November 2022

CDS

MIGRATION TO T+1

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Executive Summary

The settlement period for securities trades in North America is transaction date (T) plus two business days, commonly referred to as T+2. In 2021, however, a U.S. financial services industry working group, in coordination with regulators, began preparing to move to a T+1 settlement cycle.

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

The Canadian Capital Markets Association (CCMA) is coordinating the Canadian financial market's move to the T+1 settlement cycle. The CCMA's several industry working groups are working to identify the specific requirements for the Canadian financial industry. CDS is collaborating with the CCMA as part of these working groups.

Moving to T+1 offers the following key benefits:

1. Provides a uniform settlement period aligned with the U.S. for settling securities by T+1.
2. Mitigates counterparty, market, and liquidity risks by reducing both outstanding settlements and the associated replacement cost risks.
3. Increases the ability for organizations to automate operational processes across organizations, including in the areas of:
   - Dematerialization
   - Same-day affirmation (SDA)
   - Alignment between linked markets
   - Streamlined trade corrections

CDS has conducted a requirements analysis for the transition to a T+1 settlements environment in the context of which the impacts to CDS systems, rules, and internal/external procedures related to all functional areas were assessed.

The following summarizes the findings:

Impacts are mainly procedural on CDS trade processing and corporate action and entitlement functions; CDS systems are driven by specified dates received from external sources, the systems are not impacted by the length of the settlement period. Specifically, CDS systems are already T+1 compatible, and are unaffected by a shortened settlement period; processes are based on trade date, value date, ex-date, and due bill redemption date values as received from exchanges and service bureaus.

CDS's Participant Rules, including the rules governing both domestic and cross-border transactions and activity, are drafted without reference to specific or particular timelines. Consequently, CDS does not anticipate a requirement for material amendments or modifications to the Participant Rules.

Systems impacts are limited to changing timing from T+2 to T+1 for:

- Alerts
- DTCC Reg SHO close out settlements
- Computations of projected NSCC payment obligation for CNS trades.

Exchanges and service bureaus will be obliged to ensure that they are T+1 compliant, and a comprehensive testing effort with CDS will be necessary to ensure that CDS receives the necessary data efficiently and reliably in a T+1 settlements environment.

CDS participants and/or their service bureau who receive trade related output from CDS will be required to conduct comprehensive testing with CDS to ensure their systems are T+1 compatible.

CDS currently provides regulators and participants with the Institutional Trade Compliance Statistics file for trade matching. If the CCMA working group determines that changes are required to the file for T+1, CDS will implement the necessary system changes.

CDS will also undertake the following in the context of a risk analysis:

- CDS will assess the transition impacts on the CNS Participant Fund and the downstream impacts on the sizing of the CNS Default Fund to determine the appropriate size of the Funds.
- CDS will assess the impacts on Liquidity Exposure and the subsequent Liquidity Shortfall on the CNS settlement to determine the appropriate size of the CNS Liquidity Fund
- CDS will assess the impact of the transition on End-of-day settlement funding since liquidity managers will have one day less to ensure necessary funding liquidity for settlement.

CDS will coordinate our activities with stakeholders as part of the CCMA working groups to ensure a seamless transition to the T+1 settlement cycle.

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1 Introduction

In North America, the settlement period for securities is currently trade date plus two business days, referred to as T+2. In December of 2021, the Canadian Capital Markets Association (CCMA) confirmed its plans to shorten Canada's standard securities settlement cycle from T+2 to one day after trade date (T+1). This paper covers CDS's readiness to move to a T+1 settlements cycle.

2 Background

In early 2021, the securities industry in the United States, led by the Securities Industry and Financial Markets Association (SIFMA), the Investment Company Institute (ICI) and the Depository Trust & Clearing Corporation (DTCC), set out to understand the requirements and impacts of moving from a T+2 to a T+1 settlement cycle. A T+1 Industry Steering Committee along with a T+1 Industry Working Group were created and worked throughout 2021 to release their findings in December 2021.[1]

Subsequently, the U.S. Securities and Exchange Commission (SEC) published proposed rule changes relating to the move to T+1 in February 2022.[2] While some aspects of the proposed rules are yet to be finalized (e.g., the exact implementation date), the industry is anticipating the move to T+1 sometime in 2024.

