

T+2 Operations Working Group (OWG)

Agenda

April 13, 2016

2:00 PM Eastern - 11:00 AM Pacific

- | | |
|--|---|
| 1. Approval of the minutes from March 16, 2016 | Michael/Domenic |
| 2. CCMA Website and Industry Event – Update | Keith Evans |
| 3. Asset List Update – To be finalized | Michael/Domenic |
| 4. Industry Testing Strategy – OWG - 001 | Committee Members |
| a. High Level Plan – CDS | Johann Lochner |
| b. High Level Plan – Fundserv | Kyle Bedeau |
| 5. Review of Issue Log | Michael/Domenic |
| 6. Issues to be closed | Committee Members |
| a. Corporate Actions – OWG - 007 | |
| b. NI-24-101 – OWG - 005 | |
| 7. Other Business | |
| 8. Next Meeting | Wednesday May 11, 2016 at 2:00 PM ET/ 11:00 AM PT |

Conference Details

Conference ID: 7312646#

Local Dial-in 416-933-8665 Toll-free Dial-in: 1-888-402-9166

OWG - Minutes

March 16, 2016

Domenic Sgambelluri and Michael Holmes welcomed all attendees to the meeting of the Operations Working Group.

1 Approval of the minutes from February 17, 2016 Michael/Domenic

The minutes of the meeting held on February 17, 2016, were approved as written, by all members of the working group.

2 Mutual Fund sub Working Group (MFSWG) FundServ

Kyle Bedeau gave an update on the work being performed by the Mutual Funds group. He reported that as part of the transition in September 2017, all manufacturers will be required to positively identify the specific funds that will transition to T+2. This will be a large undertaking as there are almost 68,000 funds created by about 400 issuers. Michael Holmes asked what would happen if some do not respond. Kyle responded that there will be about a month to contact the missing responses, and this is adequate time to address any issues. They will be required to provide this direction to FundSERV about a month before the actual transition. He also reported that IFIC will be responsible to deal with all Mutual Fund rule changes. Kyle also reported that there have been initial discussions on testing, which will likely occur as part of the regular FundServ testing window April/May of 2017.

Keith Evans reported that since the issues related to Mutual Funds has little or no overlap with non-Mutual Fund assets, it is time to make the Mutual Funds group a Working Group reporting to the T2SC, and not a sub working group of the OWG. He indicated that this would be recommended to the T2SC at their next meeting.

3 Asset List Update Michael/Domenic

Michael Holmes reported that Asset List is still not complete, but is getting closer. Members were asked to provide any input to Keith Evans ASAP, as it is going to be posted on the CCMA website as early as next week.

4 Industry Testing Strategy – OWG - 001

Committee Members

The proposed Testing Strategy document was distributed with the meeting package. It recommended a mix of mandatory and voluntary testing within the industry. There was a lengthy discussion on the contents and the purpose of testing. In the end, the members accepted the proposal. CDS and FundSERV were requested, and they accepted, to take the lead on developing a high level test plan. They both agreed to have this plan presented at the next meeting of the OWG in April. The vendors agreed that the testing window for FundSERV should be separate from the testing window with CDS, if possible.

Further discussion will need to take place on who will need to be required to perform mandatory testing, and who won't.

5 NI-24-101 – OWG - 005 Discussion

Committee Members

There was a good discussion on the merits of making, or not making changes to this national instrument. The conclusion was that the industry effort should focus on the operational processes of preparing trades for settlement, and the recommendation was not to make changes to the national instrument.

6 Corporate Actions – OWG - 007 Discussion

Committee Members

The topic of corporate actions was discussed at length. The committee concluded that system changes already identified by CDS and FundSERV were suffice. However, the committee recommended that all member firms review internal processes, as well as their vendors, to ensure the overall corporate action activity has been considered.

7 Review of Issue Log

Michael/Domenic

The Issue Log was not reviewed due to a shortage of time.

8 Issues to be closed

Committee Members

There were no issues identified for closure.

9 Other Business

There was no other business raised.

10 Next Meeting**Wednesday April 13, 2016 at 2:00 PM ET/ 11:00 AM PT**

Michael and Domenic thanked everyone for the attendance and discussion on the topics.

