

April 2023

CDS

T+1

INDUSTRY
TEST PLAN
APPROACH

Table of contents

SECTION 1	Background	3
SECTION 2	Testing by individual organisations	3
SECTION 3	Exchanges	4
SECTION 4	CDS industry testing	4
	4.1 Participation	4
	4.2 Out of scope activities	4
	4.3 Testing process	5
	4.4 Test scenarios	5
	4.5 CDS test support	5
SECTION 5	CDS testing	6
	5.1 Test environment	6
	5.2 Test overview	6
	5.3 Participant test preparation activities	7
	5.4 Test process and schedule	7
	5.5 Model test calendar	8
SECTION 6	DTCC testing	10
SECTION 7	Next steps	11
APPENDIX	Appendix 1: CDSX Exchange Trade Process Flow (T+1)	13
	Appendix 2: CDSX Non-Exchange Trade Process Flow with Service Bureau (T+1)	14

1 Background

The settlement period, or settlement cycle, of a securities transaction refers to the time between the transaction date (the date the trade occurs) and the settlement date (the date on which ownership of the securities is transferred). Historically, securities transactions have settled on transaction date (T) plus five (T+5) and T+3. The current, established, settlement period for security trades in North America is T+2. In 2021, the United States financial services industry, in coordination with regulators, began preparations to move to a T+1 settlement cycle; that is, a securities transaction would settle the business day following a trade.

On February 15, 2023, the U.S. Securities and Exchange Commission (SEC) voted in favour of adopting the proposed rule, Shortening the Securities Transaction Settlement Cycle¹, subject to a number of amendments, including a compliance by date of May 28, 2024, the day after the U.S. Memorial Day weekend. Throughout the public comment period and continuing up to SEC vote, key organisations representing both the U.S. and the Canadian industry have urged the SEC to consider moving the compliance date in order to accommodate a T+1 implementation on September 3, 2024, following the Labor Day weekend; however, these recommendations were ultimately rejected.

The Canadian Securities Administrators (CSA) have expressed their view that shorter settlement cycles can reduce settlement risk and that keeping the settlement cycle in Canada aligned with the U.S. industry can also reduce market inefficiencies.

Moving to T+1 offers the following key benefits:

- Provides a uniform settlement period aligned with the United States for settling securities
- Reduces counterparty, market and liquidity risks by reducing both the timeframe of outstanding settlements and the replacement cost risk for such settlements
- Encourages further automation of operational processes across organisations, including:
 - Dematerialization
 - Same-day affirmation (SDA)
 - Alignment between linked markets
 - Streamlined trade corrections

The Canadian Capital Markets Association (CCMA), which includes representatives from a broad range of Canadian securities and financial services entities, is coordinating the industry's efforts to transition to a T+1 timeline and environment. The CCMA has established a T+1 Steering Committee (T1SC) and several working groups to collaborate with industry stakeholders and to ensure a smooth transition to T+1 for the Canadian market. CDS, which sits on the CCMA Operations Working Group (OWG), has committed to developing and facilitating the execution of a T+1 industry test plan, prior to implementation, in collaboration with the industry members through the recommendations agreed to at the CCMA.

Based on the implementation date announced by the SEC, CDS has prepared this document in order to provide a high-level framework of CDS's T+1 industry test plan to assist CDS Participants and other industry stakeholders in the planning and preparations for their T+1 testing activities.

2 Testing by individual organisations

Industry members are strongly encouraged to work with all applicable and affected stakeholders to develop and execute robust and comprehensive internal T+1 test plans.

While developing internal test plans, organisations should consider the following:

- The impact of T+1 changes on their system(s)
- The need to create representative test data
- Scheduling their internal testing to be prepared for industry testing

Test data volumes for the transitional double settlement volume day should be considered; simply put, the settlement cut-over day will have to accommodate the processing of both the final T+2 and the first T+1 settlements.