Canadian regulators, through a Staff Notice of the Canadian Securities Administrators (CSA), published a notice outlining their views on the benefits of shorter settlement cycles and emphasizing the need for close collaboration and coordination across the Canadian securities industry in order to transition to T+1 in alignment with the U.S. markets.

2.1 CCMA working groups

The CCMA's T+1 Steering Committee (T1SC) and its working groups will coordinate the activities associated with ensuring a smooth transition to T+1 industry-wide. The T1SC's mandate is to co-ordinate the industry-wide effort to shorten the securities settlement cycle to T+1 and will include the following responsibilities:

- Identifying all areas within scope, such as system development, procedure, process, etc.
- Identifying the solution(s) to the noted in scope areas
- Ensuring industry agreement on required standards
- Identifying and promoting associated rule changes, if any
- Agreeing on timelines
- Coordinating activities to complete tasks
- Educating market participants and their personnel
- Acting as spokespersons for the T+1 initiative
- Planning industry-wide testing to ensure overall industry readiness
- Coordinating with the U.S. to ensure a lock-step approach to implementation

The following table provides an overview of the various CCMA working groups and their responsibilities to prepare and support industry for migration to a T+1 settlements environment.

WORKING GROUP	RESPONSIBILITIES
LEGAL AND REGULATORY WORKING GROUP (LRWG)	• Identify all legal and regulatory issues related to the move to T+1 • Achieve industry consensus on proposed solutions, action plans and timelines for all legal and regulatory open issues • Provide ongoing communication and support to the T1SC, tracking issues through to completion.

[1] Accelerating the U.S. Securities Settlement Cycle to T+1 (December 2021).

[2] Shortening the Securities Transaction Settlement Cycle (February 9, 2022).

COMMUNICATION AND EDUCATION WORKING GROUP (CEWG)	• Develop and execute an integrated communications plan to support the smooth implementation of a T+1 securities settlement cycle • Monitor, and report on relevant, T+1 developments in the U.S. • Prepare and manage tools for helping advance the understanding of T+1 and T+1 preparations.
MUTUAL FUNDS WORKING GROUP (MFWG)	• Identify all operational Mutual Funds issues related to the move to T+1 • Achieve industry consensus on proposed solutions, action plans and timelines for all open issues related to Mutual Funds • Provide ongoing communication and support to the T1SC, tracking issues through to completion
OPERATIONAL WORKING GROUP (OWG)	• Identify all operational issues related to the move to T+1; • Achieve industry consensus on proposed solutions, action plans and timelines for all Operational open issues • Provide ongoing communication and support to the T1SC, tracking issues through to completion.

3 Scope

The CCMA's white paper will cover the transition to T+1 at the industry level; the scope of this paper is limited to CDS's readiness for a T+1 settlement cycle.

4 Key benefits

While moving to T+0 is currently impractical due to existing processing standards of the industry, moving to T+1 is feasible and offers the following key benefits:

- Uniform settlement period aligned with the U.S. securities market
- Reduction of counterparty, market, and liquidity risks
- Increase of automation of operational processes across organizations

4.1 Alignment with U.S. markets

In order to ensure that market participants on both sides of the border avoid incurring additional risk, increased costs, and added work that would otherwise be unnecessary, CDS fully intends to migrate to T+1 concurrently with DTCC and the U.S. securities markets.

Together with the Depository Trust & Clearing Corporation (the "DTCC") and its subsidiaries, CDS operates one of the most active and highly sophisticated inter-depository linkages in the world. The highly interconnected nature of CDS's cross-border services with DTCC relies heavily upon harmonized settlement practices between the Canadian and the U.S. markets.

CDS has previously worked with stakeholders in both Canada and the U.S. to synchronize the transition to shorten the standard securities settlement cycle from T+5 to T+3 in 1995, and from T+3 to T+2 in 2017.