List of Attendees

Raymond James	Michael Holmes (Co-Chair)
Northern Trust	Domenic Sgambelluri (Co-Chair)
BCSC	Meg Tassie
Blackrock	William Trieu
BMO	Art Valdes
	Kevin Armstrong
	Rose Stillie
Broadridge Canada	Theresa Blonde
	Angie Fernando
Canaccord	Simon Whitney
	Brenda McIntyre
CanDeal	Joe D'Alessandro
CCMA	Keith Evans
CDCC	Roger Warner
CDS	Johann Lochner
	Laura Ellick
	Anna Guerico
CETFA	Pat Dunwoody
CGI	Margaret Stephens
CIBC Mellon	Louis Lesnika
	Stasha Ninkovic
Citi	Alyse Kefeli
Computershare	Donna McLaughlin
Connor Clark & Lunn	Mark Austin
Cormark	Eileen Conboy
Credit Suisse	Luigi Trentadue
	Wayne Cowel
	Jackie Chan
CST	Tony Iervolino

Dataphile	Jenny Yang
DTCC/Omgeo	Ana Lotharis
Edward Jones	Al Knight
E & Y	Jennifer Andrews
FIS Financial	Dianne Shepherd
	Kerry Lutes
FundServ	Kyle Bedeau
IBM	Amy Li
	Jim Pontikas
London Life	Linda Mosthaf
MD Financial	Allan Riccardi
Morgan Stanley Canada	Dianne Duffy
	Brian Choy
National Bank	Carmelo Scifo
	Natalie Roberge
OSC	Aaron Ferguson
Pershing	Scott Reifer
Questrade	Lulu Feng
Raymond James	Daniel Crean
RBC CM	Brian Calvert
RBC IS	Edward Chow
	Ellen Baitre-Saites
RPM	Allan Grossman
Scotiabank	Frank Jocatis
	Michael Bieley
	Marc Pauze
	Darren Kwok
State Street	Denny Mendonca
TD Waterhouse	Rob Candido
	Brandon Buckley
Transitron	Stan Deudney
UBS	Walker Wentworth
360 Compass	Merici Young

DRAFT - T+2 Asset List

Request for Comments: What investment vehicles are affected by the change to T+2?

Below are, first, a list of investments in Canada with an indication of whether they are expected to be affected by a settlement cycle shortened from three days after trade date (T+3) to T+2 and, second, a U.S. list of only those securities expected to be impacted. We have included both to promote discussion and elicit comments from Canadian investment industry stakeholders as to whether any investment types currently settling on a T+3 basis as a standard in Canada have been omitted or whether any identified may have exceptions. The U.S. list is included as many Canadian market participants also deal in the U.S. and because by taking a different approach to the list, it provides an opportunity for us to test and check our conclusions.

All stakeholders, and in particular service bureaus and vendors, are requested to review this document and to **respond by Friday, May 27, 2016 to info@ccma-acmc.ca with; 1. Questions, 2. Clarifying comments, and 3. Recommendations, so that the list becomes as comprehensive and helpful as possible to help in the transition to T+2.**

Next steps: Comments received will be reviewed by members of the CCMA's Operations Working Group and Mutual Fund Working Group. Following their confirmation of appropriate amendments, the asset list will be republished as 'final' (target: June 30), with the understanding that should any new issues emerge in Canada or the U.S. as industry participants progress towards the T+2 transition, there may be further clarifications needed. As the investment industry knows only too well, 'the devil is in the details'.

Canadian Asset List

The table below is based on a [standard securities taxonomy](#) developed by the members of the Investment Industry Association of Canada (IIAC) for cross-investment-sector use to promote consistent classification of securities in Canada. The CCMA has added two columns to the right: one identifying whether the security will be affected by shortening the standard maximum settlement-cycle from T+3 to T+2 and a second for comments, for example, migration issues to allow us to focus efforts efficiently.