¹ <https://www.sec.gov/rules/proposed/2022/34-94196.pdf>

Testing plans and processes should factor in people, processes, and technology affected by the shortened settlement cycle, such as:

- 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 organisation
- Stress testing using the double settlement day volume

3 Exchanges

While the T+1 industry test will be on a voluntary basis for exchanges for whom CDS processes transactions, CDS strongly encourages all exchanges and marketplaces to participate; the broadest possible participation by stakeholders is crucial, particularly in light of the CCMA's recommendation to change the current end-of-day Exchange Trade reporting process to intraday (hourly) deliveries of trades to CDS.

The current Exchange Trade reporting process requires marketplaces to report all exchange trades in an end of day file, to CDS, by 20:00 Eastern Time on trade date. To accommodate the CCMA recommendation, CDS will receive and process intraday batch files or messages from the marketplaces on an hourly basis in order to generate and deliver corresponding hourly Exchange Trade entry messages/files back to Participants and/or their service bureaus.

CDS will work with all marketplaces to coordinate the timing and specific changes needed in order to accommodate the intraday processing changes in the Exchange Trade process.

4 CDS industry testing

As Canada's clearing and settlement facility, CDS will facilitate end-to-end testing for the Canadian market.

The following sections cover CDS's T+1 industry testing for Canadian trades.

4.1 Participation

Although it is expected that most exchanges, service providers and CDS participants will voluntarily take part in industry testing, testing will be voluntary.

4.2 Out of scope activities

Activities unaffected by the shortened settlement cycle will be excluded from industry testing. The following activities have been identified as out of scope:

- Deposits
- Withdrawals
- Pledge/collateralization
- Northbound/southbound movements
- International movements
- Direct participant (DP) trade matching

4.3 Testing process

The CDS T+1 industry testing is designed to support full end-to-end testing including:

- Entry of exchange trade orders by participants
- Execution of orders by exchanges
- Transfer of exchange trade files from exchanges to CDS
- Entry and confirmation of non-exchange trades in CDSX by participants and service bureaus
- Extraction, netting and marking of CNS eligible trades
- Settlement of TFT trades and outstanding CNS positions
- Creation of outbound files
- Execution of trade reconciliation

4.4 Test scenarios

- End-to-end testing will be supported, in order to allow firms to test the full trade lifecycle from their internal trade order systems to CDS post-trade settlement.
 - CDS will partner with exchanges and ATSS to participate in T+1 testing to enable firms to conduct full trade end-to-end lifecycle testing
 - Testing will include both exchange and non-exchange trades
 - Participants are encouraged to set up testing partners to facilitate testing data
- 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 with due bill event to test the shortened settlement period between the ex-date and due bill redemption date
- The following exception scenarios are in scope:
 - United States markets open/ Canadian markets closed
 - Canadian markets open/United States markets closed
- Erroneous exchange and/or ATS trade file with incorrect value dates
- Expiry, options exercised and assigned file for CDCC

4.5 CDS test support

Participants will be able to email the T+1 testing support group (CDST1TestingSupport@tmx.com) with any T+1 testing questions or issues. The CDS T+1 test support team will monitor the group email address throughout regular business hours.

During scheduled testing, participants and service bureaus will receive the following emails:

- **Daily activities email (BOD):** CDS will email the day's activities, including whether special processing is scheduled for the day
- **Batch complete email (EOD):** CDS will email notification to participants at end of day that batch processing is complete and files are available for pick up
- **Ad hoc emails:** CDS will issue an email if CDS encounters issues during testing

5 CDS testing

5.1 Test environment

CDS will designate the Z1 test region in CDSX to execute T+1 industry testing. As part of the preliminary stages of industry testing, Participants and their service bureaus will need to be set up with connectivity to the designated test region and the Axway platform for T+1 testing and file transfers.