4.2 Reduction of risk

T+1 settlement reduces the risk associated with security settlement in two fundamental ways, each of which has the potential to generate capital savings for the financial industry:

1. Reduced outstanding settlements:
   - A maximum of one day's worth of settlements remain outstanding at any given time
   - The reduced portfolio size results in a smaller counterparty risk exposure in the system, which in turn reduces margin requirements
2. Reduction of replacement cost risk for outstanding settlements:
   - The replacement cost required in a default situation drives counterparty risk. Since replacement cost is a function of market volatility and time, a shortened settlement cycle reduces counterparty risk exposure.

4.3 Increase of automation in operational processes across organizations

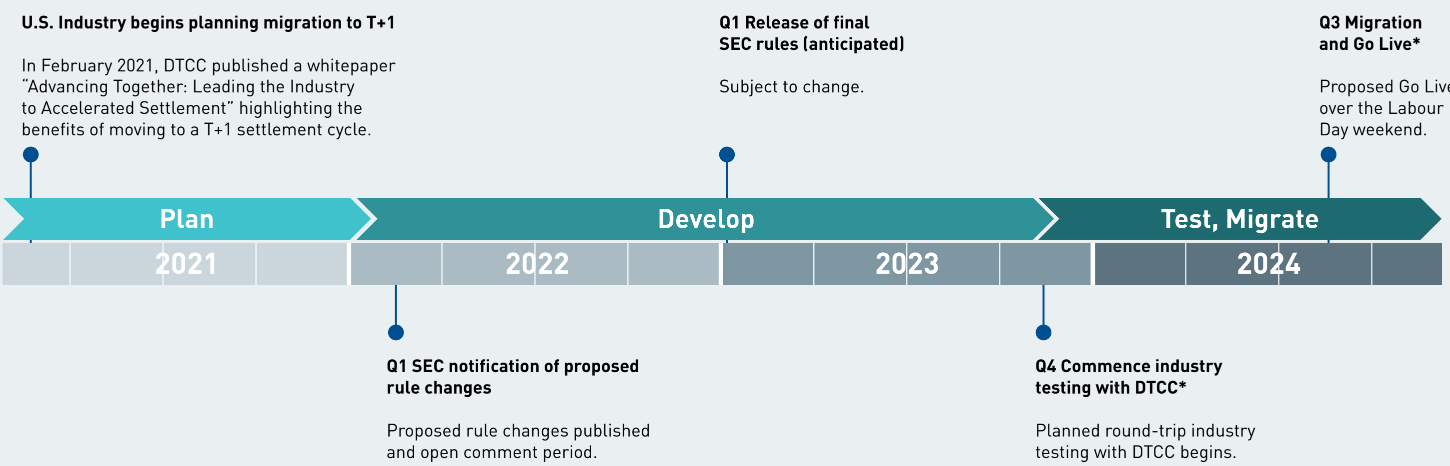
T+1 settlements provide an opportunity to create an environment that is conducive to increasing automation and otherwise standardizing operational processes. Such an environment would further encourage the following in order to support a shorter settlement cycle:

- Dematerialization: Book-entry only securities are ideal for an automated, shorter settlement cycle
- Same-day affirmation (SDA): Same-day affirmation is a critical component of a shorter settlement cycle; automating SDA enables expeditious trade verification
- Alignment between linked markets: Adopting a T+1 settlements cycle strategy keeps the Canadian market in line with the U.S. market, which eliminates issues such as those related to corporate action processing under different settlement cycles

5 CDS migration timelines

CDS's timeline for migration to the T+1 settlement cycle is dependent on the timing of T+1 implementation at DTCC in the United States. The synchronized migration to T+1 with DTCC is critical in meeting the Canadian securities industry's primary objective to avoid the costs and complications of managing two different settlement cycles between one of the most integrated cross-border depository linkages in the world.

DTCC's timeline is dependent on the regulatory compliance date, which is yet to be announced by the SEC. Subject to regulatory approval, DTCC plans to implement T+1 in Q3, 2024. The following is the proposed DTCC timeline.



In the CCMA's announcement related to the proposal to shorten Canada's standard securities settlement cycle, the CCMA cites broad consensus across the Canadian securities industry that the Canadian markets must move to T+1 in tandem with the United States to ensure consistency in the North American marketplace. CDS has committed to meeting target timelines established by the U.S. Securities and Exchange Commission and DTCC in collaboration with the CCMA and Canadian financial market stakeholders.

