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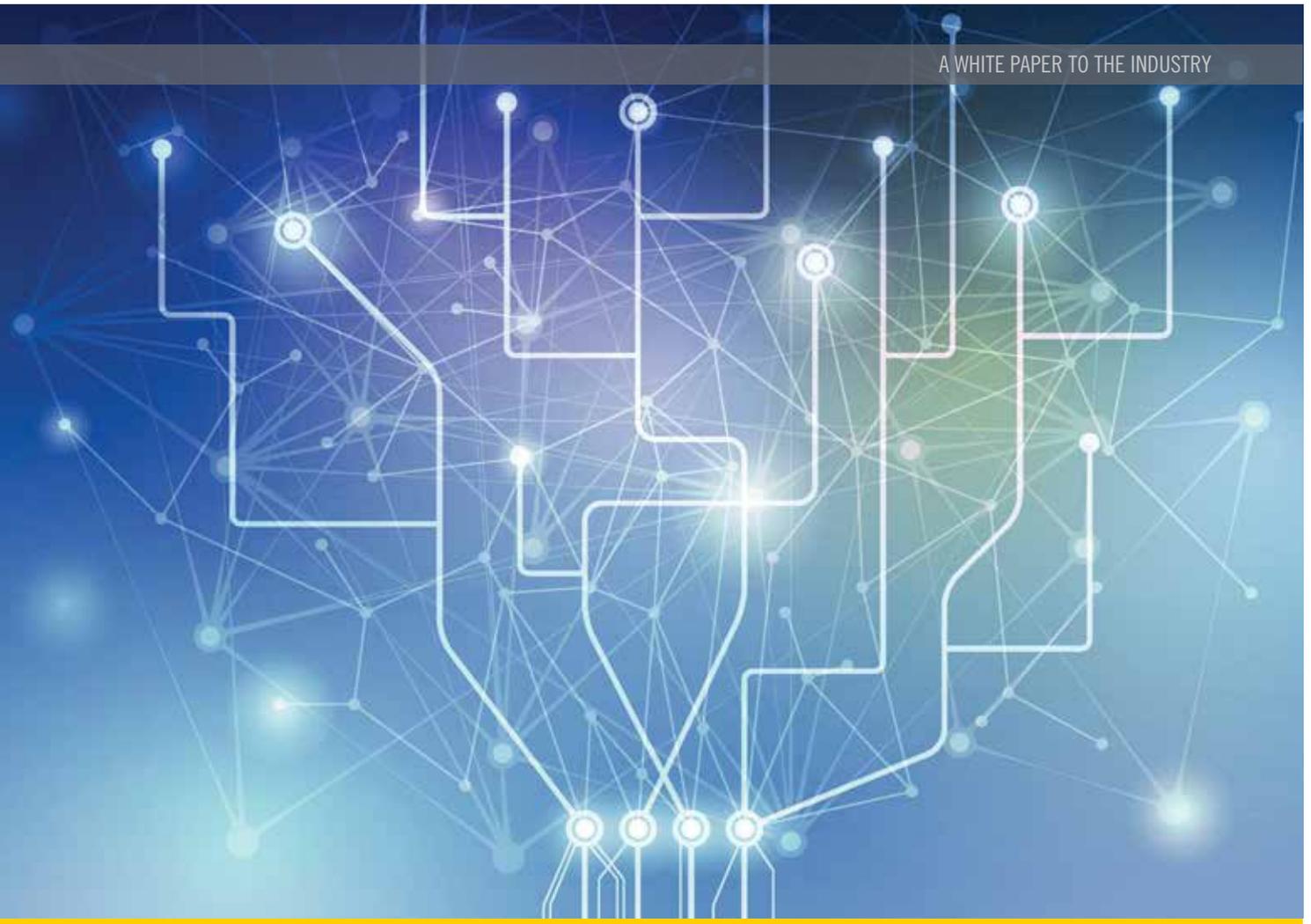
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FEBRUARY 2016

T+2 TEST APPROACH

DTCC's High-Level Testing Framework

A WHITE PAPER TO THE INDUSTRY





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INTRODUCTION

The financial services industry, in coordination with regulators, is planning to shorten the settlement cycle for equities, corporate bonds, municipal bonds, unit investment trusts, and financial instruments comprised of these security types (e.g. ADRs, ETFs), from the current trade date plus three business days (T+3) to trade date plus two business days (T+2) on September 5, 2017.

