used. Required for Market Maker and DPM roles who intend to submit orders if acceptOrderByProductName is not used.</b> Not allowed for the Class Display or Firm Display role..
	acceptOrderByProductName	<b>Required for Broker and Firm roles if acceptOrder is not used. Required for Market Maker and DPM roles who intend to submit orders if acceptOrder is not used.</b> Not allowed for the Firm Display or Class Display role.
	acceptOrderCancelRequest	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Not allowed for the Firm Display or Class Display roles.
	acceptOrderUpdateRequest	Strongly encouraged for Broker and Firm roles. Strongly encouraged for Market-Makers and DPMs who intend to submit orders. Not allowed for the Firm Display or Class Display roles.
	acceptOrderCancelReplaceRequest	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Not allowed for the Firm Display or Class Display role.
	acceptRequestForQuote	Required for Broker and Firm roles. Not allowed for the Firm Display or Class Display role. Encouraged for Market-Makers and DPMs.
	acceptCrossingOrder	This method is not supported in the current version of the CMi and is for future use in a subsequent version.
	acceptStrategyOrder	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display roles.
	acceptStrategyOrderUpdateRequest	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display roles.

Status (P/F)	Method	Description
	acceptStrategyOrderCancelReplaceRequest	Optional for Broker, Firm, Market-Maker, and DPM roles. Not allowed for Firm Display or Class Display roles.

## CMIOrderStatusConsumer Interface

Status (P/F)	Method	Description
	acceptNewOrder	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for the Firm Display role. Not allowed for the Class Display role.
	acceptOrderStatus	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for the Firm Display role. Not allowed for the Class Display role.
	acceptOrderBustReport	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for the Firm Display role. Not allowed for the Class Display role.
	acceptOrderFilledReport	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for the Firm Display role. Not allowed for the Class Display role.
	acceptOrderCanceledReport	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for the Firm Display role. Not allowed for the Class Display role.
	acceptOrderBustReinstateReport	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Optional for the Firm Display role. Not allowed for the Class Display role.

## Product Query Interface

Status (P/F)	Method	Description
	getProductTypes	Optional for all roles.
	getProductClasses	Optional for all roles.
	getProductsByClass	Optional for all roles.
	isValidProductName	Optional for all roles.
	getProductByName	Optional for all roles.
	getProductNameStruct	Optional for all roles.
	getAllPendingAdjustments	Optional for all roles.
	getPendingAdjustments	Optional for all roles.
	getPendingAdjustmentProducts	Optional for all roles.
	getStrategyByKey	Optional for all roles.
	getClassByKey	Optional for all roles.
	getProductByKey	Optional for all roles.
	getClassBySymbol	Optional for all roles.
	getStrategiesByComponent	Optional for all roles.
	getStrategiesByClass	Optional for all roles.

## Product Definition Interface

Status (P/F)	Method	Description
	acceptStrategy	Optional for all roles.
	buildStrategyRequestByName	Optional for all roles.
	buildStrategyRequestByProductKey	Optional for all roles.

## User Preference Query Interface

Not allowed for all roles. For CBOE internal use only.

Status (P/F)	Method	Description
	getAllSystemPreferences	Not allowed for all roles. For CBOE internal use only.
	getAllUserPreferences	Not allowed for all roles. For CBOE internal use only.
	getSystemPreferencesByPrefix	Not allowed for all roles. For CBOE internal use only.
	getUserPreferencesByPrefix	Not allowed for all roles. For CBOE internal use only.
	removeUserPreference	Not allowed for all roles. For CBOE internal use only.
	removeUserPreferencesByPrefix	Not allowed for all roles. For CBOE internal use only.
	setUserPreferences	Not allowed for all roles. For CBOE internal use only.

## Administrator Interface

Status (P/F)	Method	Description
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Status (P/F)	Method	Description
	sendMessage	Required for the Market-Maker, DPM, Broker and Firm roles. Optional for the Firm Display role. Not allowed for the Market Data role.

## Trading Session Interface

Status (P/F)	Method	Description
	getCurrentTradingSessions	Required for all roles.
	getProductTypesForSession	Encouraged for all roles.
	getClassesForSession	Encouraged for all roles.
	getProductsForSession	Required for Market-Makers and DPMs and encouraged for all other roles.
	getStrategiesByClassForSession	Optional for all roles.
	getProductBySessionForKey	Optional for all roles.
	getStrategyBySessionForKey	Optional for all roles.
	getStrategiesByComponent	Optional for all roles.
	getProductBySessionForName	Optional for all roles.
	getClassBySessionForSymbol	Optional for all roles.
	unsubscribeTradingSessionStatus	Optional for all roles.
	unsubscribeClassesByTypeForSession	Optional for all roles.
	unsubscribeProductsByClassForSession	Optional for all roles.
	unsubscribeStrategiesByClassForSession	Optional for all roles.
	getClassBySessionForKey	Optional for all roles.