* Future dates and schedules are subject to change depending on the implementation date declared in the SEC's final rule announcement.

6 Requirements analysis

The following sections outline the findings determined during requirements gathering.

6.1 Exchanges, services and other external vendors

The functions performed by CDS services rely on dates provided by exchanges, services bureaus and other external vendors.

Because CDS functions are date driven, its systems are compatible within a T+1 settlement environment. However, CDS's vendors and other market participants (including listing venues, exchanges, marketplaces, and financial services intermediaries such as service bureaus and transfer agents) must be similarly compatible to ensure that CDS receives the necessary data efficiently and reliably within a T+1 settlements timeframe. Compliance failures on the part of external sources can adversely affect CDS's ability to process transactions.

6.2 Participants

Participants must do the following to ensure their T+1 settlements readiness:

- Adapt their procedures to complete pre-settlement in a T+1 cycle
- Comply with same-day affirmation, when possible
- Improve information exchange, including use of electronic solutions when possible for communication, payment or cheque clearing purposes
- Ensure their cross-border security transactions settle on T+1 when trading with counterparties outside Canada
- Ensure internal systems and process readiness before the 2024 implementation

CDS must support participant T+1 testing on CDS systems.

6.3 CDS services

In February 2021, CDS began preparing for T+1 by analyzing their current systems and processes. The following sections summarize whether or not changes are required to CDS rules, systems, and documentation in order to ensure CDS T+1 settlements readiness.

6.3.1 Issuer services

The functions performed by Issuer Services occur before listing on any exchange or, for amendments, before a security begins trading. These functions are consequently unaffected by a shortened settlement cycle.

FUNCTION	DESCRIPTION	RULE CHANGE	SYSTEMS CHANGE	EXTERNAL PROCEDURES CHANGE	INTERNAL PROCEDURES CHANGE
ISIN ISSUANCE	CDS receives ISIN requests before the issue goes to market These requests are consequently unaffected by trading timelines	No	No	No	No
ELIGIBILITY	The issue is made eligible prior to closing and listing of the issue During the lifecycle of the security the market, symbol, CNS eligibility and restrictions are updated in the security master file (SMF) These updates are date driven and not by the length of the settlement period	No	No	No	No

6.3.2 Depository and clearing services

FUNCTION	DESCRIPTION	RULE CHANGE	SYSTEMS CHANGE	EXTERNAL PROCEDURES CHANGE	INTERNAL PROCEDURES CHANGE
DEPOSITS	Settlement depends on confirmation of the deposit transaction	No	No	No	No
WITHDRAWALS	Settlement depends on confirmation of the withdrawal transaction	No	No	No	No
EXCHANGE TRADE REPORTING	Exchange reporting is currently done in batch overnight In a T+1 environment, marketplaces are to report trades incrementally in intraday batches to CDS, starting at 10:00 and continuing on the hour with the last file at 17:00. No file will be processed at 16:00, however, due to payment exchange CDS will process trades and send exchange trade entry (CDSY01N) Interlink messages to correspond to the hourly schedule of intra-day files. [See the CDSX exchange trade process flow diagrams in Appendix 1 and hourly trade statistics in Appendix 2] There will be no changes to the trade message layout as currently specified in the CDS Batch and Interactive Services Technical Information (BISTI) document	No	Yes	Yes	Yes
EXCHANGE TRADE RECONCILIATION	Participants will have a shorter time frame to reconcile exchange trades CDS will continue to match files received from the exchanges against the participant and service bureau and reconciliation reports No changes to the exchange trade reconciliation services and timelines	No	No	No	No
TRADE MATCHING AND CONFIRMATION FOR NON-EXCHANGE TRADES	Trade matching and confirmation is executed based on an agreed upon value date by the buyer and seller	No	No	Yes	No
INSTITUTIONAL TRADE COMPLIANCE STATISTICS	CDS compiles statistics daily, and provides monthly and quarterly trade compliance summaries to regulators. Reporting to regulators will remain the same under T+1 unless IIROC decides to make changes	No	TBD	TBD	No

