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# **Reg SCI Playbook**

As of OCTOBER 5, 2016

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# Agenda

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|----------------------------------|
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# Overview

- Regulation SCI requires that each SCI entity designate members/participants (participating members) to take part in the annually scheduled Business Continuity and Disaster Recovery Plan test.
- SCI entities have established criteria for the designation of applicable members that are required to participate in the annual Business Continuity and Disaster Recovery Plan test
- The objective of the 2016 test is that SCI entities conduct an initial functional and performance testing of BC/DR plans with participating members to exercise and verify the ability to operate through a business continuity and/or disaster recovery event using backup sites, recovery facilities and backup communication capabilities.





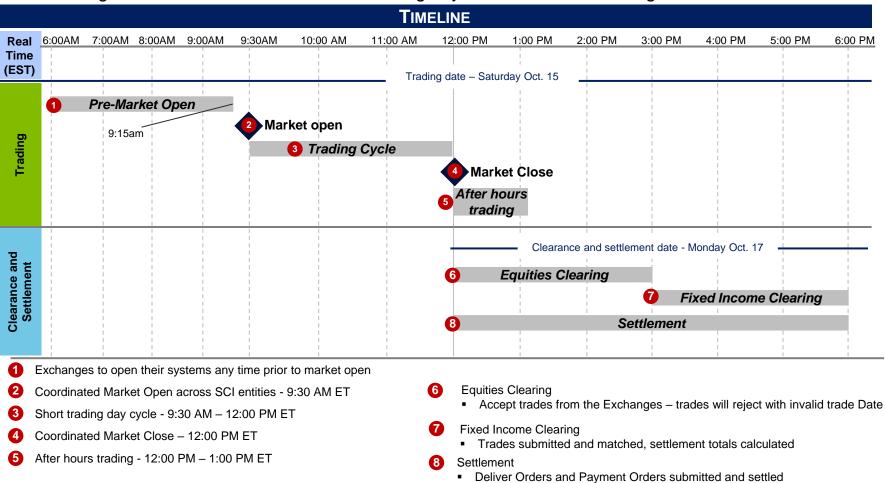
# **Guiding Principles**

- SCI entities are responsible for identifying and communicating testing requirements to their respective participating members
- Participating members should be able to operate in their production or DR environments
- The 2016 annual Regulation SCI BC/DR test should not require manual intervention by participating member systems to execute the test (manual intervention refers to limited system or configuration changes (e.g. changes to system clocks)
- The 2016 Regulation SCI BC/DR test is designed to verify that Regulation SCI entities are able to demonstrate that they can support the maintenance of fair and orderly markets in the event the Regulation SCI entities' business continuity and disaster recovery plans are activated
- The 2016 BC/DR test is not an end-to-end industry integrated test; it is a test for each individual SCI Entity to test its own BC/DR environments
- The test is not systems capacity test; however the test should generate enough message traffic to support trading and dissemination of market data through the SIPs
- 2016 annual BC/DR test is not a pass/fail exercise for the participating members; However some SCI members based on their rulebook will publish pass/fail results (OCC will publish results if asked by regulators). Others will provide designated members with a scorecard outlining their capabilities and issues
- In the event of an unsuccessful test further analysis will be required to understand the root cause (i.e. is the issue on the participating member side, SCI entity, etc.)
- The 2016 Regulation SCI BC/DR test is distinct from the classic SIFMA BC/DR test



# **Test Timeline and Break Points**

#### All exchanges and venues will follow a half trading day structure for the testing session



- CNS transactions and settlement totals processed
- Fixed income settlement totals processed
- Exchanges may test additional functionality including IPO's limit up/limit down and trading halts
- DTCC will be able to accept transactions during the Clearance and Settlement window beginning at noon
- DTCC anticipates all 4 entities (Omgeo, FICC, NSCC, DTC) will be simultaneously during the clearing and settlement window (12:00pm-6:00pm ET)



# **Guiding Principals for SIFMA Support on October 15**

- Reg SCI entities and their designated testers (participating members) should be in direct contact with each other on test day and work directly to resolve any issues
  - SIFMA will not have test outlines or test scripts, and participating members will need to resolve any issues bilaterally
- SIFMA operates a bridge line for the SIFMA classic test, with regular checkpoints to identify the status of test entities and confirm they are available for testing
  - The bridge line will also serve as a forum for entities and testers to reach out if they are unable to directly contact one another and identify alternative points of contact
  - Firms and participating members should resolve test problems through direct communications, not via the SIFMA bridge line
- SIFMA will post the status of test entities based on these reports on these checkpoints and other updates on its website to indicate if they are available for testing, experiencing difficulties, or have completed testing
  - SIFMA will also post the status of key milestones for Reg SCI, such as the start of the trading day and the close of the trading day.
  - SIFMA will not track the status of events specific to individual Reg SCI entities' test outlines, such as halts and IPOs