## CMITradingSessionStatusConsumer Interface

Status (P/F)	Method	Description
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Status (P/F)	Method	Description
	acceptTradingSessionState	Required for all roles.

## CMIClassStatusConsumer Interface

Status (P/F)	Method	Description
	updateProductClass	Required for all roles.
	acceptClassState	Required for all roles.

## User History Interface

Status (P/F)	Method	Description
	getTraderClassActivityByTime	Not allowed for the Firm Display and Class Display role. Optional for all other roles.
	getTraderProductActivityByTime	Not allowed for the Firm Display and Class Display role. Optional for all other roles.

## User Trading Parameters Interface

Status (P/F)	Method	Description
	getAllQuoteRiskProfiles	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.
	getQuoteRiskManagementProfileByClass	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.
	setQuoteRiskManagementEnabledStatus	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.

Status (P/F)	Method	Description
	getQuoteRiskManagementEnabledStatus	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.
	getDefaultQuoteRiskProfile	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.
	setQuoteRiskProfile	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.
	removeQuoteRiskProfile	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.
	removeAllQuoteRiskProfiles	Optional for Market-Makers and DPMs but not allowed for the Broker, Firm, Firm Display, and Class Display role.

## Version Interface

Status (P/F)	Method	Description
	getVersionNumber	Encouraged for all roles.



## Phase 3 V2 Interface and Method Requirements for V2.5 and higher

### CMIV2::MarketQuery Interface

All of Market Query V2 (subscribing to market data) is optional for all users, but if any market query is used at all, it must be from the V2 interface, instead of the non-V2 interface. The only exception is that `subscribeExpectedOpeningPriceForClassV2` or `subscribeExpectedOpeningPriceForProductV2` is required for options DPMs.

Status (P/F)	Method	Description
	<code>getBookDepthDetails</code>	Optional for all roles.
	<code>subscribeBookDepthForClassV2</code>	Optional for all roles, but required if the firm wishes to subscribe to Book Depth, unless <code>subscribeBookDepthForProductV2</code> is used. Not allowed for a class in W_MAIN.
	<code>subscribeBookDepthForProductV2</code>	Optional for all roles, but required if the firm wishes to subscribe to Book Depth, unless <code>subscribeBookDepthForClassV2</code> is used. Not allowed for a class in W_MAIN.
	<code>subscribeBookDepthUpdateForClassV2</code>	Optional for all roles, but required if the firm wishes to subscribe to Book Depth Updates, unless <code>subscribeBookDepthUpdateForProductV2</code> is used. Not allowed for a class in W_MAIN.
	<code>subscribeBookDepthUpdateForProductV2</code>	Optional for all roles, but required if the firm wishes to subscribe to Book Depth Updates, unless <code>subscribeBookDepthUpdateForClassV2</code> is used. Not allowed for a class in W_MAIN.
	<code>subscribeCurrentMarketForClassV2</code>	Optional for all roles, but required if the firm wishes to subscribe to Current Market unless <code>subscribeCurrentMarketForProductV2</code> is used.
	<code>subscribeCurrentMarketForProductV2</code>	Optional for all roles, but required if the firm wishes to subscribe to Current Market unless <code>subscribeCurrentMarketForClassV2</code> is used.

Status (P/F)	Method	Description
	subscribeExpectedOpeningPriceForClassV2	Required for Options DPMs. Optional for all other roles, but required if the firm wishes to subscribe to EOP unless subscribeExpectedOpeningPriceForProductV2 is used.
	subscribeExpectedOpeningPriceForProductV2	Required for Options DPMs. Optional for all other roles, but required if the firm wishes to subscribe to EOP unless subscribeExpectedOpeningPriceForProductV2 is used.
	subscribeNBBOForClassV2	<i>NBBO is not implemented at this time.</i>
	subscribeNBBOForProductV2	<i>NBBO is not implemented at this time.</i>
	subscribeRecapForClassV2	Optional for all roles, but required if the firm wishes to subscribe to Recap unless subscribeRecapForProductV2 is used.
	subscribeRecapForProductV2	Optional for all roles, but required if the firm wishes to subscribe to Recap unless subscribeRecapForClassV2 is used.
	subscribeTickerForClassV2	Optional for all roles, but required if the firm wishes to subscribe to Ticker unless subscribeTickerForProductV2 is used.
	subscribeTickerForProductV2	Optional for all roles, but required if the firm wishes to subscribe to Ticker unless subscribeTickerForClassV2 is used.
	unsubscribeBookDepthForClassV2	Optional for all roles.
	unsubscribeBookDepthForProductV2	Optional for all roles.
	unsubscribeBookDepthUpdateForClassV2	Optional for all roles.
	unsubscribeBookDepthUpdateForProductV2	Optional for all roles.
	unsubscribeCurrentMarketForClassV2	Optional for all roles.
	unsubscribeCurrentMarketForProductV2	Optional for all roles.
	unsubscribeExpectedOpeningPriceForClassV2	Optional for all roles.
	unsubscribeExpectedOpeningPriceForProductV2	Optional for all roles.