TRADE-FOR-TRADE SETTLEMENT	Trades settle on value date if all settlement criteria are met. Otherwise, trades remain outstanding Settlement is consequently value date driven, not driven by the length of the settlement period	No	No	No	No
NOVATION / CNS SETTLEMENT	CDS novates trades on value date minus one. No change to the novation process and timelines CDS settles trades with outstanding unsettled positions on value date Settlement is consequently value date driven, not driven by the length of the settlement period	No	No	Yes	No
BUY-INS	**Current CDS Buy-in process:** By-in intent can be submitted on T+2: 1. From prior to 4:00 PM ET the intent will be executed Notification Date plus 2 (N+2) 2. Between 4:45 PM ET and 7:30 PM ET, the intent will be executed Notification Date plus 3 (N+3) **Future Buy-in process in a T+1 environment:** By-in intent can be submitted on T+1: 1. From prior to 4:00 PM ET the intent will be executed Notification Date plus 1 (N+1) 2. Between 4:45 PM ET and 7:30 PM ET, the intent will be executed Notification Date plus 2 (N+2)	No	Yes	Yes	Yes

6.3.3 International services

FUNCTION	DESCRIPTION	RULE CHANGE	SYSTEMS CHANGE	EXTERNAL PROCEDURES CHANGE	INTERNAL PROCEDURES CHANGE
AUTOMATED CONFIRMATION TRANSACTION (ACT)	The service is a sponsorship arrangement that allows Canadian broker-dealers access to NASDAQ without direct membership	No	No	No	No
CROSS-BORDER CLEARING AND SETTLEMENT (NY LINK)	The facility: • Allows CDS participants to move security positions between CDS and DTC using real-time interface communication • Clears and settles over-the- counter (OTC) trades with US broker-dealers through the National Securities Clearing Corporation (NSCC) Settlement is value date driven, not driven by the length of the settlement period	No	No	No	No

CROSS-BORDER CLEARING AND SETTLEMENT (DTC DIRECT LINK)	The service settles trades on a trade- for-trade basis. As with ACT, CDS and DTC communicate daily via reporting of northbound/southbound movements Settlement is value date driven, not driven by the length of the settlement period	No	No	No	No
INTERNATIONAL LEDGER RECONCILIATION SERVICE (ILRS)	The service provides ACT and DTC Link participants with an exception report that lists discrepancies between the given participant's ledger positions at DTCC and the participant's internal ledgers	No	No	No	No
INTERNATIONAL TRADE RECONCILIATION SERVICE	The service provides two reports: • Unmatched Trade report: Lists discrepancies between DTCC's trade input files and the given participant's internal daily trading activity records • Dropped Trade report: Highlights trades in the Unmatched Trade report that are past value date	No	No	No	No
DTCC REGULATION SHO (SHORT SELLING) CLOSE OUT SETTLEMENTS	The assumption is that the close out date will be the same as the settlement date The participant will have one day, not two, to cover a short without incurring penalties After close out date +1, if the short is not covered, CDS sets up two trades manually in Web Direct: 1. The buy-in trade with the close out specialist 2. The 5099 Buy and Sell trade for T+1 with the short-broker	No	Yes	Yes	Yes
INTERNATIONAL CUSTODIAL LINKS	The service moves eligible securities between CDS and the Peruvian central securities depository (CSD), CAVALI: CAVALI - facilitates moving eligible Canadian securities that are inter-listed on the Lima Stock Exchange (BVL) and the TSX and/or TSX Venture Exchange	No	No	No	No

6.3.4 SIES corporate actions and entitlements

FUNCTION	DESCRIPTION	RULE CHANGE	SYSTEMS CHANGE	EXTERNAL PROCEDURES CHANGE	INTERNAL PROCEDURES CHANGE
ENTITLEMENT EVENTS	Currently if the base security trades without due bills, ex-date equals record date minus 1. If the security trades with due bills, the ex-date equals due bill redemption date date minus 1 In a T+1 environment, if the base security trades without due bills, ex-date equals record date. If the security trades with due bills, the ex-date equals the due bill redemption date	No	No	No	Yes