A shorter settlement cycle will foster a reduction of risk by moving trades more quickly to settlement, thereby reducing credit and counterparty risk and leading to more efficient use of capital. A shortened cycle may also reduce the liquidity requirements of DTCC's central counterparty subsidiary, National Securities Clearing Corporation (NSCC), with a potential reduction in liquidity costs.

Shortening the settlement cycle will align the U.S. market with many other markets globally that have already completed a move to T+2 (European Union, Hong Kong and South Korea) or that plan to move to a T+2 settlement cycle (Australia, Canada and Japan).

Shortening the settlement cycle also provides significant benefits for individual investors. The move to T+2 will not only reduce risk and bring a greater sense of confidence in the safety of the U.S. securities markets, but it will also enable individual investors to have quicker access to capital and securities following a trade execution.

Background

In June 2015, the T+2 Industry Steering Committee (ISC) published an extensive [T+2 requirements whitepaper](#)¹, outlining the steps required for the industry to move to a T+2 settlement cycle. Following the publication of the requirements whitepaper, the ISC identified two specific workstreams: the first was a workstream dedicated to the development of an industry implementation plan, and the second was a workstream dedicated to the development of an industry test approach.

As part of the first workstream, the ISC engaged Deloitte & Touche LLP and in December 2015, published [a detailed industry implementation playbook](#)², including an implementation schedule with milestones and dependencies.

As part of the second workstream, developing the test approach, the industry formed a testing group comprised of industry members from all impacted market segments. This test working group met regularly throughout the later part of 2015, and the results of the testing workstream are captured in this document.

1 Available on the UST2.com web site at: <http://www.ust2.com/pdfs/ssc.pdf>

2 Available on the UST2.com web site at: <http://www.ust2.com/pdfs/T2-Playbook-12-21-15.pdf>

Industry Dependencies

The move to a T+2 settlement cycle will impact organizations across the financial services industry, and will require changes throughout the trade processing lifecycle to shorten the settlement cycle from three to two days.

Impacted market participants include issuers, asset managers ('40Act and non-'40Act funds), broker-dealers (retail and institutional), global custodians, service bureaus, transfer agents, exchanges, clearing firms and market infrastructures.

The test working group identified three specific test processes that will be required for firms moving to T+2. The test processes include:

- Internal system testing
- Testing with customers and other stakeholders
- Testing with industry infrastructures and utilities

Each organization's internal testing, and testing with customers and stakeholders, is viewed as member-specific testing and will likely vary from firm to firm. As such, internal testing, and testing with customers and stakeholders is not addressed in this industry test approach paper. Instead, this paper outlines how testing with industry infrastructures and utilities, primarily DTCC subsidiaries — NSCC, DTC and Omgeo — will be structured. As outlined further in this document, this paper should be used by members and clients of these entities to begin aligning their test systems with NSCC, DTC and Omgeo to prepare for industrywide testing in early 2017.

DTCC's Subsidiary Businesses

NSCC, DTC and Omgeo support much of the post-trade infrastructure in the U.S. As a result of the central roles performed by these DTCC subsidiaries in U.S. post-trade processing, a large part of the industry test will involve testing with NSCC and DTC members and Omgeo clients. Subsequently, much of this document is devoted to the testing that will be done between DTCC and those members and client firms. These businesses include:

- The National Securities Clearing Corporation (NSCC) – NSCC provides clearing, settlement, risk management and central counterparty services for virtually all broker-to-broker trades involving equities, corporate and municipal debt, exchange-traded funds, and unit investment trusts in the United States.
- Omgeo³ – DTCC's full-service Straight-Through Processing (STP) subsidiary, automates the institutional post-trade lifecycle between 6,500 financial services firms in 52 countries.
- The Depository Trust Company (DTC) – DTC provides custody of securities certificates and other instruments, and settlement and asset services for types of eligible securities including, among others, equities, warrants, rights, corporate debt and notes, municipal bonds, government securities, asset-backed securities, depositary receipts and money market instruments.