# **Test Scope Outline - Participating Members**

The objective of the test scope outline is to provide consistent detail for the execution of the test as well as consistent set of requirements

**Test Summary** 

- Participating Members can conduct the test from their production or DR environments
- Submit a representative sample of daily trade transactions to exchanges
- Work with with SCI entities to determine communication protocols
- Cover in-scope product types
- Clean all test data from systems prior to Monday market open





# **Test Scope Outline - Exchanges**

The objective of the test scope outline is to provide consistent detail for the execution of the test as well as consistent set of requirements

#### Test Summary

- Conduct trade matching
- Transmit matched trades to clearing agencies to demonstrate connectivity to the clearing agency (NSCC will reject the trades at the CDTS gateway and a reject message will be transmitted back to the exchange over FIX connections)
- Receive and verify messages (pended/rejected trades and execution) if applicable
- Clean all test data from systems prior to Monday market open

Note: Exchanges to communicate additional functionality including IPO's limit up/limit down and trading halts





# **Test Scope Outline - Clearing Agencies**

The objective of the test scope outline is to provide consistent detail for the execution of the test as well as consistent set of requirements

### Test Summary

### NSCC

- NSCC simulate trade executions on behalf of the exchanges
- Participating members access NSCC to inquire on trade data submissions that NSCC would simulate on behalf of the exchanges via web screens or automated output; to validate data and receive output from DTCC

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- Exchanges will:
  - Transmit matched trades to OCC for processing throughout the mock trading cycle
  - Balance trades with OCC once the market has closed
  - Receive and verify outbound DDS through connections to OCC's DR environment
- Firms will:
  - Submit post trade transactions to OCC utilizing the communication protocols normally used in production (External Encore, Real-time MQ, Batch SFTP or Batch NDM)
  - Receive and verify outbound DDS through connections to OCC's DR environments
  - Access on-demand and core reports through External Encore

### Fixed Income Clearing (FICC)

• Trades submitted and matched, settlement totals calculated

### Omgeo

- Trades submitted and matched/affirmed, submitted for settlement
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# Test Scope Outline - SIPs

The objective of the test scope outline is to provide consistent detail for the execution of the test as well as consistent set of requirements

#### Test Summary

#### SIP - NASDAQ

- As the legacy Nasdaq SIP will be the system of record during the time of the Industry DR/BCP test on 10/15, UTP data feeds and input ports will be available for testing via the Ashburn Data Center.
- However, the new Binary SIP will also be available for optional testing via the Chicago Data Center.

#### **SIP - SIAC**

- The NYSE SIPs (OPRA and CTS/CQS) will be available in Cermak on October 15, 2016
- Firms can contact <u>connectivity@nyse.com</u> for any questions on connecting to DR in Cermak
- General questions can go to the trade desk or relationship management (<u>trading@nyse.com</u> or <u>rmteam@nyse.com</u>)



# **Test Scope Outline - FINRA**

The objective of the test scope outline is to provide consistent detail for the execution of the test as well as consistent set of requirements

#### Test Summary

FINRA will create test scripts for each facility and send them to the firms who have been identified to test. Testing will include the following FINRA facilities:

- **TRACE** (Fixed Income Corporate & Agency Debt and Securitized Products)
- **ORF (**Over the Counter Equities)
- NY and Nasdaq TRF (for firms who report NMS trades to the TRFs)
- **OTCBB** (Over the counter Bulletin Board quoting)
- OATS (NMS stocks and OTC equity securities)





# **Equities Symbols and CUSIPs**

- Production or Test Symbols are used for trading
- Test Symbols will be used for clearing (minimum of one test symbol)
- Testing will be concentrated in a certain set of symbols (preferably with low market cap) defined by exchanges to support triggering market infrastructures/SIPs
- Production data will be used by FINRA for OTC equities testing

### Test Symbols

| #  | Exchange | Symbol                     |
|----|----------|----------------------------|
| 1  | BATS     | ZBZX                       |
| 2  | BATS     | ZTEST                      |
| 3  | BATS     | ZVZZT                      |
| 4  | BATS     | ZWZZT                      |
| 5  | NASDAQ   | ZJZZT                      |
| 6  | NASDAQ   | ZVZZC                      |
| 7  | NASDAQ   | ZXYZ.A                     |
| 8  | NASDAQ   | ZXZZT                      |
| 9  | NYSE     | NTEST Z (NTEST.Z Comstock) |
| 10 | AMEX     | ATEST Z (ATEST.Z Comstock) |
| 11 | ARCA     | PTEST Z (PTEST.Z Comstock) |



# Equities Symbols and CUSIPs (con't)

- Production or Test Symbols are used for trading
- Test Symbols will be used for clearing (minimum of one test symbol)
- Testing will be concentrated in a certain set of symbols (preferably with low market cap) defined by exchanges to support triggering market infrastructures/SIPs
- Production data will be used by FINRA for OTC equities testing