MANDATORY EVENTS	Event set up is date driven, not driven by the length of the settlement period CNS restriction and trade conversion dates are calculated based on the agent expiry and payable dates provided by external sources	No	No	No	Yes
MANDATORY WITH OPTIONS EVENTS	Event set up is date driven, not driven by the length of the settlement period CNS restriction and trade conversion dates are calculated based on the agent expiry and payable dates provided by external sources	No	No	No	Yes
VOLUNTARY EVENTS	Currently the letter of guaranteed delivery period (cover/protect period) the expiry date plus 2. In a T+1 environment, the letter of guaranteed delivery period (cover/protect period) is expiry date plus 1.	No	Yes	No	Yes

6.3.5 Risk Management

FUNCTION	DESCRIPTION	RULE CHANGE	SYSTEMS CHANGE	EXTERNAL PROCEDURES / RISK MODEL CHANGE	INTERNAL PROCEDURES CHANGE
CNS PARTICIPANT FUND COLLATERAL REQUIREMENT RELATED INPUTS AND THRESHOLDS ("REPLACEMENT COST RISK")	The move to a T+1 settlement cycle will reduce participants' collateral requirements to the CNS Participant Fund. Changes will be required to accommodate the corresponding reduction in the portfolio of outstanding positions sent to the Risk system to calculate the CNS collateral requirements The holding periods that are applied in determining the correct liquidation value of outstanding securities will be reviewed There will be a transitional period associated with the move to T+1 from the T+2 settlement cycle	No	Yes	Yes	Yes
CNS PARTICIPANT FUND BACKTESTING	CNS Back Testing will be reviewed to ensure the correct holding periods are applied in determining the correct liquidation value of outstanding securities A review of the CNS Participant Fund backtesting results will be required to understand if there are changes to the outstanding position profiles due to the new settlement cycle environment	No	Yes	Yes	Yes
CNS STRESS TESTING	A review of the CNS Stress Testing shocks associated with the move to T+1 from T+2 settlement cycle will be performed	No	Yes	Yes	Yes

CNS DEFAULT FUND INPUTS/ CALCULATIONS	The CNS Default Fund risk exposures will be reviewed to determine if there are changes to the outstanding position profiles The transition impacts on the CNS Participant Fund and the downstream impacts on the sizing of the CNS Default Fund to be assessed	No	No	Yes	Yes
CNS LIQUIDITY FUND INPUTS/ CALCULATIONS	The CNS Liquidity Fund risk exposures will be reviewed to determine if there are changes to the outstanding position profiles The transition impacts on the CNS Participant Fund and the CNS Default Fund, and the downstream impacts on the sizing of the CNS Liquidity Fund to be assessed	No	Yes	Yes	No
COLLATERAL MANAGEMENT - SYSTEM OPERATING CAP	During the transition period: • Participants prefunding frequency and volume are expected to increase during the transition period in order to facilitate increase in settlements activities due to the shortened settlement cycle if their SOC remains the same • End of day settlement funding could be impacted as liquidity managers will have one day less to ensure the necessary funding liquidity for settlement	No	No	No	No

7 Next steps

This document is the first step in preparing and communicating CDS's strategy for successfully migrating to a T+1 settlement environment.