While the CDSX Z1 test region will be prepared to accommodate the industry T+1 testing schedule, if at any time, CDS Participants make changes to their system and would like to interact with CDS, the CDSX C2 test region is available to Participants to test messaging and their interface to CDS. Please note that although the C2 region is T+1 compatible, there is no processing related to Exchange Trades in this test region.

If Participants have any specific requirements for testing in the C2 region, CDS will need to assess such requirements on a case-by-case basis. Participants are advised to contact their CDS Relationship Manager to coordinate their testing activities in the C2 test region.

5.2 Test overview

The following table provides a brief description of the test components to be included in the final industry test plan.

TEST COMPONENT	DESCRIPTION
CONNECTIVITY TESTING	<ul style="list-style-type: none">• Participants and service bureaus will be required to complete connectivity testing prior to the start of the external testing period
PARTICIPANT USER ACCESS TO TEST REGION	<ul style="list-style-type: none">• Participants will be provided with test user IDs and passwords• Participants will be required to access the test region online using the user ID and password provided prior to the start of the external testing period• Reports will be available
EXTERNAL TESTING PERIOD	<ul style="list-style-type: none">• A period of roughly three months, anticipated to begin in the first quarter of 2024 to ensure test completion prior to implementation.
SYNCING DATA PRIOR TO TEST	<ul style="list-style-type: none">• Before the start of testing, securities and holidays must be synchronised with service bureaus/participants• Ledger adjustments will be entered by CDS to create security ledger positions; CDSU01N messages will be generated by CDS
DAILY SCHEDULE	<ul style="list-style-type: none">• The online test region will be available on test days from 7 a.m. ET• Payment exchange will be processed at the end of the online testing session each test day• The overnight batch process will be executed to complete testing activity for every test day

5.3 Participant test preparation activities

The following will be the test preparation activities for participant testing:

1. Confirm participation in external test
2. Provide test CUIDS
3. Confirm subscription requirements (files and messaging)
4. Provide contact information for:
 - Business contact(s)
 - Technical contact(s) for FTP setup and connectivity testing
 - Technical contact(s) for MQ setup and connectivity testing
5. Perform connectivity testing (files and messaging)
6. Verify online access to the T+1 testing region using test IDs.

5.4 Test process and schedule

The T+1 industry testing process will include approximately 2–3 months of pre-test preparation time, beginning in early-October 2023. This preparation time will enable CDS to prepare the T+1 test region in CDSX, confirm connectivity with Participants and help coordinate other Participant test preparation activities such as those outlined in the previous section.

After pre-test preparations are completed, the T+1 testing schedule will consist of four two-week long testing cycles spread over the course of approximately 15 weeks. A number of non-testing weeks will also be scheduled to provide time for assessing test results and for setting up the test environment between testing cycles. The test process and schedule will incorporate the following attributes:

- The testing timeline will occur in two-week intervals, beginning in January 2024:
 - Week 0: Test data setup
 - Week 1 and 2: Test period for **first cycle**
 - Week 3 and 4: Reassessment and defect testing period; Reset test data
 - Week 5 and 6: Test period for **second cycle**
 - Week 7 and 8: Reassessment and defect testing period; Reset test data
 - Week 9 and 10: Test period for the **third cycle**
 - Week 11 and 12: Reassessment and defect testing period; Reset test data
 - Week 13 and 14: Test period for the **fourth and final cycle**
 - Week 15: Final assessment and conclusions
- Trades entered during the first day of each test period will have T+2 settlement to allow testing of a dual settlement day on Day 3 of the test period
- Production security numbers will be used
- Security positions and cap will be provided
- Reports, files and messages will be provided in the test region
- CDSX will be available for online testing daily from 07:00 am ET
- Payment exchange for both CAD and USD will be processed daily
- The end of day batch will be run at the completion of each test day
- Processing for U.S. and Canadian funds holidays will be included

5.5 Model test calendar

The following 15-week model test calendar is provided here as a sample testing schedule. While the details and timing on this calendar are subject to change, it provides a general layout of the test schedule and includes examples of some anticipated daily testing activities.