³ At the time this paper was written, the only matching platform with direct interfaces into NSCC/DTC is Omgeo. As such, Omgeo processes and systems are often referenced throughout this paper. When/if other institutional matching providers develop a direct interface to NSCC/DTC, they will be subject to the same cutoffs and requirements as Omgeo, and will be included in the industry test.

Assumptions, Scope and Implementation

For those firms that opt to participate in industrywide T+2 testing, this document specifically outlines the testing requirements from NSCC, DTC and Omgeo for impacted organizations and instruments. This document does not outline how organizations should conduct their own internal testing or how firms should test with their own customers or other stakeholders.

The testing assumptions, what is in or out of scope, and other details are provided in this document to help firms develop their own test plans and assess preparedness for a shortened settlement cycle. Current testing assumptions and test approach are based on Industry Testing Working Group discussions and feedback received thus far.

Timely escalation of risks, issues, and decisions will be critical in order to meet the milestones necessary to be prepared for a T+2 migration on September 5, 2017.

DTCC welcomes client feedback on this Testing Framework. Please contact us with questions and comments at ust2@dtcc.com.

INDUSTRY TESTING ASSUMPTIONS

It is important for clients to note that T+2 testing will not be mandated. However DTC and NSCC member firms will be requested to certify their T+2 readiness prior to implementation of T+2.

As previously noted, this document is a high-level test approach, and outlines how the test will be structured and the scope of the test. This document is not a detailed test script, nor is it specific test plans.

A more detailed test plan document will be developed by the industry by the end of Q2 2016 and, like this document, will be shared widely with the industry.

Testing Environment

DTCC will utilize its existing test environment for T+2 industry testing. This test environment will support all NSCC, DTC and Omgeo T+2 industry testing requirements.

Given the duration of the T+2 test and the scope of the T+2 changes, DTCC has decided to establish a second T+3 test environment, to operate in parallel with the T+2 test environment. To minimize the work required for members to connect to a new DTCC test environment, the existing DTCC environment will be modified to support T+2 testing. Only members looking to test functionality in a T+3 environment during the T+2 testing period will need to connect to the new DTCC T+3 test environment.

- Members looking to test only T+2 functionality will not need to reconnect to DTCC's test environment, however members are encouraged to review their existing test interfaces with NSCC, DTC, and/or Omgeo (as applicable) to ensure they can adequately support T+2 testing. Members should engage with DTCC as early as possible if additional interface access is required.
- The current assumption is that one or more trading venues (e.g.: exchanges) will participate in T+2 testing and connect to NSCC's test environment. Their participation will be required to allow firms to conduct full end-to-end testing. DTCC is actively working with various trading venues to ensure their participation in the industry T+2 test, and to define the details of how exchange testing will be performed.

Timeframe and Process

The following assumptions about DTCC's testing process and timeframe should be taken into consideration:

- T+2 industry testing will take place over an approximate six-month period (through Q2 and Q3 of 2017).⁴
- End-to-end testing capability will be supported, allowing firms to test the full trade lifecycle from their internal pre-execution systems to DTC post-trade settlement. As previously noted, end-to-end testing assumes trading venues are willing and able to participate in the industry T+2 test.
- Testing will occur during regular business days, and during regular business hours (i.e., no weekend testing).
- Test processes will have defined time schedules and cut-offs, and will utilize T+2 modified input and output formats should any be developed.⁵

⁴ Based on feedback from members, DTCC is exploring opening the T+2 test in Q1 of 2017 to allow members additional time to test.

⁵ Some processes and outputs in the test environment may run on a modified production time schedule to facilitate participant testing during regular working hours. Time schedules for testing will be defined in the industry test document, which will be distributed in Q2 2016.

- DTCC will support “Scripted” and “Ad-hoc/free-form” testing (test plans to be defined by the industry testing group and scheduled to be distributed in Q2 2016).
- DTCC will assign specific securities (CUSIPs) to create various scripted test conditions. This will include:
 - Test CUSIPs across various product types, e.g., equities, corporate bonds, muni bonds, ETFs, etc.
 - CNS and non-CNS eligible CUSIPs (multilateral guaranteed, bilateral, trade-for-trade)
 - CUSIPs undergoing various corporate actions events
 - CUSIPs that will settle in DTC (‘Made’) and CUSIPs that will fail in DTC due to insufficient positions (‘Fail’)
- DTCC will continue to work with the industry to plan testing of T+2 implementation/double settlement date scenario⁶.
- DTCC will provide applicable production inputs and outputs in the test environment.
 - DTCC will work closely with members to ensure appropriate test environment input and output configuration.
- Firms will establish connectivity to NSCC, DTC, and/or Omgeo and other required entities (e.g. exchanges) in advance of industry testing.
- The framework for testing of institutional transactions will be applicable to any trade matching platform that interfaces directly with DTC and NSCC at the time the test is being conducted.