### Proposed Production Symbols\*

|    |          | Symbol | CUSIP     | #  | Exchange  | Symbol | CUSIP     |    | #    | Exchange  | Symbol | CUSIP     |
|----|----------|--------|-----------|----|-----------|--------|-----------|----|------|-----------|--------|-----------|
| 1  | NYSE     | AGR    | 05351W103 | 17 | NYSE MKT  | HLTH   | 66705B104 |    | 33   | NASDAQ    | RMBS   | 750917106 |
| 2  | NYSE     | BWXT   | 05605H100 | 18 | NYSE MKT  | NSU    | 64156L952 |    | 34   | BATS      | ALTS   | 74347B813 |
| 3  | NYSE     | FMC    | 302491303 | 19 | NYSE MKT  | ONVO   | 68620A104 |    | 35   | BATS      | DDJP   | 97717X289 |
| 4  | NYSE     | HXL    | 428291108 | 20 | NYSE MKT  | XRA    | 301835104 |    | 36   | BATS      | EDEN   | 46429B523 |
| 5  | NYSE     | MIC    | 55608B105 | 21 | NYSE ARCA | FISK   | 292102308 |    | 37   | BATS      | EMTL   | 78470P309 |
| 6  | NYSE     | МНК    | 608190104 | 22 | NYSE ARCA | OGCP   | 292102209 |    | 38   | BATS      | FUT    | 74347B532 |
| 7  | NYSE     | SNA    | 833034101 | 23 | NYSE ARCA | ESBA   | 292102100 |    | 39   | BATS      | HEUV   | 46435G698 |
| 8  | NYSE     | VAL    | 920355104 | 24 | NASDAQ    | AKAO   | 004449104 |    | 40   | BATS      | IGRO   | 46435G524 |
| 9  | NYSE     | WES    | 958254104 | 25 | NASDAQ    | DRRX   | 266605104 |    | 41   | BATS      | MEAR   | 46431W838 |
| 10 | NYSE     | TU     | 87971M103 | 26 | NASDAQ    | FALC   | 306137100 |    | 42   | BATS      | REGL   | 74347B680 |
| 11 | NYSE MKT | ATNM   | 94973V107 | 27 | NASDAQ    | HALO   | 40637H109 |    | 43   | BATS      | WYDE   | 74347B870 |
| 12 | NYSE MKT | втх    | 09066L105 | 28 | NASDAQ    | HNSN   | 411307200 | E  | ETF  |           |        |           |
| 13 | NYSE MKT | CQP    | 16411Q101 | 29 | NASDAQ    | JACK   | 466367109 |    | 44   | NYSE Arca | IAU    | 464285105 |
| 14 | NYSE MKT | CQH    | 16411W108 | 30 | NASDAQ    | LJPC   | 503459604 | Ir | ndex | (         |        |           |
| 15 | NYSE MKT | DNN    | 91688T104 | 31 | NASDAQ    | OSIR   | 68827R108 |    | 45   |           | NDX    |           |
| 16 | NYSE MKT | FSP    | 35471R106 | 32 | NASDAQ    | RICK   | 74934Q108 |    | 46   |           | MNX    |           |

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# **Equities Symbols and CUSIPs - FINRA Securities List**

| #  | FINRA Reporting Facility                         | Symbol      | CUSIP     | #  | FINRA Reporting Facility | Symbol | CUSIP     |
|----|--|-------------|-----------|----|--------------------------|--------|-----------|
| 1  |  | ALAD        | 010722106 | 20 |                          | ALLY   | 02005N100 |
| 2  |  | BIRNF       | Q1387K108 | 21 |                          | CAT    | 149123101 |
| 3  | ORF  | FLEW        | 339059107 | 22 | FINRA TRFs               | NKE    | 654106103 |
| 4  | (non clearing test cases)                        | OJOC        | 678110107 | 23 | (Nasdaq and NYSE)        | AAPL   | 037833100 |
| 5  |  | KIMTF       | Y47601102 | 24 |                          | DISH   | 25470M109 |
| 6  |  | PEBA        | 70725P101 | 25 |                          | SBUX   | 855244109 |
| 7  |  | ABRW        | 024718108 | 26 |                          | NFLX   | 64110L106 |
| 8  | OTCBB Quoting                                    | BNNP        | 063770101 |    |                          |        |           |
| 9  | J. J         | CALVF       | G1757E105 |    |                          |        |           |
| 10 |  | MRICD       | 55347P209 |    |                          |        |           |
| 11 |  | TEVA4384553 | 88167AAE1 |    |                          |        |           |
| 12 |  | FHLN4384850 | 3130A8T52 |    |                          |        |           |
| 13 |  | D4382803    | 25746U844 |    |                          |        |           |
| 14 |  | CHRC4383282 | 377080AZ9 |    |                          |        |           |
| 15 | TRACE – Fixed Income<br>(Corporate & Agency Debt | FMCC4364001 | 3128MJYM6 |    |                          |        |           |
| 16 | and Securitized Products)                        | KMX4303812  | 14313XAC4 |    |                          |        |           |
| 17 |  | SLNO3612001 | 81619PAD9 |    |                          |        |           |
| 18 |  | BAC3284722  | 05951GCB6 |    |                          |        |           |
| 19 |  | FNMA3879397 | 01F020489 |    |                          |        |           |