Status (P/F)	Method	Description
	unsubscribeNBBOForClassV2	Optional for all roles.
	unsubscribeNBBOForProductV2	Optional for all roles.
	unsubscribeRecapForClassV2	Optional for all roles.
	unsubscribeRecapForProductV2	Optional for all roles.
	unsubscribeTickerForClassV2	Optional for all roles.
	unsubscribeTickerForProductV2	Optional for all roles.

## CMIV2::OrderQuery Interface

If any Order Query subscriptions are used at all, it must be from the V2 interface, instead of the non-V2 interface. These messages are required for order routing. They are not required for market-makers who enter quotes only.

Status (P/F)	Method	Description
	subscribeOrderStatusV2	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Not allowed for the Class Display and Firm Display roles. Optional if the subscribeOrderStatusForClassV2 method is used.
	subscribeOrderStatusForClassV2	Required for Broker and Firm roles. Required for Market-Makers and DPMs who intend to submit orders. Not allowed for the Class Display and Firm Display roles. Optional if the subscribeOrderStatusV2 method is used.
	subscribeOrderStatusForFirmForClassV2	Required for Broker and Firm roles. Not allowed for Market-Maker, DPM, Class Display, and Firm Display roles. Optional if the subscribeOrderStatusForFirmV2 method is used.
	subscribeOrderStatusForFirmV2	Required for Broker and Firm roles. Not allowed for Market-Maker, DPM, Class Display, and Firm Display roles. Optional if the subscribeOrderStatusForFirmForClassV2 method is used.

Status (P/F)	Method	Description
	unsubscribeOrderStatusForClassV2	Optional for all roles.
	unsubscribeOrderStatusForFirmForClassV2	Optional for all roles.
	unsubscribeOrderStatusForFirmV2	Optional for all roles.
	unsubscribeOrderStatusV2	Optional for all roles.

## CMIV2::Quote Interface

If any Quote messaging is used at all, it must be from the V2 interface, instead of the non-V2 interface. These messages are required for market-making. This interface is allowed for the Broker-Dealer role to subscribe to Quote Locked messages.

Status (P/F)	Method	Description
	acceptQuotesForClassV2	Required for Market-Makers and DPMs who plan to send two-sided quotes to CBOE. Not allowed for all other roles.
	subscribeQuoteLockedNotification	Required for Market-Makers and DPMs in Hybrid. Optional for Broker-Dealer role if “I” orders are used. Not allowed for all other roles or for futures. Optional if subscribeQuoteLockedNotificationForClass is used.
	subscribeQuoteLockedNotificationForClass	Required for Market-Makers and DPMs in Hybrid. Optional for Broker-Dealer role if “I” orders are used. Not allowed for all other roles or for futures. Optional if subscribeQuoteLockedNotification is used.
	subscribeQuoteStatusV2	Required for Market-Makers and DPMs. Not allowed for all other roles. Optional if subscribeQuoteStatusForFirmForClassV2 is used.
	subscribeQuoteStatusForClassV2	Required for Market-Makers and DPMs. Not allowed for all other roles. Optional if subscribeQuoteStatusForFirmForClassV2 is used.
	subscribeQuoteStatusForFirmV2	Optional for Firm and Firm Display roles.
	subscribeQuoteStatusForFirmForClassV2	Optional for Firm and Firm Display roles.

Status (P/F)	Method	Description
	subscribeRFQV2	Required for futures market-makers. Not supported for options (Hybrid W_MAIN). Not allowed for Broker-Dealer, Firm, Firm Display, and Class Display roles.
	unsubscribeQuoteLockedNotification	Optional for all roles.
	unsubscribeQuoteLockedNotificationForClass	Optional for all roles.
	unsubscribeQuoteStatusForClassV2	Optional for all roles.
	unsubscribeQuoteStatusForFirmForClassV2	Optional for all roles.
	unsubscribeQuoteStatusForFirmV2	Optional for all roles.
	unsubscribeQuoteStatusV2	Optional for all roles.
	unsubscribeRFQV2	Optional for all roles.

## CMIV2::UserAccessV2 Interface

Status (P/F)	Method	Description
	logon	Required for Hybrid and all V2.5 users.
	getUserSessionManagerV2	Required for Hybrid and all V2.5 users.