⁶ The “double settlement date scenario” is defined as trades submitted on the last trade date of the T+3 settlement cycle and the first trade date of the T+2 settlement cycle, which will settle on the same day.

INDUSTRY TESTING – IN SCOPE CONSIDERATIONS

In scope testing includes trade execution via one or more trading venues (e.g. exchanges), trade capture, trade clearing and trade matching of fixed income securities at NSCC, institutional trade matching, allocation processing as well as Confirm/Affirm processing in Omgeo and trade settlement in DTC. More specifically, in scope processes include:

Trade Execution, and Trade Capture and Clearing at NSCC

The move to T+2 will have a minimal impact on trade execution. However, many firms have expressed an interest in executing test transactions via an existing trading venue as a way to conduct full end-to-end testing of internal systems. (As previously noted, this test approach assumes at least one trading venue participates in the industry test.)

The move to T+2 will impact NSCC's processes related to trade capture and the calculation of the equity trade settlement date. As such, the industry test will include:

- Trade execution of equity securities on one or more trading venues, prior to the trade being submitted to NSCC
- NSCC trade capture processing
- Exchange Traded Funds (ETF) creates/redeems
- Trades matching of Corporate Bonds, Municipal Bonds and UITs (CMU) securities in NSCC's RTTM system
- Prime broker trade input from institutional trade matching providers
- NSCC trade clearing
- Staging CNS obligations and other settling obligations in DTC for settlement
- CNS dividend and corporate action processing
- All applicable NSCC output

Institutional Trade Matching (Omgeo Processing)

The move to T+2 impacts the timing of institutional trade matching to take advantage of the Straight-Through Process (STP) where matched trades are submitted directly to NSCC/DTC for settlement. As such, the industry test will include:

- Institutional Trades, including ID Net-eligible trades, prime broker trades and non-ID Net institutional trades (PDQ)
- Allocation processing between Brokers and Institutions
- End-to-end testing capabilities, including trade input, affirmation, allocation, matching and submission to DTC for settlement
- All applicable institutional Confirmation and Report output

Trade Settlement (DTC Processing)

The move to T+2 will have minimal impact on DTC processing. However, in order to support full end-to-end testing, the industry test will include:

- Processing and settlement of NSCC and Omgeo direct trade input in DTC
- Processing of participant trade input via Deliver Order (DO) and night DO
- DTC settlement including “Made” and “Fails”
- DTC’s Receiver Authorized Delivery (RAD) and Inventory Management System (IMS) will be supported in the test environment. DTC will copy over each Member’s RAD and Deliverer Authorization profiles from the production to the test environment; Members will have the option to re-configure their profiles in the test environment, as needed.
- All applicable DTC output

INDUSTRY TESTING – OUT OF SCOPE CONSIDERATIONS

While much of the functionality will exist in the test environment, the following NSCC/Omgeo/DTC transaction types, processes and functions are considered out of scope for testing because there is no T+2 impact.

Some of these transaction types, processes and functions may be available in the test environment for regression testing, but will not be supported and monitored by DTCC.

Trade Execution, and Trade Capture and Clearing at NSCC:

- Automated Customer Account Transfer Service (ACATS)
- Envelope Settlement Service
- Fund/SERV transactions⁷
- Obligation Warehouse
- Priorities
- Exemptions
- SMART/Track for CNS Corporate Actions

Omgeo functionality and reporting:

- Confirm Archive
- Confirm Disclosure (inSITE)
- Analytics
- End of day reports

DTC Transaction Types:

- Payment Order (Security and Premium)
- Pledge/Pledge Release (Retail, OCC, Federal Reserve)
- Segregation/Segregation Release (includes Seg-100)
- Investment ID/Investment ID Release
- Memo Segregation
- Collateral Movement — Minimum Amount (MA) and Net Addition (NA)

⁷ Fund/SERV users have existing capability to test any change to settlement period for Fund/SERV transactions; no new testing functionality is needed for T+2.