Test Period Calendar - Example

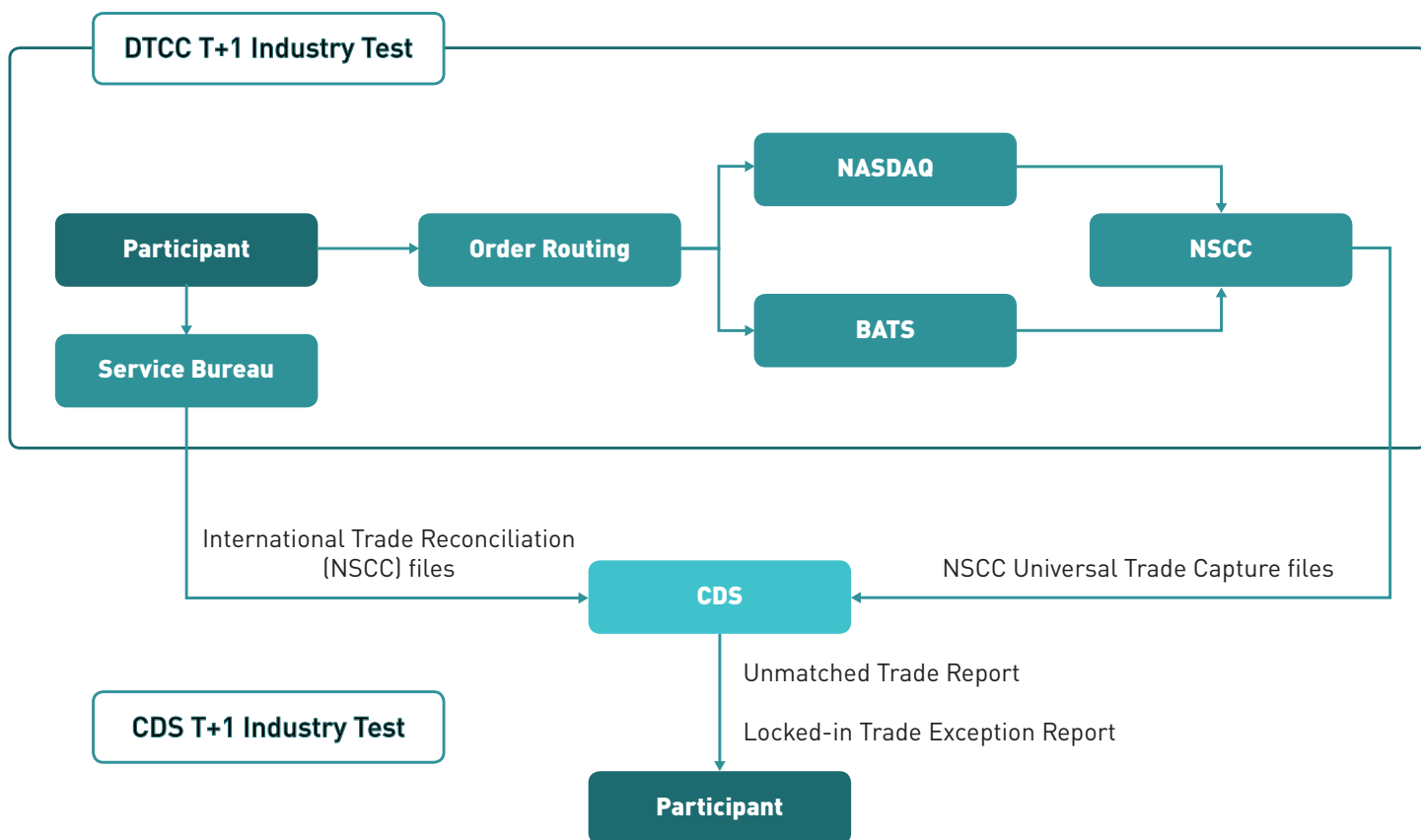
SUN	MON	Tue	Wed	Thu	Fri	Sat
WEEK 0	Data set-up	Data set-up	Data set-up	Data set-up	<ul style="list-style-type: none"> • Testing cycle 1 begins • Receive T+2 trade file 	
WEEK 1	<ul style="list-style-type: none"> • Receive T+1 trade files • DIV ex-date • DIV record date • SS with due bills record date 	<ul style="list-style-type: none"> • Receive T+1 trade files • Double settlement date 	Holiday processing: <ul style="list-style-type: none"> • Market open in U.S. / Closed in Canada 	Receive T+1 trade files (includes erroneous exchange trades)	Receive T+1 trade files (includes correcting exchange trades)	
WEEK 2	Receive T+1 trade files	Holiday processing: <ul style="list-style-type: none"> • Market open in Canada / Closed in U.S. • Receive T+1 trade files 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills ex-date • SS with due bill redemption date 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills CDS payable date 	Last settlement date for cycle 1	
WEEK 3	Review	Review	Review	Review	Review	
WEEK 4	Reset data in region	Data set-up	Data set-up	Data set-up	<ul style="list-style-type: none"> • Testing cycle 2 begins • Receive T+2 trade file 	
WEEK 5	<ul style="list-style-type: none"> • Receive T+1 trade files • DIV ex-date • DIV record date • SS with due bills record date 	<ul style="list-style-type: none"> • Receive T+1 trade files • Double settlement date 	Holiday processing: <ul style="list-style-type: none"> • Market open in U.S. / Closed in Canada 	Receive T+1 trade files (includes erroneous exchange trades)	Receive T+1 trade files (includes correcting exchange trades)	
WEEK 6	Receive T+1 trade files	Holiday processing: <ul style="list-style-type: none"> • Market open in Canada / Closed in U.S. • Receive T+1 trade files 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills ex-date • SS with due bill redemption date 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills CDS payable date 	Last settlement date for cycle 2	
WEEK 7	Review	Review	Review	Review	Review	