## CMIV2::UserSessionManagerV2 Interface

Status (P/F)	Method	Description
	getMarketQueryV2	Optional for Hybrid and all V2.5 users, but must be used if Market Query is used at all.
	getOrderQueryV2	Optional for all V2.5 users, but must be used if Order Query is used at all.

Status (P/F)	Method	Description
	getQuoteV2	Required for Market-Makers and DPMs. Optional for all other users, but must be used if Quote messaging is used at all.

## Phase 3 V2 Interface and Method Requirements for V2.6 and higher

### cmilIntermarket::IntermarketManualHandling Interface

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	acceptAdminMessage	This message is used for Intermarket Linkage users only.
	acceptCancelResponse	This message is used for Intermarket Linkage users only.
	acceptCustomerOrderSatisfy	This message is used for Intermarket Linkage users only.
	acceptFillReject	This message is used for Intermarket Linkage users only.
	acceptHeldOrderByClassReroute	This message is used for Intermarket Linkage users only.
	acceptHeldOrderFill	This message is used for Intermarket Linkage users only.
	acceptHeldOrderReroute	This message is used for Intermarket Linkage users only.
	acceptOpeningPriceForProduct	This message is used for Intermarket Linkage users only.
	acceptPreOpeningIndication	This message is used for Intermarket Linkage users only.
	acceptPreOpeningResponse	This message is used for Intermarket Linkage users only.
	acceptSatisfactionOrderFill	This message is used for Intermarket Linkage users only.
	acceptSatisfactionOrderInCrowdFill	This message is used for Intermarket Linkage users only.
	acceptSatisfactionOrderReject	This message is used for Intermarket Linkage users only.
	getAssociatedOrders	This message is used for Intermarket Linkage users only.
	getHeldOrderById	This message is used for Intermarket Linkage users only.
	getOrdersByOrderTypeAndClass	This message is used for Intermarket Linkage users only.
	getOrdersByOrderTypeAndProduct	This message is used for Intermarket Linkage users only.

Status (P/F)	Method	Description
	lockProduct	This message is used for Intermarket Linkage users only.
	rerouteBookedOrderToHeldOrder	This message is used for Intermarket Linkage users only.
	unlockProduct	This message is used for Intermarket Linkage users only.

### **cmilIntermarket::IntermarketQuery Interface**

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	getAdminMessage	This message is used for Intermarket Linkage users only.
	getDetailedOrderBook	This message is used for Intermarket Linkage users only.
	getIntermarketByClassForSession	This message is used for Intermarket Linkage users only.
	getIntermarketByProductForSession	This message is used for Intermarket Linkage users only.
	showMarketableOrderBookAtPrice	This message is used for Intermarket Linkage users only.
	getOrderBookStatus	This message is used for Intermarket Linkage users only.

### **cmilIntermarket::IntermarketUserAccess Interface**

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	getIntermarketUserSessionManager	This message is used for Intermarket Linkage users only.
	logon	This message is used for Intermarket Linkage users only.

### **cmilIntermarket::IntermarketUserSessionManager Interface**

This interface should be used for Intermarket Linkage.



Status (P/F)	Method	Description
	getIntermarketQuery	This message is used for Intermarket Linkage users only.
	getNBBOAgent	This message is used for Intermarket Linkage users only.

### **cmilIntermarket::NBBOAgent Interface**

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	registerAgent	This message is used for Intermarket Linkage users only.
	unregisterAgent	This message is used for Intermarket Linkage users only.

### **cmilIntermarket::NBBOAgentSessionManager Interface**

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	getIntermarketManualHandling	This message is used for Intermarket Linkage users only.

### **cmilIntermarketCallback::CMlIntermarketOrderStatusConsumer Interface**

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	acceptCancelHeldOrderRequest	This message is used for Intermarket Linkage users only.
	acceptFillRejectReport	This message is used for Intermarket Linkage users only.
	acceptHeldOrderCanceledReport	This message is used for Intermarket Linkage users only.

Status (P/F)	Method	Description
	acceptHeldOrderFilledReport	This message is used for Intermarket Linkage users only.
	acceptHeldOrderStatus	This message is used for Intermarket Linkage users only.
	acceptNewHeldOrder	This message is used for Intermarket Linkage users only.

### **cmilIntermarketCallback::CMINBBOAgentSessionAdmin Interface**

This interface should be used for Intermarket Linkage.

Status (P/F)	Method	Description
	acceptForcedOut	This message is used for Intermarket Linkage users only.
	acceptIntermarketAdminMessage	This message is used for Intermarket Linkage users only.
	acceptReminder	This message is used for Intermarket Linkage users only.
	acceptSatisfactionAlert	This message is used for Intermarket Linkage users only.
	acceptBroadcastIntermarketAdminMessage	This message is used for Intermarket Linkage users only.