DTC Functionality and Processes:

- DTC's Fund Settlement (NSCC-DTC cross-endorsement and Fedwire instructions)
- SMART/Track for Buy-ins
- SMART/Track for Corporate Actions Liability Notices

DTC-NSCC Risk Controls and related outputs, which includes:

- NSCC Clearing Fund
- DTC Debit Cap
- DTC Collateral Monitor

TRADE VENUE PARTICIPATION

As previously noted, the move to T+2 will have a minimal impact on trade execution and trade venue processing. However, the assumption is that trade execution venues will participate in the test and that firms will be able to test transactions end-to-end, including their own trade execution systems and internal trade routing and reconciliation processes.

- Test transactions can be submitted by firms to the trading venues for execution. Transactions executed on the trading venues will be reported back to participating NSCC Members from the trading venues and reported to NSCC's Universal Trade Capture (UTC) application in the test environment. UTC will assign the appropriate settlement date for these transactions. As noted later in this paper, NSCC will report transactions to Members as they are received from the trading venues, allowing Members to reconcile transactions executed with transactions reported by NSCC.
- NSCC Members should not require testing across all trading venues, and firms should be able to satisfy their trade execution testing needs utilizing any of the trading venues that elect to participate in the T+2 industry test.
- NSCC Members that are broker-dealers (BDs) electing to test trade execution will connect to the test environment of at least one of these T+2 designated trading venues.
- CUSIPs eligible on each T+2 designated trading venues are still under consideration.
- Participating BDs will submit trades to trading venues' test environment as they would in production.
- Trading venues will match BD execution orders. Matching process will be agreed with each designated trading venue and will likely entail either of the following two scenarios:
 - The use of "dummy" counterparties established by a trading venue and used as the counterparty for each order.
 - The use of actual counterparties trading in the same securities on the same platform. (This approach will require industry coordination to ensure there are sufficient execution orders to allow orders to match for further processing.)
- Designated venues will provide applicable trade output.

NSCC TRADE CAPTURE

NSCC's trade capture processing will be supported in the test environment. NSCC will receive test equity transaction output from the participating trading venues and will report the test transactions to Members for reconciliation.

NSCC will also create a test transaction upload feature for Members that do not want to submit test transactions through a designated trading venue. The NSCC test transaction upload feature will allow Members to create test transactions that NSCC will then introduce into its test system. Details of the NSCC test transaction upload feature will be provided at a later date. Once these transactions are processed into the NSCC test system, they will be subject to all applicable downstream processing outlined in this document.

In addition to trading venue input and transaction input via the NSCC test transaction upload feature, NSCC's trade capture system also receives transaction input from a number of other front-end systems. These systems, described in more detail below, will also be part of the T+2 test. NSCC trade capture testing will include:

Qualified Service Representative (QSR) and Correspondent Clearing (CORR Clearing):

- The industry test will support Qualified Service Representative (QSR) and Correspondent Clearing (CORR Clearing) as a way to introduce transactions into the NSCC's trade capture system. Members that utilize NSCC's Qualified Service Representative (QSR) and Correspondent Clearing (CORR Clearing) services may submit test transactions to the QSR and CORR Clearing systems in the test environment (Test trades must be between counterparties with an existing 9A/9B relationship status).
- All applicable UTC, QSR and CORR Clearing outputs will be produced from the test environment.

Corporate Bonds, Municipal Bonds, UITs (CMU):

CMU test trades may be submitted bilaterally into the NSCC CMU Real-Time-Trade Management (RTTM) system (or QSR for some UIT trades) in the test environment. Members will be required to identify their own counterparties for testing CMU processing. Test transactions will be subject to the T+2 Trade Match cut-off. Test trades submitted with a T+2 settlement date must be matched in the RTTM by 11:30 am on T+2; CMU will assign a T+3 settlement date to trades that are matched after that cut-off.

- RTTM will route matched transactions to NSCC's UTC application in the test environment for downstream processing.
- MSRB will be participating in the T2 test, so RTTM will also route Municipal Bond trades to MSRB to test trade reporting.
- All existing CMU output will be produced from the test environment.