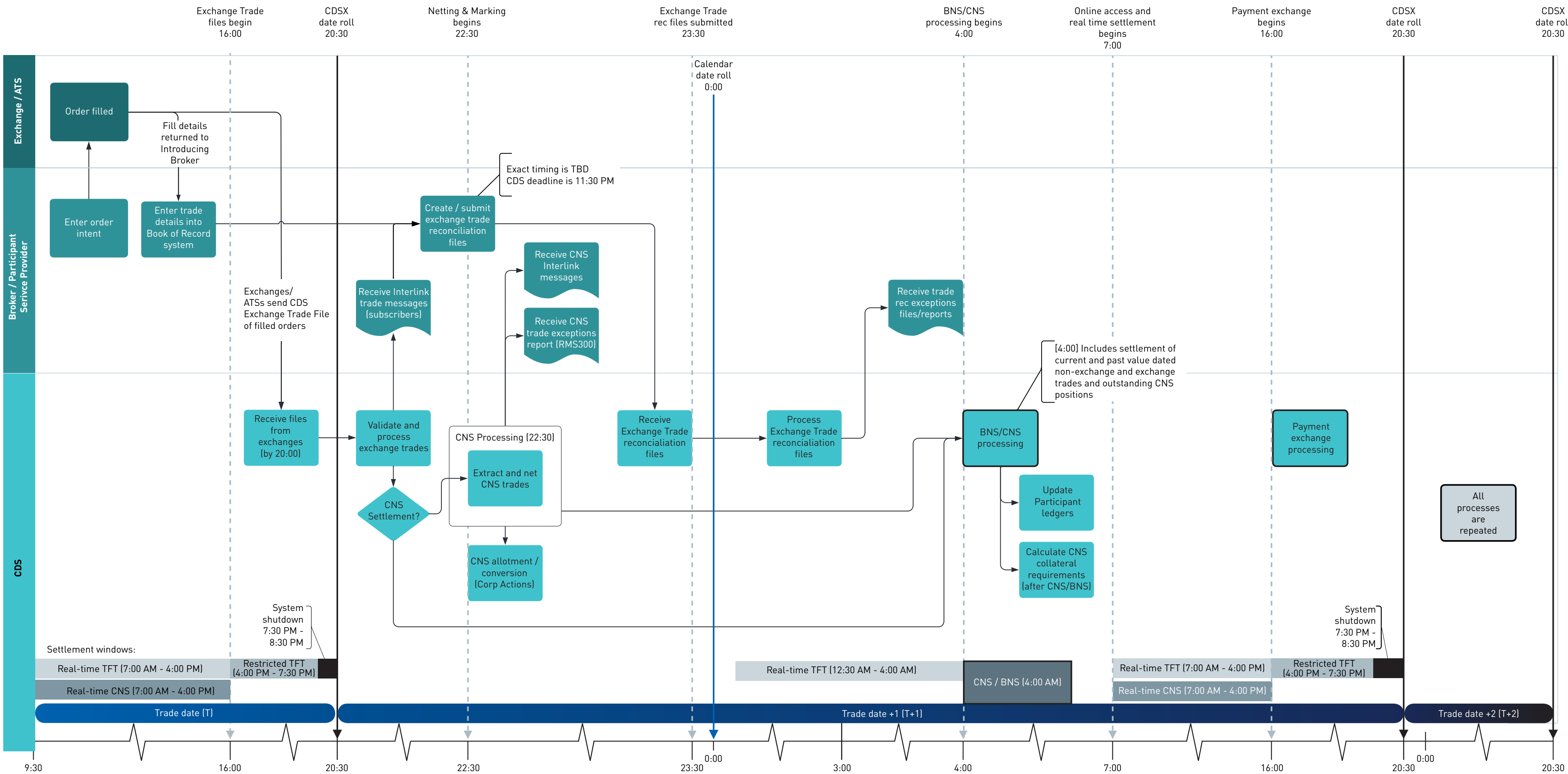
The next steps in moving to T+1 will take into account critical dependencies and are contingent upon cooperation and coordination between organizations, working groups, and regulators in order to migrate successfully within the established timelines. While CDS must develop and execute its own internal plan, successful migration requires a collaborative, industry-wide effort to develop an industry implementation plan, and conduct robust industry-wide testing.

CDS will continue collaborating with industry stakeholders through its ongoing participation in the CCMA T+1 working groups and will release its CDS industry test plan by early 2023.

CDS appreciates any feedback on this document, which can be submitted through your relationship manager.