# **Options Symbols and CUSIPs**

- Production symbols are to used for testing (OCC does not accept test symbols)
- Testing will be concentrated based on a set of symbols (preferably with low market cap) provided by exchanges to support triggering market infrastructures/SIPs
- Options symbols used for testing to coordinate with underlying equity symbols

#### **Proposed Production Symbols for Option Testing\***

| #  | Exchange | Symbol | CUSIP                    | Options                         |
|----|----------|--------|--------------------------|---------------------------------|
| 1  | NYSE     | AGR    | 05351W103                | AGR-Nov 18 16-C-45.00-P-45.00   |
| 2  | NYSE     | BWXT   | 05605H100                | BWXT-Nov 18 16-C-35.00-P-45.00  |
| 3  | NYSE     | FMC    | 302491303                | FMC-Jan 20 17-C45.00-P-45.00    |
| 4  | NYSE     | HXL    | 428291108                | HXL-Dec 16 16-C-45.00 P-45.00   |
| 5  | NYSE     | MIC    | 55608B105                | MIC-Jan 20 17-C-75.00 P-75.00   |
| 6  | NYSE     | МНК    | 608190104                | MHK-Nov 18 16-C-195.00 P-195.00 |
| 7  | NYSE     | SNA    | 833034101                | SNA-Dec 16 16-C155.00 P-155.00  |
| 8  | NYSE     | VAL    | 920355104                | VAL-Jan 19 18-C-100.00-P-100.00 |
| 9  | NYSE     | WES    | 958254104                | WES-Nov 18 16-C45.00 P-45.00    |
| 10 | NYSE     | TU     | 87971M103                | TU-Dec 16 16-C-35.00-P-35.00    |
| 11 | NYSE MKT | ATNM   | 00507W107                | ANTM Nov 18 6 C 5.00, P 5.00    |
| 12 | NYSE MKT | BTX    | 09066L105                | BTX-Dec 16 16-C-5.00 C-5.00     |
| 13 | NYSE MKT | CQP    | 16411Q101                | CQP-Dec 16 16-C-30.00 P-30.00   |
| 14 | NYSE MKT | CQH    | 16411W108                | CQH-Jan 20 17-C-25.00 P-25.00   |
| 15 | NYSE MKT | DNN    | 91688T104<br>(248356107) | DNN-Jan 20 17-C-5.00 P-5.00     |
| 16 | NYSE MKT | FSP    | 35471R106                | FSP-Dec 16 16-C12.50 P-12.50    |
| 17 | NYSE MKT | HLTH   | 66705B104<br>(65500B103) | HLTH-Feb 17 17-C-2.50 P-2.50    |

\* Not Comprehensive - SCI entities may require specific Options to support their testing

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# Options Symbols and CUSIPs (cont'd)

- Production symbols are to used for testing (OCC does not accept test symbols)
- Testing will be concentrated based on a set of symbols (preferably with low market cap) provided by exchanges to support triggering market infrastructures/SIPs
- Options symbols used for testing to coordinate with underlying equity symbols

#### **Proposed Production Symbols for Option Testing\***

| #  | Exchange | Symbol | CUSIP                    | Options                         |
|----|----------|--------|--------------------------|---------------------------------|
| 18 | NYSE MKT | NSU    | 64156L952<br>(64156L101) | NSU-Dec 16 16- C-5.00 P-5.00    |
| 19 | NYSE MKT | ONVO   | 68620A104                | ONVO-Feb 17 17-C-5.00 P-5.00    |
| 20 | NYSE MKT | XRA    | 301835104                | XRA-Nov 18 16-C-2.50 P-2.50     |
| 21 | NASDAQ   | AKAO   | 004449104                | AKAO-Dec 16 16-C-5.00 P-5.00    |
| 22 | NASDAQ   | DRRX   | 266605104                | DRRX-Jan 20 17-C-2.50 P2.50     |
| 23 | NASDAQ   | FALC   | 306137100                | FALC-Nov 18 16-C-2.50 P-2.50    |
| 24 | NASDAQ   | HALO   | 40637H109                | HALO-Dec 16 16-C-9.00 P-9.00    |
| 25 | NASDAQ   | HNSN   | 411307200                | HNSN-Dec 16 16-C-5.00 P-5.00    |
| 26 | NASDAQ   | JACK   | 466367109                | JACK-Dec 16 16-C-85.00 P-85.00  |
| 27 | NASDAQ   | LJPC   | 503459604                | LJPC-Dec 16 16- C-12.50 P-12.50 |
| 28 | NASDAQ   | OSIR   | 68827R108                | OSIR-Feb 17 17-C-6.00 P-6.00    |
| 29 | NASDAQ   | RICK   | 74934Q108                | RICK-Feb 17 17-C-12.50 P-12.50  |
| 30 | NASDAQ   | RMBS   | 750917106                | RMBS-Jan 19 18-C-17.00-P-17.00  |
| 31 |          | IAU    |                          | IAU-Jan 20 17 C-13.00-P-13.00   |
| 32 |          | NDX    |                          | NDX-DEC 16 16 C-4575.0-P-4575.0 |
| 33 |          | MNX    |                          | MNX-DEC 16 16 C-480.0-P-480.0   |