Security Type	Description	Impacted by T+2? Yes/No	Comments
Cash	Cash balances (regardless of currency).	No	
Cashable Guaranteed Investment Certificates	Only liquid GICs (redeemable) are to be included as a cash equivalent.	No	Default settlement of GIC's is T (same day) however parties may agree on delayed settlement conditions.
High-Interest Savings Accounts (HISAs)	It is assumed that all HISAs provide timely liquidity (full or partial).	No	Already T+1 settlement
Money Market Funds	Includes money market exchange-traded funds (ETFs) and money market closed-end funds.	No	Already T+1 settlement
Short-Term Notes	Includes all term notes, bonds or paper where term to maturity from issue date is < 1 year. This includes but is not limited to: Asset-Backed Commercial Paper (ABCP)	No	No change
	Bankers' Acceptances	No	No change
	Certificates of Deposit (CDs)	No	No change
	Commercial Paper (CP)	No	No change
	Treasury Bills (T-bills)	No	No change
	Savings Bonds.	No	No change
Corporate Bonds	Includes corporate bonds/debentures as well as high-yield bonds and capital trust securities where the term to maturity from issue date >= 1 year.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Government Bonds	Includes bonds issued from any form of government including but not limited to the following where term to maturity from issue date >	YES – Federal > 3 years.	Any transaction that currently trades on a T+3 basis will transition to T+2. Current

Security Type	Description	Impacted by T+2? Yes/No	Comments
Asset-Backed Securities	Includes mortgage-backed securities (MBSs) and any other product that attracts a pool factor stemming from an iterative and ongoing return of principal.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Non-Cashable Guaranteed Investment Certificates (GICs)	Any liquid (redeemable) GICs will appear under cash equivalents, and all non-liquid GICs are aligned in this sub-type under Fixed Income.	NO	GIC instruments do not currently trade on a three day settlement basis and therefore are not affected by the transition to T+2.
Strips, Coupons and Residuals	Any interest portion or non-principal-based portion of a bond that can be and is segregated from the initially offered bond product and sold separately.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Preferred Shares	Company stock with dividends that are paid to shareholders before common stock dividends are paid out. In the event of a company bankruptcy, preferred stock shareholders have a right to be paid company assets first. Preference shares typically pay a fixed dividend, whereas common stocks do not. And unlike common shareholders, preference share shareholders usually do not have voting rights.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Convertible Preferred Shares	A preferred share with a convertible feature should remain a preferred share sub-type until (and if) such a time as conversion is exercised, at which point the resulting holding will appear under the proper sub-type for the security now held after conversion.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain

Security Type	Description	Impacted by T+2? Yes/No	Comments
			unchanged.
Common Shares	Industry standard common stock where the unit represents a percent ownership in a corporation.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Equity Funds	Includes: Equity Mutual Funds	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
	Equity ETFs	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
	Equity Closed-End Funds	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
	Equity Index-Replicating Vehicles (IRVs)	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Rights	A certificate that permits the owner to purchase a	YES	Any transaction that currently

Security Type	Description	Impacted by T+2? Yes/No	Comments
	certain number of shares, or, frequently, a fractional share of new stock from the issuer at a specific price.		trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Warrants	A derivative security that gives the holder the right to purchase securities (usually equity) from the issuer at a specific price within a certain time-frame.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Units	Represents products sold as a 'unit', which includes bundled stock and warrants, etc.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Trust Units	All units structured under a trust deed but excluding real estate investment trusts (REITs) as they are reported under a unique sub-type.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Limited Partnership Units (LPUs)	An ownership unit in a publicly traded limited partnership, or master limited partnership (MLP) that provides the unitholder with a stake in the income generated by the partnership company.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current 'special terms' trades (other than T+3) will remain unchanged.
Instalment Receipt	An equity issuance in which the purchaser does not pay the full value of the issue upfront. In the purchase of an instalment receipt, an initial payment	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current

Security Type	Description	Impacted by T+2? Yes/No	Comments
	is made to the issuer at the time the issue closes; the remaining balance must be paid in instalments. Although the purchaser has not paid the full value of the issue, he or she is still entitled to full voting rights and dividends.		‘special terms’ trades (other than T+3) will remain unchanged.
Subscription Receipt	Shares carrying the right (but not the obligation) to be exchanged for common stock of a firm at a predetermined price and within a specified period, while simultaneously carrying the right to a dividend prior to the exchange.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current ‘special terms’ trades (other than T+3) will remain unchanged.
Real Estate Investment Trust (REIT)	Investment vehicle similar to a mutual fund (unit trust). REITs use the pooled capital of several investors to make mortgage loans to builders or developers, or to directly invest in income-producing property that offers tax benefits in addition to interest and capital gains.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current ‘special terms’ trades (other than T+3) will remain unchanged.
Flow-Through Shares	A flow-through share is a type of common share which allows a “principal-business corporation” to transfer the tax deductions to investors, who can apply them against their personal or corporate income tax.	YES	Any transaction that currently trades on a T+3 basis will transition to T+2. Current ‘special terms’ trades (other than T+3) will remain unchanged.
Private Shares	Non-publically traded shares that may or may not have a secondary market. Includes private placements, private equity funds, and Canadian-controlled private corporations (CCPCs)/Qualified Small Business Corporations (QSBCs).	Yes Only secondary market trades	Settlement periods and terms are agreed to by both parties at the time of transaction.