WEEK 8	Reset data in region	Data set-up	Data set-up	Data set-up	<ul style="list-style-type: none"> • Testing cycle 3 begins • Receive T+2 trade file
WEEK 9	<ul style="list-style-type: none"> • Receive T+1 trade files • DIV ex-date • DIV record date • SS with due bills record date 	<ul style="list-style-type: none"> • Receive T+1 trade files • Double settlement date 	Holiday processing: <ul style="list-style-type: none"> • Market open in U.S. / Closed in Canada 	Receive T+1 trade files (includes erroneous exchange trades)	Receive T+1 trade files (includes correcting exchange trades)
WEEK 10	Receive T+1 trade files	Holiday processing: <ul style="list-style-type: none"> • Market open in Canada / Closed in U.S. • Receive T+1 trade files 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills ex-date • SS with due bill redemption date 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills CDS payable date 	Last settlement date for cycle 3
WEEK 11	Review	Review	Review	Review	Review
WEEK 12	Reset data in region	Data set-up	Data set-up	Data set-up	<ul style="list-style-type: none"> • Final test cycle period begins • Receive T+2 trade file
WEEK 13	<ul style="list-style-type: none"> • Receive T+1 trade files • DIV ex-date • DIV record date • SS with due bills record date 	<ul style="list-style-type: none"> • Receive T+1 trade files • Double settlement date 	Holiday processing: <ul style="list-style-type: none"> • Market open in U.S. / Closed in Canada 	Receive T+1 trade files (includes erroneous exchange trades)	Receive T+1 trade files (includes correcting exchange trades)
WEEK 14	Receive T+1 trade files	Holiday processing: <ul style="list-style-type: none"> • Market open in Canada / Closed in U.S. • Receive T+1 trade files 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills ex-date • SS with due bill redemption date 	<ul style="list-style-type: none"> • Receive T+1 trade files • SS with due bills CDS payable date 	Last settlement date for final test cycle
WEEK 15	Final review and assessment	Final review and assessment	Final review and assessment	Test conclusions	Test conclusions

6 DTCC testing

DTCC has published their industry T+1 test framework on the DTCC T+1 website (www.ust1.org). As part of DTCC's T+1 testing, CDS participants will engage with their U.S. counterparties to submit trades for clearing and settlement at NSCC.