ETF Creates/Redeems:

- NSCC's ETF system will allow ETF Agents and Authorized Participants to process test ETF create and redeem transactions for processing in the test environment, and transactions processed via the ETF system will be forwarded to NSCC's trade capture system. Designated ETF and component CUSIPs will be established for testing.
- ETF Agents and associated Authorized Participants (AP) will pair-up for testing of ETF Create/Redeem Instructions. Similar to production, the ETF Agent will submit test Create/Redeem instructions and related Portfolio Composition File (PCF) to NSCC's ETF application in the test environment.
- ETF Agents will have the option to submit create/redeem instructions versus a test Counterparty Account at NSCC (in lieu of an actual AP account).
- The ETF application will process these transactions as they are processed in production, and will submit the ETF CUSIP and its underlying components to UTC in the test environment for downstream processing.
- All existing ETF output will be produced from the test environment.

Institutional Trade Processing:

Institutional test trades (including Prime Broker, ID Net-eligible and non-ID Net/PDQ institutional trades) will be bilaterally submitted to Omgeo in the test environment utilizing existing (production) input formats. Matched/Affirmed broker-to-broker institutional trades (Prime Broker trades) will be submitted to NSCC's trade capture system. It should also be noted that firms will be required to find their own testing partners when testing institutional trade matching.

- Omgeo will perform trade eligibility and trade validation checks, as in production.
- Test transactions will be subject to the noon T+1 Trade Affirmation cut-off to benefit from the automated interface to NSCC and DTC⁸.
- Omgeo will automatically route eligible transactions to NSCC's UTC application (Prime Broker Trades) and to DTC (PDQ and ID Net-eligible transactions) in the test environment for downstream processing.
- All existing Omgeo output will be produced from the test environment.

⁸ Some processes and outputs in the test environment may run on a modified production time schedule to facilitate participant testing during regular working hours. Time schedules for testing will be defined in the industry test document, which will be distributed in Q2 2016.

OMGEO INSTITUTIONAL TRADE MATCHING

Institutional Trades (Prime Broker Trades, ID Net-eligible and Non-ID Net/PDQ Institutional trades) will be included in the test.

Firms that elect to test institutional trade matching will need to find a counterparty for testing. Test transactions will be bilaterally submitted to Omgeo in the test environment utilizing existing input formats, with matched/affirmed transactions automatically submitted to NSCC and DTC for processing.

- The following Omgeo systems will be available in the test environment:
 - Omgeo TradeSuite ID
 - Omgeo Oasys
 - Omgeo Central Trade Manager (CTM)
 - Omgeo ALERT
 - Omgeo Connect
 - SWIFT/TradeHub
- The following Omgeo production processes will be replicated in the test environment:
 - Trade Validation
 - Matching
 - Trade Eligibility Checks
 - Trade Affirmation Routing eligible trades to DTC (PDQ and ID Net-eligible transactions) or to NSCC (Prime Broker trades)
 - All Interactive Confirm Distribution
- Test transactions will be subject to the noon T+1 Trade Affirmation cut-off to benefit from the automated interface to NSCC and DTC⁹.
- Affirmed transactions will be routed to DTC/NSCC for downstream processing.
- Omgeo will enable all applicable production outputs in the test environment. This includes:
 - Confirm distributions in real-time and in the format that clients elect in the test environment
 - The Cumulative Eligible Trades Report

⁹ Some processes and outputs in the test environment may run on a modified production time schedule to facilitate participant testing during regular working hours. Time schedules for testing will be defined in the industry test document, which will be distributed in Q2 2016.

NSCC TRADE CLEARING

NSCC's trade clearing will basically be unchanged by the move to T+2. However, to allow for full end-to-end testing, NSCC will enable all relevant clearing functionality and processes in the test environment. As in production, NSCC Clearing will route trades in the test environment to DTC for Settlement processing.

Information in the test environment will flow from NSCC Trade Capture as Intra-day UTC and ETF output. The Consolidated Trade Summary (CTS) will be produced in test and denote the CNS and Non-CNS activity.

Non-CNS clearing activity (Multilateral Guaranteed, Bilateral, Trade-for-Trade activity) will be processed as it is in the current trade life cycle.