Security Type	Description	Impacted by T+2? Yes/No	Comments
Balanced Funds	To avoid any mismanaged expectations for the unitholder, if a fund mandate is balanced, that is, the fund may contain a moving target allocation split across multiple sub-types (e.g., between Equity and Fixed Income) then it is best to single such holdings out through a discrete sub-type so that the end client is well aware that the holding may move between various types at any point in time.	Yes	Responsibility of the fund manufacturer to match differing settlement dates within their pool. This is done today and will continue under T+2 Should also be addressed and confirmed by the MF Working Group.
Physical Commodities	Direct ownership in a commodity (e.g., gold, silver, other precious metals, rare earth metals, etc.).	Needs to be determined	
Segregated Funds	A type of pooled investment that is similar to a mutual fund, but is considered an insurance product. Proceeds received by the insurance company are used to purchase underlying assets that may cross sub-types, and then shares of the segregated funds are sold to investors. Segregated funds may guarantee a specific return over the life of the investment or upon maturity of the fund.	Needs to be determined	Generic Seg fund trading is probably not considered differently than other Mutual Funds. Should also be addressed and confirmed by the MF Working Group.
Leveraged Investments	Investments that rely principally on leverage. That includes split capital shares, leveraged ETFs and Inverse ETFs.	Yes	Exchange Traded T+3 settlement today
Derivatives	A financial instrument whose value is based on one or more underlying assets. In practice, it is a contract between two parties that specifies conditions (especially the dates, resulting values of the underlying variables, and notional amounts) under which payments are to be made between the parties. The most common types of derivatives are: Forwards	No Forwards	T+1 today
	Futures	No	T+1 today
	Options	No	T+1 today

Security Type	Description	Impacted by T+2? Yes/No	Comments
	Swaps	No	Interest rate swaps trade OTC and both parties agree to settlement dates at execution.
Hedge Funds	A typically aggressively-managed portfolio of investments that uses advanced investment strategies such as leveraged, long, short and derivative positions in both domestic and international markets with the goal of generating high returns (either in an absolute sense or over a specified market benchmark).	No	In Canada, the issuer of these funds publishes the settlement provisions within the Prospectus or Offering Memorandum. Should also be addressed and confirmed by the MF Working Group.
Structured Products	Following the broad definition used by regulators such as the SEC, NASD, and NYSE that define a “structured product” as a security derived from or based on another security (including a bond), basket of securities, index, commodity, or foreign currency. Common examples include: Exchange-Traded Notes (ETNs)	No	In Canada, the issuer of these funds publishes the settlement provision within the Prospectus or Offering Memorandum. Should also be addressed and confirmed by the MF Working Group.
	Principal at Risk Notes (PRNs)	No	In Canada, the issuer of these funds publishes the settlement provision within the Prospectus or Offering Memorandum. Should also be addressed and confirmed by the MF Working Group.
	Principal-Protected Notes (PPNs).	No	In Canada, the issuer of these funds publishes the settlement provision within the Prospectus or Offering Memorandum. Should also be addressed and confirmed by the MF Working Group.

T+2 Initiative

High Level Draft External Test Plan

CDS Test region Z1

Version 1.0

DRAFT

Date created: April 5, 2016

Date modified: April 11, 2016

Contents

- 1.0 INITIATIVE BACKGROUND.....1**
- 2.0 INDUSTRY TESTING.....1**
- 2.1 IN-HOUSE PARTICIPANT TESTING1**
- 2.2 EXTERNAL TESTING.....2**
 - PARTICIPATION.....2
 - TEST SCENARIOS.....2
 - TEST ENVIRONMENT.....2
 - PROCESS AND TIMELINES.....3
- 3.0 TEST OVERVIEW3**
- 4.0 TEST DATA.....5**
- 5.0 TEST CALENDAR.....5**
- 6.0 TEST ACTIVITIES.....5**
- 7.0 APPENDIX A: LIST OF SECURITIES <<TBD>>6**
- 8.0 APPENDIX B: CONTACT INFORMATION – PARTICIPANTS/SERVICE PROVIDERS/EXCHANGES6**

1.0 Initiative Background

Currently, the settlement period for security trades in North America is transaction date (T) plus three business days, commonly referred to as T+3. However, subsequent to the European Union move to a T+2 settlement cycle in 2014, the United States announced in late 2014 that DTCC would similarly move to T+2.