The following graphic outlines the data flow to support trade reconciliation processes during DTCC testing.



During the CDS industry test cycles, CDS will provide the following support to sponsored link participants from the CDSX Z1 test region:

- **International trade reconciliation (ITRS):** NSCC and CDS Participants' service bureaus will forward their test ITRS files to CDS. CDS will execute the reconciliation process, which will generate ITRS reports including the CDS Trading Blotter – Dropped Trade report (Report ID: 000267) and the CDS Trading Blotter – Unmatched Trade report (Report ID: 000933).
- **Locked-in trade reconciliation (LTRS):** NSCC and CDS Participants' service bureaus will forward their test LTRS files to CDS. CDS will execute the reconciliation process and generate LTRS reports including the Locked-In Trade Exception report (Report ID: 001890).
- **NSCC trade pass-through files:** CDS will pass-through participant files from NSCC such as the NSCC Consolidated Trade Summary (CTS) files (File type: 0028-3) and the NSCC CNS account summary extract file (File type: 0007).

Notes:

- Northbound and southbound movements are out of scope for CDS support during DTCC testing.
- All DTCC pass-through reports that are currently available through the CDSX RMS facility will no longer be available upon PTM implementation. Participants who are not already doing so are encouraged to start incorporating their operational processes to access these reports directly through DTCC as soon as possible. Please refer to CDS Bulletin 2019-00004C for more information.