CNS activity that should be considered for testing clearing functionality:

- CNS outputs;
 - CNS Projection Report/File
 - New (Supplemental) CNS Projection Report/File issued in the early afternoon (Important Notice will describe more details)
 - Position prior to Night Cycle
 - Position Prior to Day Cycle
 - Preliminary & Final Cash Reconciliation
 - Accounting Summary
 - Night & Day Miscellaneous Activity
 - Night & Day Settlement Activity Statement
- Dividend Accounting
- CNS Money Settlement

As previously noted, DTCC will establish CUSIPs that are CNS and non-CNS eligible (Multilateral Guaranteed, Bilateral, Trade-for-Trade) for use in the NSCC clearing tests.

DTC TRADE SETTLEMENT

DTC settlement processing will be included in the test. The DTC test environment will be configured to replicate the existing production environment.

DTC T+2 testing will include:

- DTC Night and Day settlement cycles will be available in the test environment for direct member input and settlement processing.
- Production processes will be replicated in the test environment as per defined time-schedules and cut-offs¹⁰.
- Members can submit Night and Day DO instructions in the test environment utilizing existing input formats.
- NSCC and Omgeo test transactions will be received by DTC and processed in the test environment as well as Member's Night and Day DO input.
- ID Net processing will be supported in the test environment.
- DTC will establish certain CUSIPs with security positions and certain securities without securities position to allow transactions to settle ("made") and fail at DTC.
- The test system will be configured so that transactions do not pend for DTC's risk management controls.
- Existing DTC inventory management tools, e.g. RAD and IMS, will be supported in the test environment.
 - DTC will copy Member's RAD and Deliver Authorization profiles from the production to the test environment; Members will have the option to re-configure their profiles in the test environment as needed
- DTC Funds Settlement is out of scope.

Settlement Output

All settlement output will be available in the test environment, and firms have the ability to subscribe to the output. It will include:

- Settlement Transaction Messages including Night and Day DO outputs (Proprietary and ISO)
- RAD Messages (Proprietary and ISO)
- DTF Part
- DROP Messages (Proprietary and ISO)

¹⁰ Some processes and outputs in the test environment may run on a modified production time schedule to facilitate participant testing during regular working hours. Time schedules for testing will be defined in the industry test document, which will be distributed in Q2 2016.

ASSET SERVICING – EX-DATE CALCULATION

The move to T+2 will change the process for calculating Ex-Dates related to certain mandatory corporate events. These new processes will be supported in the test and will include testing of “Regular-Way” Ex-Date and “Irregular-Way” Ex-Date calculations and processing.

Ex-Date testing will include:

- Organizations that drive the creation of Ex-Date (organized securities exchanges, and agencies such as FINRA) will:
 - Test required changes to their internal systems responsible for calculating/assigning “Regular Way” Ex-Date (Record Date -1 business day) and “Irregular-Way” Ex-Date (date other than Record Date -1 business day)
 - DTCC will work with organizations that drive the creation of Ex-Date to provide test output to all relevant entities (DTC, Service Providers, Individual firms) that consume the ex-date in order to facilitate downstream/end-to-end testing of Corporate Action processing for ex-date changes
- DTC and NSCC will test required changes to its internal systems with regards to both “Irregular Way” and “Regular-Way” Ex-Dates. In addition, DTC and NSCC will support full lifecycle regression testing of Corporate Action processing, which will include testing:
 - Ex-date feeds from exchanges/outside source to ensure announcement capture processes are recognizing the updated date.
 - Position capture processes to ensure proper functioning of internal systems.
 - Interim accounting processes to verify proper functioning of interest/principal entitlements and all income tracking processes.
 - All existing corporate action-related ISO 20022 output.

ASSET SERVICING – COVER/PROTECT CHANGES

The move to T+2 will change the process for calculating cover/protect periods related to certain voluntary corporate action events – from current three business days cover/protect period to a two business day cover/protect period after the offer expiration date.

Cover/ Protect periods are generally established by the issuer related to a corporate action event and generally follow the standard settlement cycle. DTC receives cover/protect data from the issuers agents.