\* Not Comprehensive - SCI entities may require specific Options to support their testing



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# **Pre Test and Post Test**

### Pre/Post-test Requirements and Guidelines

|   | DTCC  | осс                      | СВОЕ  | IEX   | NSX   | UBS ATS                    |
|---|---|--------------------------|---|---|---|----------------------------|
| Availability for Reg<br>SCI Pre/Post<br>Testing | Yes   | Yes                      | Yes   | Yes   | Yes   | Yes –<br>connectivity only |
| Pre/Post - Testing<br>Required                  | Yes   | Pre-Test<br>Connectivity | No  | No  | No  | Pre - connectivity<br>only |
| Connectivity<br>Testing Required                | Optional  | Yes                      | No  | No  | No  | No                         |
| Reg SCI Pre Test<br>Contact<br>Information      |   | occDRtest@theocc<br>.com | api@cboe.com  | marketops@iextra<br>ding.com<br>646.363.2300                                  | NSXTrading@NSX<br>.com<br>1-800-843-3924            | ATS@ubs.com                |
| Reg SCI Pre<br>Testing Dates                    | Saturday<br>September 17,<br>2016   | 6, 2016                  | Saturday<br>September 10,<br>17, 24, 2016<br>Saturday October<br>1, 8, 2016             | By arrangement<br>only  | Date to be<br>determined                            | As needed                  |
| Comments on Reg<br>SCI Pre Testing              | FIX to FIX<br>connectivity<br>testing with the<br>exchanges ("ping<br>test")                      | Test team @              | Participating<br>members<br>wishing to Pre-<br>test can<br>coordinate with<br>API Group | Will work with<br>participating<br>members on a<br>one-off, arranged<br>basis | Specific testing<br>could be attend<br>upon request | Connectivity<br>testing    |
| Reg SCI Post<br>Testing Dates                   | Saturday October<br>22, 2016  |                          |   |   |   | N/A                        |
| Comments on Reg<br>SCI Post Testing             | Optional test date<br>for participating<br>members who did<br>not satisfy DTCC's<br>test criteria |                          |   |   |   | N/A                        |
| sifma   |   |                          |   |   | 6 Doloitto Dovolonment II                           |                            |

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# Pre Test and Post Test

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|                 |                        |       |

|  | FINRA   | NYSE, NYSE, MKT,<br>NYSE , ARCA  | ISE | MIAX Option Exchange   |
|--|---|--|-----|--|
| Availability for<br>Reg SCI Pre/ Post<br>Testing | Yes   | Yes  | Yes | Yes, MIAX Options Exchange   |
| Pre/Post - Testing<br>Required                   | Yes (for selected firms)  | No   | Yes | No   |
| Connectivity<br>Testing Required                 | Recommended   | No   | Yes | No   |
| Reg SCI Pre Test<br>Contact<br>Information       |   | questions on connecting<br>Cermak DR: connectivity<br>@nyse.com; General<br>questions: trading<br>@nyse.com or<br><u>rmteam@nyse.com</u> |     | TradingOperations@MIAXOptions.com<br>(609) 897-7302  |
| Reg SCI Pre<br>Testing Dates                     | Saturday<br>September 17,<br>2016 - Ping test   | Saturday September 17,<br>2016   |     | By Arrangement Only. Cross-connects in the MIAX<br>CH4 facility must be established prior to the test<br>date. Onboarding of the cross-connects will<br>commence on Sunday August 22, 2016   |
| Comments on<br>Reg SCI Pre<br>Testing            | Pre-testing will be<br>for connectivity to<br>FINRA DR only and<br>will not include<br>functional testing | Yes  |     | Conduction to the SIFMA test from the new DR<br>Data Center located in the Equinix CH4 facility. All<br>participants will be required to establish cross-<br>connects in this facility prior to the test date. All<br>mandatory participants were notified - All members<br>are encouraged to participate. |
| Reg SCI Post<br>Testing Dates                    |   | No   |     |  |
| Comments on<br>Reg SCI Post<br>Testing           |   |  |     |  |