7 Next steps

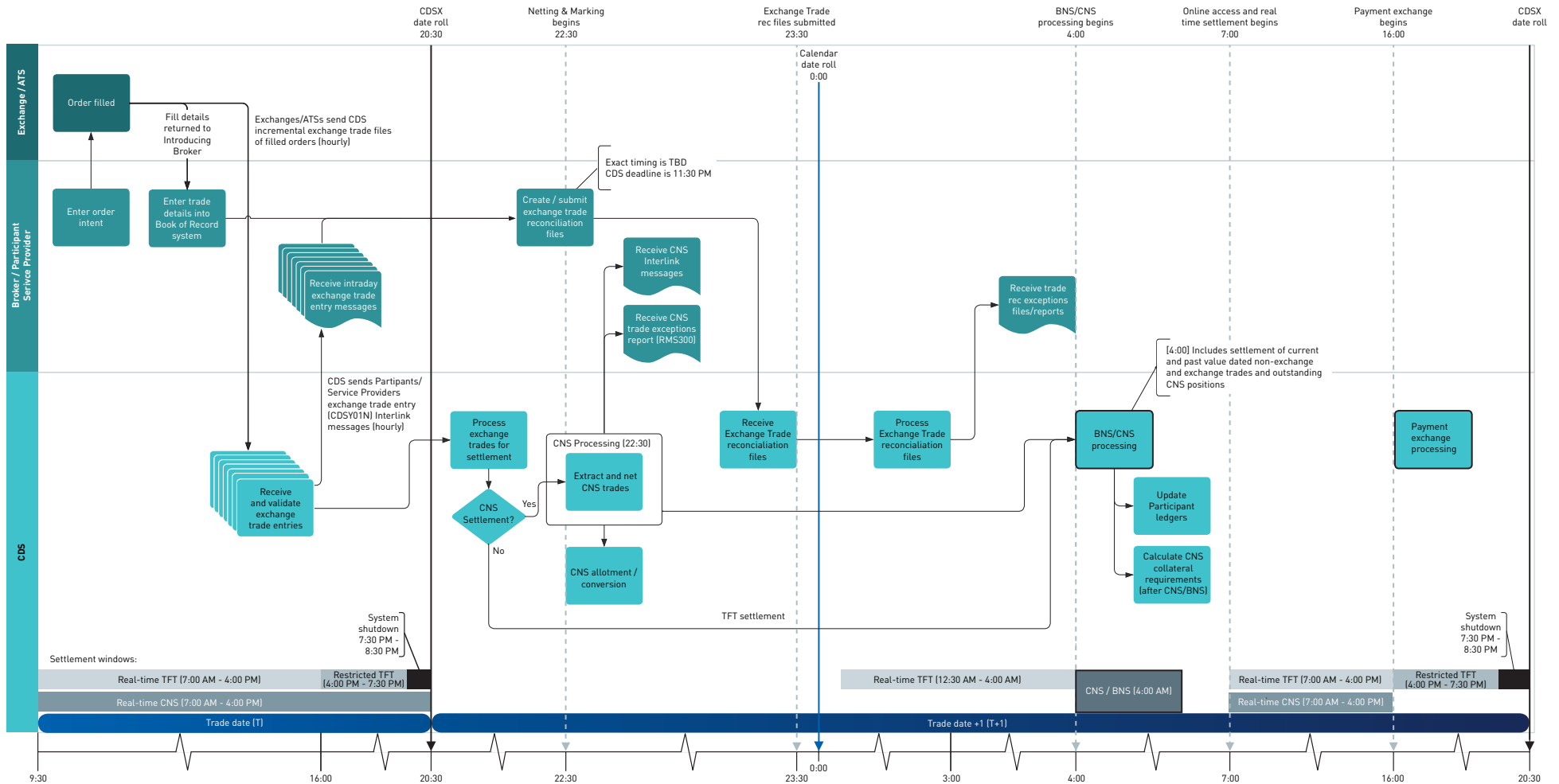
This CDS T+1 Industry Test Plan Approach document is a high-level overview of how CDS intends to execute its T+1 industry testing and is intended to provide guidance to industry stakeholders in their ongoing preparations to transition to T+1. Further details and scheduling specifics regarding the T+1 industry test plan will be communicated as CDS continues collaborating with industry stakeholders and working with its Participants toward finalising specific testing requirements.

CDS encourages all industry participants to coordinate their T+1 preparations with applicable stakeholders to ensure a robust industry-wide testing period followed by a successful migration to T+1 settlement.

CDS welcomes your questions and any feedback you may have on the contents of this document. Please contact us through your CDS relationship manager or send an email to CDST1TestingSupport@tmx.com.