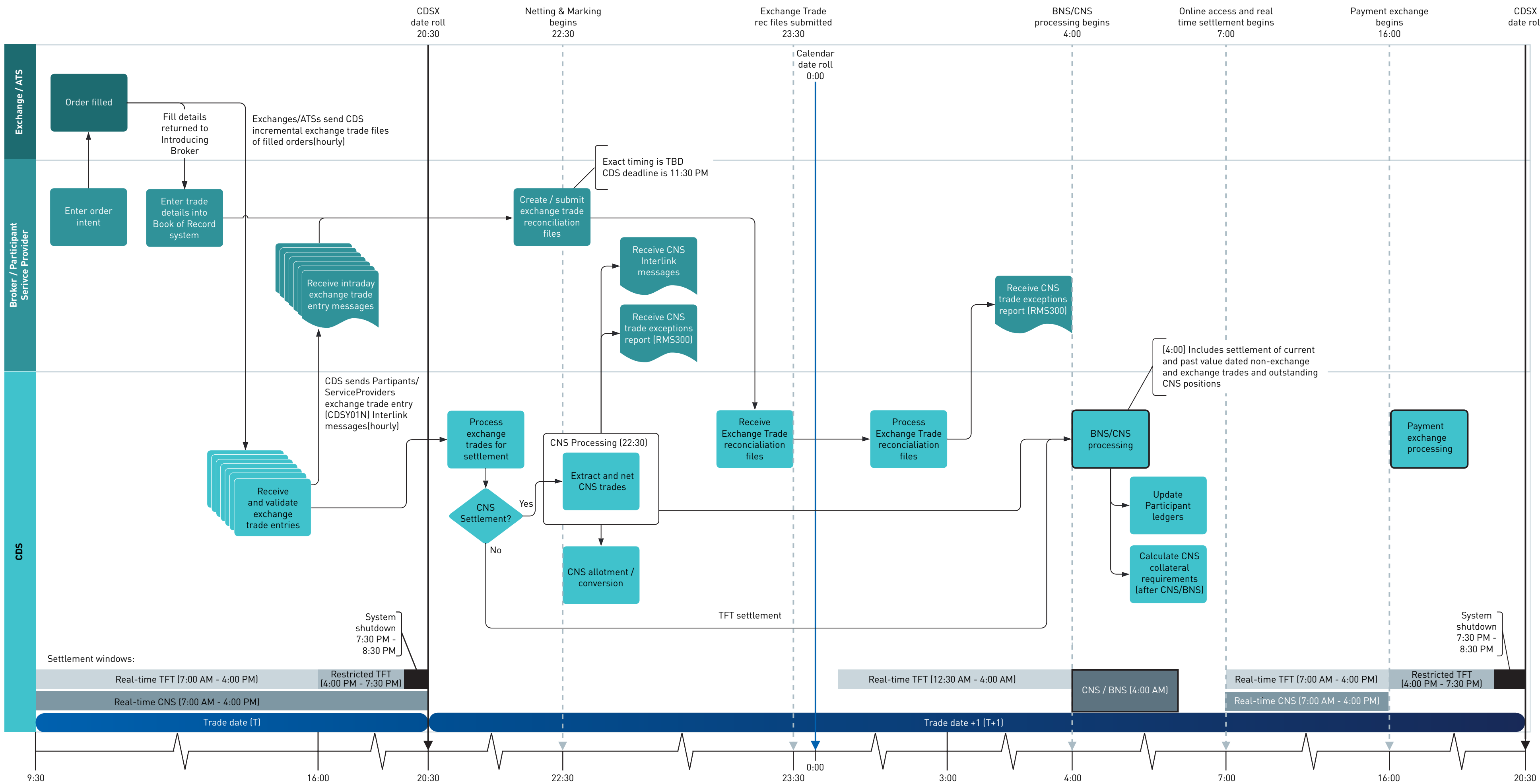
APPENDIX

Appendix 1A:
CDSX exchange trade process flow (current)



NOTE: TIMELINE IS NOT TO SCALE

Appendix 1B:
CDSX exchange trade process flow (t+1)



NOTE: TIMELINE IS NOT TO SCALE

Appendix 2: Sample of hourly trading volumes

Based on a limited sampling of three days of exchange trade volume data from three marketplaces (MPs) (representing an average of approximately 55% of daily trading volumes) between August 30, 2022 and September 2, 2022, the average hourly increments of total daily trade volumes for the MPs combined were as follows:

	10:00	11:00	12:00	13:00	14:00	15:00	16:00
AVERAGE OF 3 DAYS	**14%**	**18%**	**13%**	**10%**	**11%**	**11%**	**23%**

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