# **Pre-Test and Post Test**

### Pre/Post-test Requirements and Guidelines

|  | вох  | BATS  | СНХ                                    | NASDAQ  |
|--|--|---|--|---|
| Availability for Reg<br>SCI Pre/ Post<br>Testing | Yes  | Yes   | No                                     | Yes   |
| Pre/Post - Testing<br>Required                   | No   | No  |  | No  |
| Connectivity Testing<br>Required                 | No   | No  |  | No  |
| Reg SCI Pre Test<br>Contact Information          | BOX Market Operations Center<br>866-768-8845 or<br>boxmoc@boxexchange.com                    | Bats Trade Desk:<br><u>tradedesk@bats.com</u> or<br>913.815.7001  | <u>cmartuscello@chx.</u><br><u>com</u> | Trading Services:<br>212 231 5180   |
| Reg SCI Pre<br>Testing Dates                     | Saturday, September 10, 2016<br>9:00 AM to 1:00 PM EST                                       | Bats DR Site Connectivity<br>Testing Available 24x7   |  | 9/10/16; 10/8/16  |
| Comments on Reg<br>SCI Pre Testing               | Only Participants connected to<br>the<br>NY10 POP will be able to<br>connect to the DR site. | Bats DR site allows for Members<br>to perform connectivity testing<br>with assigned DR sessions 24x7.<br>Application level connections with<br>heartbeat support is also<br>available in DR during normal<br>trading hours. |  | Nasdaq DR systems in Chicago<br>are active during normal trading<br>hours M-F. Customers can test<br>connectivity during these times or<br>on the advertised Saturday UAT<br>dates. |
| Reg SCI Post<br>Testing Dates                    |  |   |  | 11/5/16   |
| Comments on Reg<br>SCI Post Testing              |  |   |  | Nasdaq DR systems in Chicago<br>are active during normal trading<br>hours M-F. Customers can test<br>connectivity during these times or<br>on the advertised Saturday UAT<br>dates. |



# **Other Considerations**

#### Connectivity

• SCI entities to work with participating members to define communication protocols in-scope

### Orders

• Average number of shares is used with a minimum of 2 orders (no max)

### Registration

- The 2016 Regulation SCI BC/DR test is distinct from the classic SIFMA BC/DR test
- Registration to the 2016 Regulation SCI BC/DR test is done through the SCI entities

### **Success Criteria**

 DTCC has outlined the capabilities, designee activity and evidence for inbound and outbound activity with FICC, NSCC, DTC and Omgeo which will be used to determine whether testing has been successful (see chart on Page 20)





# **Other Consideations: DTCC Success Criteria**

| COLD-MAN   |  | Inbound to DTCC*  |  |  | outbound from DTCC   | 5  | Criteria   |
|------------|--|---|--|--|--|--|--|
| SCI Entity | Capabilities   | Designee Activity   | Evidence   | Capabilities   | Designee Activity  | Evidence   | criteria   |
| FICC       | FICC will enable the<br>following capabilities<br>for data submission:<br>• Web Interface<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface           | Designees to submit<br>trade input using one<br>of the following<br>interfaces:<br>• Web Interface<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface | FICC will submit<br>evidence of the trade<br>input status using the<br>web interface.                          | FICC will enable the<br>following capabilities<br>for data inquiry:<br>• Web Interface<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface                          | Each designee can confirm their<br>capability in one of 2 ways:<br>1. Receipt of automated machine<br>readable output from FICC, or;<br>2. Verification of FICC data<br>processing through the FICC<br>Web Interface, File Interface,<br>or MQ interface.              |  | Firms are able to<br>submit evidence for<br>successful receipt of<br>1 Input and 1 output<br>transaction |
| NSCC       | NSCC will enable data<br>submission through<br>FIX   | Designees to send<br>inputs using FIX<br>interfaces   | Each designee will<br>need to submit<br>evidence (Screenshots)<br>for inputs being sent to<br>NSCC / Exchanges | NSCC will enable the<br>following capabilities<br>for data inquiry:<br>• Web Interface<br>(Settlement)<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface<br>• FIX | Each designee can confirm their<br>capability in one of 2 ways:<br>1. Receipt of automated machine<br>readable output from NSCC,<br>or;<br>2. Verification of NSCC data<br>processing through the<br>Settlement Web Interface, File<br>Interface, FIX or MQ interface. | Each designee will need to submit<br>evidence for at least one of the<br>following:<br>1. Screen shot of the receipt<br>date/time of the message or file<br>sent by NSCC to the designee; or;<br>2. Screen shot of pre and post data<br>processing for the test transaction  | Firms are able to<br>submit evidence for<br>successful receipt of<br>1 Input and 1 output<br>transaction |
| DTC        | DTC will enable the<br>following capabilities<br>for data submission:<br>• Web Interface<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface            | Designees to send<br>inputs using one of the<br>following interfaces:<br>• Web Interface<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface           | evidence (Screenshots)   | DTC will enable the<br>following capabilities<br>for data inquiry:<br>• Web Interface<br>• File Interface<br>(FTP/NDM)<br>• MQ Interface                           | Each designee can confirm their<br>capability by validating the<br>settlement figures through: the<br>Settlement Web Interface, File<br>Interface, or MQ interface.  | Each designee will need to submit<br>evidence for at least one of the<br>following:<br>1. Screen shot of the receipt<br>date/time of the message or file<br>sent by DTC to the designee; or;<br>2. Screen shot of pre and post data<br>processing for the test transaction   | Firms are able to<br>submit evidence for<br>successful receipt of<br>1 Input and 1 output<br>transaction |
| Omgeo      | Omgeo will enable the<br>following capabilities<br>for data submission:<br>• Web Interface<br>• File Interface<br>(CCF/MTI)<br>• MQ Interface<br>• FIX | Designees to send<br>inputs using one of the<br>following interfaces:<br>• Web Interface<br>• File Interface<br>(CCF/MTI)<br>• MQ Interface<br>• FIX  | evidence (Screenshots)   | Omgeo will enable the<br>following capabilities<br>for data inquiry:<br>• Web Interface<br>• File Interface (CCF,<br>MTI)<br>• MQ Interface<br>• PTS               | Each designee can confirm their<br>capability in one of 2 ways:<br>1. Receive automated machine<br>readable output from Omgeo,<br>or;<br>2. Validate the matched trade<br>through: the Web Interface,<br>File Interface, MQ interface or<br>PTS.                       | Each designee will need to submit<br>evidence for at least one of the<br>following:<br>1. Screen shot of the receipt<br>date/time of the message or file<br>sent by Omgeo to the designee; or;<br>2. Screen shot of pre and post data<br>processing for the test transaction | Firms are able to<br>submit evidence for<br>successful receipt of<br>1 Input and 1 output<br>transaction |