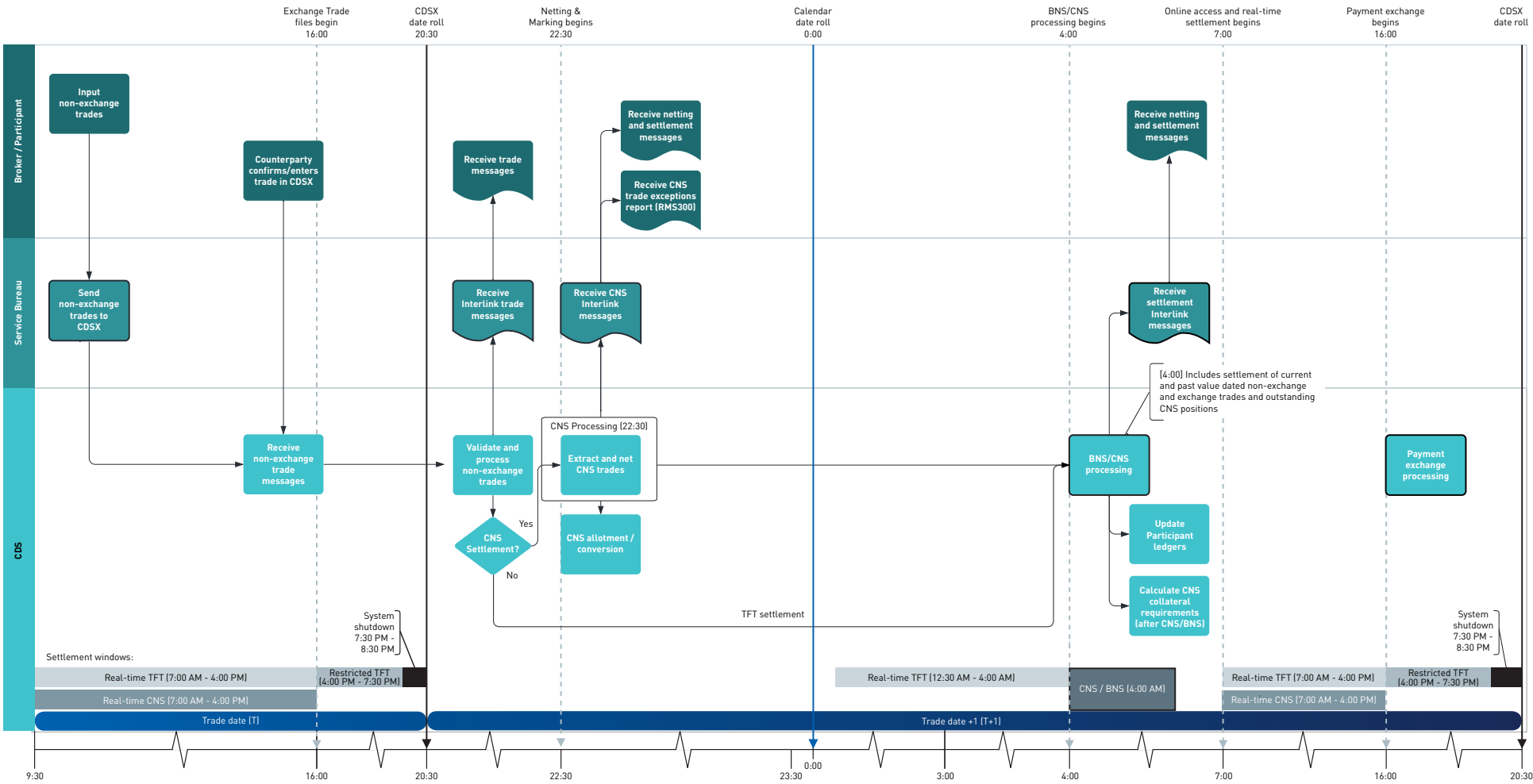
APPENDIX

Appendix 1: CDSX Exchange Trade Process Flow (T+1)



NOTE: TIMELINE IS NOT TO SCALE

Appendix 2: CDSX Non-Exchange Trade Process Flow with Service Bureau (T+1)



NOTE: TIMELINE IS NOT TO SCALE



cds.ca

Copyright © 2023 The Canadian Depository for Securities Limited.

All rights reserved. Do not copy, distribute, sell or modify this document without The Canadian Depository for Securities Limited's prior written consent. This information is provided for information purposes only. Neither TMX Group Limited nor any of its affiliated companies guarantees the completeness of the information contained in this publication, and we are not responsible for any errors or omissions in or your use of, or reliance on, the information. This publication is not intended to provide legal, accounting, tax, investment, financial or other advice and should not be relied upon for such advice. The information provided is not an invitation to purchase securities listed on Toronto Stock Exchange and/or TSX Venture Exchange. CDS is the trademark of The Canadian Depository for Securities Limited. The Future is Yours to See., TMX, the TMX design, TMX Group, Toronto Stock Exchange, TSX Venture Exchange and Voir le futur. Réaliser l'avenir. are the trademarks of TSX Inc. and are used under license.

April 2023