The Canadian Securities Administrators (CSA) has determined that due to the interconnectedness of the Canadian and American markets, Canada must move in tandem with the United States to a T+2 environment. Implementation time frame is Q3, 2017.

Moving to T+2 offers the following key benefits:

- Provides a uniform settlement period aligned with the U.S. for settling securities by T+2.
- Reduces counterparty, market and liquidity risks by reducing both outstanding settlements and their associated replacement cost risks.
- Increases automation of operational processes across organizations, including:
 - Dematerialization
 - Same-day affirmation (SDA)
 - Alignment between linked markets
 - Streamlined trade corrections

As a result, the Canadian Capital Markets Association (CCMA) was established to co-ordinate Canadian efforts to shorten the settlement cycle. The CCMA has setup a T+2 Steering Committee (T2SC) and various working groups to coordinate all of the activities that will ensure a smooth transition to T+2 for the Canadian market.

CDS, as a member of the CCMA Operations Working Group (CCMA OWG), developed this test plan for execution in a T+2 designated region during the second quarter of 2017.

2.0 Industry Testing

2.1 In-house Participant Testing

Individual organizations will need to develop their own test plans for both internal and industry-wide testing. While developing internal test plans, organizations should consider the impact of the implementation changes, the creation of representative test data, and the scheduling of testing to be prepared to participate in industry testing. Test data volumes should also be considered for double settlement – i.e. upon implementation a single calendar day will have to accommodate both the last T+3 and the first T+2 settlements.

Testing should include people, processes, and technology impacted by the shortened settlement cycle, for example:

- Internal system and data changes
- Internal process adjustments
- Operating procedures and documentation updates
- Regression testing on upstream and downstream systems, data, and processes
- Vendor and service bureau changes affecting the organization
- Stress testing using the double settlement day volume

Activities not impacted by the shortened settlement cycle should be excluded from testing, for example:

- Deposits
- Withdrawals
- Pledge / collateralization

2.2 External Testing

Participation

Although it is expected that most exchanges, service providers and CDS participants will voluntarily take part in industry testing, it will not be mandated. CDS will develop a sign-off process for exchanges clearing through CDS, CDS participant service providers and CDS participants to certify that they are ready for the transition to T+2. During Q4 2016, CDS will release the certification requirements.

Test Scenarios

- End to end testing capability will be supported, allowing firms to test the full trade lifecycle from their internal trade order systems to CDS post-trade settlement. CDS will engage one or more exchanges to participate in T+2 testing. Their participation will be required to allow firms to conduct full end-to-end testing. Testing will include exchange trades as well as non-exchange trades.
- Corporate Actions will be executed in the test environment, allowing testing of the following impacts:
 - Dividend event to test the shortened settlement period between ex-date and record date
 - Stock Split due bill event to test the shortened settlement period between the ex-date and due bill redemption date

Test Environment

CDS will utilize its Z1 region to execute testing. The CDS Z1 test region will be designated for T+2 testing only for a specified time period (TBD) in Q2 2017. Most connectivity requirements would have already

been established as part of the external testing planned as part of the CNS Early Novation project for Q3 2016.