### **SIFMA Classic Test**

 Detailed documentation on the SIFMA classic test is posted on the SIFMA website at: <u>www.sifma.org/Services/BCP/Industry-Testing/</u>

### BATS

 BATS Reg SCI BC/DR Testing requirements are posted at: <u>http://cdn.batstrading.com/resources/schedule\_update/2016/Update-Bats-2016-Disaster-Recovery-Data-Center-Test-Plan.pdf</u>

### BOX

 BOX's Reg SCI BC/DR Testing requirements are posted at: <u>http://boxoptions.com/assets/IC-2016-21-2016-SIFMA-Industry-Wide-BCP-Test.pdf</u>

### СНХ

- Detailed documentation on the Reg SCI and SIFMA tests is posted on the CHX website at:
- <u>http://www.chx.com/notices/customer-service/</u>

### FINRA

• FINRA's test scripts are confidential and will only be shared with FINRA's designated participants

### IEX

- Detailed documentation on the Reg SCI test is posted on the IEX website at: <u>https://www.iextrading.com/trading/alerts/2016/044/</u>
- Detailed documentation on the SIFMA test is posted on the IEX website at: <u>https://www.iextrading.com/trading/alerts/2016/019/</u>



### MIAX

 MIAX Reg SCI BC/DR Testing Requirements are posted at: <u>http://www.miaxoptions.com/view/alert/198944</u>

### NASDAQ

 Detailed documentation on the SIFMA test is posted on the Nasdaq website at: <u>http://www.nasdaqtrader.com/MicroNews.aspx?id=ERA2016-8</u>

### NYSE

 NYSE Reg SCI BC/DR Testing Requirements are posted at: <u>https://www.nyse.com/publicdocs/nyse/notifications/trader-</u> <u>update/NYSE\_Group\_Reg\_SCI\_Testing\_Notice\_July\_2016.pdf</u>

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- OCC published the following Reg SCI publications:
  - 38688 Securities Industry Business Continuity Test
  - 39160 2016 OCC SIFMA/FIA BC/DR Industry Test Schedule & Scope
  - 39634 OCC SIFMA/FIA BC/DR Industry Test Schedule & Scope http://www.optionsclearing.com/clearing/clearing-infomemos/infomemos1.jsp