The Cover/Protect test will include:

- Agents that automatically calculate cover/protect dates (if any) will test their internal systems for the updated cover/protect period.
- DTC's internal systems logic will not be impacted by change to the Cover/Protect period. However, DTC will regression test the full life-cycle of Corporate Action processing including testing of:
 - Reorganization announcement platform
 - Platform supporting the Participant Tender Offer Program (PTOP) and Participant Subscription Offer Program (PSOP)
 - Transfer- Agent facing Automated Tender Offer Program (ATOP) and Automated Subscription Offer Program (ASOP)
 - All existing corporate action-related ISO 20022 output

ASSET SERVICING – TEST LIFECYCLE

In order to properly test both ex-date and cover/protect changes related to T+2, DTC will process the full lifecycle related to the test corporate action events. This includes announcements of the corporate action events, position capture, allocation and all relative reporting.

The DTC asset servicing lifecycle test will include scripts that will support end-to-end processing, i.e., corporate actions announcement through to Payment Date/allocation.

Corporate action testing will include:

- Designated securities will be established to undergo periodic corporate action events.
- DTC will generate corporate action announcements and communicate the announcements using existing output.
- Industry participants will be encouraged to consume DTC's corporate action output and to process transactions on and around the Ex-date/Record date.
- DTC will generate payment/allocation output and communicate such output using existing output processes.
- Industry participants should reconcile DTC's payment/allocation output to expected test results.
- CA Web will be available for full lifecycle of Distribution event processing (entitlements, instructions, allocations and adjustments).
- Participant Terminal Systems (PTS) / Participant Browser Systems (PBS) with Voluntary Reorganizations functionality will be available.

IMPLEMENTATION PLAN: ATTESTATION OF READINESS AND IMPLEMENTATION DATE RECOMMENDATIONS

The Industry Steering Committee (ISC) is considering a proposal to set a target implementation date and an alternative implementation date, in case the target date is not feasible.

The ISC announced in February at the SIFMA T+2 Symposium 2016 in NYC that a “go live” date, Tuesday, September 5, 2017, has been chosen for implementing the shortened settlement cycle in the U.S. This date meets the primary selection criteria of being between August 2017 and the 3rd week of November 2017 (prior to Thanksgiving) as well as the more detailed selection criteria listed below.

The ISC will assess T+2 preparations and inform the industry on whether or not T+2 can be implemented as scheduled prior to the implementation date.

T+2 Readiness:

As previously noted, testing will not be mandated. Prior to the T+2 implementation date, all NSCC and DTC Members, including those that opt-out of testing, will be asked to certify T+2 readiness for each of their respective individual account(s). The certification process and language are still under development.

Service providers will be asked to certify their T+2 readiness; NSCC and DTC Members utilizing service providers will be asked to provide a separate certification for their own T+2 readiness.

- Buy-side firms will not be requested to certify T+2 readiness. However, custodians that are DTC Members and are part of the buy-side transaction lifecycle, will be requested to certify T+2 readiness.
- DTCC will continue to work with the industry to provide opportunities for the industry to test a double settlement scenario, where trades executed on the last trade day under T+3 and trades executed on the first trade day of T+2 will both settle on the same day.
 - DTCC's existing T+3 test environment will be converted to T+2, providing an opportunity for firms to test double settlement functionality.
 - A subset of prior day's T+3 settling production transactions could be introduced into the T+2 test system. Test trades that will be processed as T+2, and prior day's production trades under the T+3 settlement cycle, will settle on the same day. This exercise would require coordination between DTCC and individual firms

Implementation Date Recommendations

September 5, 2017, the T+2 implementation date, is the Tuesday after the Labor Day weekend. This date was intentionally selected to give firms an extra day to migrate and test code changes.

- With the implementation on Tuesday, September 5, Thursday, September 7 will be a double settlement date. That is, trades from Friday, September 1 and Tuesday, September 5 both settling on Thursday, September 7.
- In choosing the September 5, 2017 implementation date, consideration was given to avoiding quarter ends, month ends, holidays, days with high corporate action and transactional volumes, such as option expiration day.

Monitoring T+2 implementation

- The ISC will establish periodic industry calls before, during and immediately following the T+2 implementation to monitor and resolve any issues.
- The ISC will work with the industry to try to minimize the number of corporate events over the T+2 implementation date. However, any corporate actions in-flight over the implementation period will be closely monitored.

Contingency Plan

- After extensive discussion, the consensus of the industry testing group is that a back-out of T+2 functionality, once implemented, is not feasible and that any problems will need to be corrected by the applicable firm(s), with the industry moving forward with T+2 settlement.