Process and Timelines

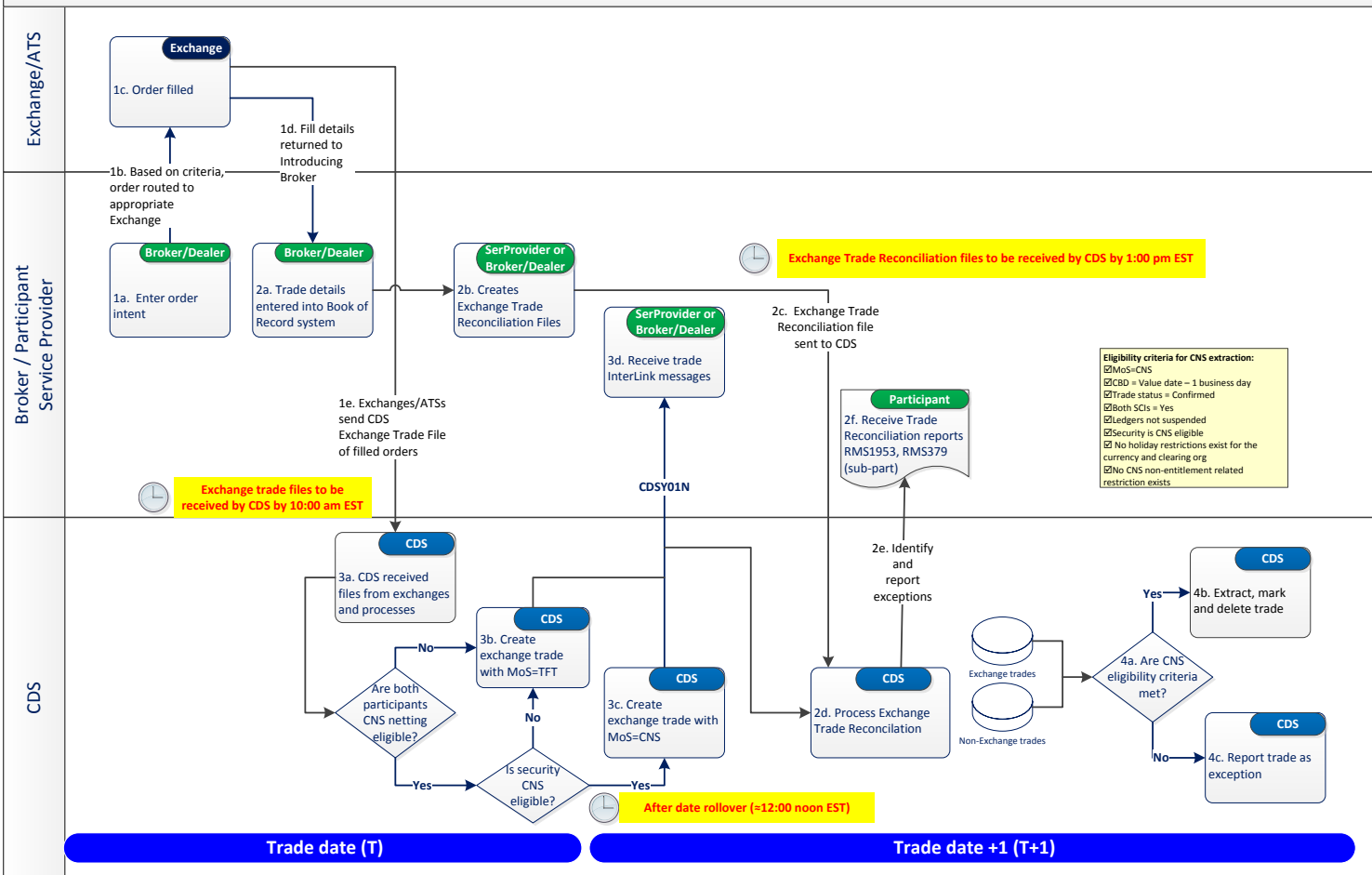
- T+2 testing during 2nd quarter 2017
- Timeline: Two week test period; followed by a two week interval for reassessment, defect testing; followed by another two week test period
- Production security numbers will be used
- Security positions and cap will be provided
- CDS will provide applicable production outputs in the test region
- CDSX online available to execute test activities from 07:00 am EST to 10:00 am EST
- Payment exchange will be processed each day at 10:00 am EST for both CAD and USD
- The end of day batch will run every calendar day at 10:30 am EST
- U.S. and Canadian funds holidays will be included
- Business testing days will match the calendar days

3.0 Test Overview

Testing will include:

	Process	Details
1.		•
2.		•
3.		•
4.		•
5.		•
6.		•
7.		•

TMX CDS T+2 Testing – Exchange Trade Processing



4.0 Test data

5.0 Test calendar

6.0 Test activities

	Activity	Test Day	Business Date
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

7.0 Appendix A: List of securities <<TBD>>

Securities used in testing

Security number	Security short name

Additional securities (not used in planned testing)

Security number	Security short name

8.0 Appendix B: Contact information – Participants/Service Providers/Exchanges

Participant/ Service Providers/ Exchanges	Contact Name	Email address	Phone number