# Appendix





# CBOE / CBOE C2 – Product List for Backup Data Center Test

| CBOE                               |      |       |        |              |                   | CBOE C2                            |      |       |        |              |                   |
|------------------------------------|------|-------|--------|--------------|-------------------|------------------------------------|------|-------|--------|--------------|-------------------|
| Security<br>Identifier<br>(Symbol) | Year | Month | Strike | Call/<br>Put | Expiration<br>Day | Security<br>Identifier<br>(Symbol) | Year | Month | Strike | Call/<br>Put | Expiration<br>Day |
| TSLA                               | 2016 | DEC   | 305    | C/P          | 16                | TSLA                               | 2016 | DEC   | 305    | C/P          | 16                |
| VIX                                | 2016 | NOV   | 15     | C/P          | 16                | AAPL                               | 2017 | JAN   | 90     | C/P          | 20                |
| SPXW                               | 2016 | OCT   | 2050   | C/P          | 31                | NKE                                | 2017 | JAN   | 60     | C/P          | 20                |
| AAPL                               | 2017 | JAN   | 90     | C/P          | 20                | FMC                                | 2017 | JAN   | 50     | C/P          | 20                |
| NKE                                | 2017 | JAN   | 60     | C/P          | 20                | HXL                                | 2016 | DEC   | 45     | C/P          | 16                |
| FMC                                | 2017 | JAN   | 50     | C/P          | 20                | MIC                                | 2017 | JAN   | 75     | C/P          | 20                |
| HXL                                | 2016 | DEC   | 45     | C/P          | 16                | MHK                                | 2017 | FEB   | 165    | C/P          | 17                |
| MIC                                | 2017 | JAN   | 75     | C/P          | 20                | SNA                                | 2016 | DEC   | 135    | C/P          | 16                |
| MHK                                | 2017 | FEB   | 165    | C/P          | 17                | VAL                                | 2018 | JAN   | 100    | C/P          | 19                |
| SNA                                | 2016 | DEC   | 135    | C/P          | 16                | WES                                | 2017 | FEB   | 50     | C/P          | 17                |
| VAL                                | 2018 | JAN   | 100    | C/P          | 19                | ATNM                               | 2017 | FEB   | 5      | C/P          | 17                |
| WES                                | 2017 | FEB   | 50     | C/P          | 17                | BTX                                | 2016 | DEC   | 5      | C/P          | 16                |
| ATNM                               | 2017 | FEB   | 5      | C/P          | 17                | CQP                                | 2016 | DEC   | 32     | C/P          | 16                |
| BTX                                | 2016 | DEC   | 5      | C/P          | 16                | HLTH                               | 2017 | FEB   | 5      | C/P          | 17                |
| CQP                                | 2016 | DEC   | 32     | C/P          | 16                | NSU                                | 2016 | DEC   | 5      | C/P          | 16                |
| HLTH                               | 2017 | FEB   | 5      | C/P          | 17                | ONVO                               | 2017 | FEB   | 4      | C/P          | 17                |
| NSU                                | 2016 | DEC   | 5      | C/P          | 16                | APH                                | 2017 | JAN   | 55     | C/P          | 20                |
| ONVO                               | 2017 | FEB   | 4      | C/P          | 17                | COG                                | 2018 | JAN   | 20     | C/P          | 19                |
| APH                                | 2017 | JAN   | 55     | C/P          | 20                | HALO                               | 2018 | JAN   | 25     | C/P          | 19                |
| COG                                | 2018 | JAN   | 20     | C/P          | 19                | JACK                               | 2016 | DEC   | 80     | C/P          | 16                |
| HALO                               | 2018 | JAN   | 25     | C/P          | 19                | LJPC                               | 2016 | DEC   | 22.5   | C/P          | 16                |
| JACK                               | 2016 | DEC   | 80     | C/P          | 16                | NSM                                | 2017 | JAN   | 10     | C/P          | 20                |
| LJPC                               | 2016 | DEC   | 22.5   | C/P          | 16                | PANW                               | 2016 | DEC   | 100    | C/P          | 16                |
| NSM                                | 2017 | JAN   | 10     | C/P          | 20                | RMBS                               | 2017 | JAN   | 8      | C/P          | 20                |
| PANW                               | 2016 | DEC   | 100    | C/P          | 16                | VNDA                               | 2016 | DEC   | 15     | C/P          | 16                |
| RMBS                               | 2017 | JAN   | 8      | C/P          | 20                |                                    |      |       |        |              |                   |
| VNDA                               | 2016 | DEC   | 15     | C/P          | 16                |                                    |      |       |        |              |                   |

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# **Regulation SCI Rule requirements**

- An SCI entity's BC/DR plan, including its backup systems, each SCI entity shall: (a) establish standards for the designation of those members or participants that the SCI entity reasonably determines are, taken as a whole, the minimum necessary for the maintenance of fair and orderly markets in the event of the activation of such plans; (b) designate members or participants pursuant to the standards established and require participation by such designated members or participants in scheduled functional and performance testing of the operation of such plans, in the manner and frequency specified by the SCI entity, provided that such frequency shall not be less than once every 12 months; and (c) coordinate the testing of such plans on an industry- or sector-wide basis with other SCI entities [Regulation SCI Rule 1004 and FAQs]
- Conduct the **initial functional** and **performance testing** of **BC/DR plans** with designated members or participants no later than November 2, 2016 [Regulation SCI FAQs]
- SCI entities are not required to conduct all functional and performance testing at once and in coordination with other SCI entities all at the same time.... if, to meet the requirements of the rule, a single annual test cannot be properly conducted, SCI entities have flexibility to design their testing to include, for example, weekend testing and testing in segments over the course of a year [SCI Adopting Release and FAQ's]

