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<b>Date:</b>	May 8, 2018
<b>To:</b>	All Clients
<b>From:</b>	Settlement Product Management
<b>Attention:</b>	Managing Directors/Vice President/Directors/Managers
<b>Subject:</b>	Settlement Optimization

As highlighted in its recent white paper, [Modernizing the U.S. Equity Post-Trade Infrastructure](#), The Depository Trust & Clearing Corporation (DTCC) is exploring several ways to further shorten the trade settlement cycle beyond T+2, reducing risk and costs for members of the National Securities Clearing Corporation (NSCC) and The Depository Trust Company (DTC) by introducing new operational and capital efficiencies to transactional workflows.

The two key proposals from the white paper – **Settlement Optimization** and **Accelerated Settlement** – each build upon existing DTCC capabilities to significantly reduce capital requirements, mitigate systemic risk and lower operational costs, all while still preserving the resiliency of the current infrastructure.

The purpose of this notice is to provide clients with an overview specifically of the **Night Cycle Reengineering** component of Settlement Optimization, targeted for implementation in 3Q 2019, pending regulatory approvals.

### **Industry Engagement:**

An industry settlement optimization working group has been assembled to help DTCC refine the various settlement optimization enhancements and to help develop an implementation plan. The working group is comprised of representatives from many market segments and meets monthly. Clients interested in more information on DTCC's settlement optimization working group should contact their Relationship Manager.

DTCC has also established a dedicated settlement optimization website (<https://www.dtclearning.com/products-and-services/settlement/settlement-optimization.html>). The site will be used going forward to house information and documentation related to the effort, and as a way to proactively share implementation and testing details as it becomes available.

### **Settlement Optimization:**

Settlement Optimization proposes an alternative settlement model through the introduction of four primary processing enhancements. While each of the Settlement Optimization enhancements offers its own set of unique benefits, taken together these enhancements contribute to a more holistic and streamlined settlement process.

- **Night Cycle Reengineering:** Designed to maximize transaction throughput by optimizing available positions and controlling the order in which transactions are attempted for settlement. The proposal introduces a new, advanced settlement processing algorithm capable of evaluating each member's transaction obligations, available positions, transaction priority instructions and risk management controls and identifying the transaction processing order that maximizes the number of transactions settled. Night Cycle Reengineering will create a number of industry benefits including improved processing efficiency, reduced operational risk and improved intraday settlement finality.
- **Intraday Settlement Slice:** The introduction of an earlier funds settlement for transactions settled during the reengineered night cycle. The mechanics of the morning slice would mirror the current end-of-day funds settlement process. The intraday settlement slice will provide liquidity enhancements, promote intraday settlement finality, releasing trapped liquidity and reducing NSCC margin requirements.
- **Enhanced Asset Lending:** Designed to reduce fails and aggregate securities borrowing needs by providing additional lending opportunities. This optional service would allow DTC to automatically identify borrow and loan opportunities and generate transactions as appropriate.
- **NSCC Pledge Facility:** Allows NSCC members to pledge specific securities to NSCC to cover future CNS obligations and thereby reduce their NSCC margin requirements. For this optional service, DTCC would identify potential pledging opportunities by comparing each participant's future CNS delivery obligations with their available DTC positions and make pledge recommendations directly to the participant. These recommendations would include the potential impact of the pledge on that participant's NSCC margin requirement. Participants would decide if pledging to NSCC is the best use of the available position. Positions pledged to NSCC through DTC would be removed from the participant's marginable portfolio when the NSCC margin requirement is recalculated and will provide an opportunity for members to reduce their NSCC margin requirements. On settlement date, the pledged position will automatically be removed from the participant's DTC account and used to satisfy its CNS obligation.

Based on feedback from the Settlement Optimization Industry Working Group, DTCC plans to implement each of the proposed settlement optimization enhancements separately beginning with night cycle reengineering. As such, the remainder of this notice focuses on night cycle reengineering. Additional Notices will be produced when and if a decision is made to pursue other settlement optimization enhancements.

## **Night Cycle Reengineering:**

**The reengineered night cycle proposes fundamental changes to today's settlement process.**

### **Current Process**

For each business day, DTC employs two settlement cycles, which span two calendar days:

1. The first settlement cycle, the DTC night cycle, starts at approximately 8:30 p.m. S-1 and runs until approximately 11:30 p.m. S-1.
2. The second settlement cycle, the DTC day cycle, starts at approximately 11:30 S-1 and runs until 4:15 p.m. on S. At 4:15 p.m. on S, DTC performs end of day funds settlement settling all the valued transactions processed during the business day, i.e., 8:30 p.m. S-1 to 4:15 S.

In the current processing environment, the vast majority of transactions processed by DTC are known prior to the start of DTC's night cycle (8:30 p.m. S-1). These transactions, which include CNS obligations and institutional transactions, are collected by DTC and NSCC on T and T+1, but not processed in DTC for settlement until the start of DTC's night cycle on settlement date.

In processing these transactions, DTC subjects each transaction to a predetermined set of processing rules and algorithms that result in night cycle settlement rates of approximately 45%. That means more than half of the transactions eligible to settle in DTC's night cycle are unable to settle in the night cycle and are instead "recycled" into the day where they often require operational intervention.

### **Proposed Reengineered Process**

DTC will continue to employ two settlement cycles but instead of starting its night cycle at 8:30 p.m. S-1, the start of the night cycle will move to 3:00 a.m. on S. This change provides time for DTC to collect additional transactions and for members to approve and/or authorize transactions before the 3:00 a.m. night cycle start. At 3:00 a.m. on S, DTC will subject all the transactions eligible for processing to its newly developed processing algorithm.

The new processing algorithm, which is designed to maximize the number of transactions settled, will operate in an "offline" batch designed to allow DTC to run multiple processing scenarios until the optimal processing scenario is identified, i.e., the processing scenario that leads to the highest settlement rate. Since the optimization algorithm entails the execution of multiple unused processing scenarios, the results of the various scenarios will not be visible to members. Instead, DTC will only produce member output when the optimal processing scenario is identified. Based on preliminary work done to date, DTC anticipates it will take approximately 2 hours for the entire optimization algorithm to run. Assuming a start time of 3:00 a.m., DTC expects to begin producing member output at approximately 5:00 a.m. on S.

In developing the new settlement optimization algorithm, DTC developed a Proof of Concept (POC) that simulated the effectiveness of night cycle reengineering by running current production data through the new settlement optimization processing algorithm. The results of this POC showed an increase in night cycle settlement rates from 45% to approximately 90%, which is a significant 100% increase in the DTC night cycle settlement rates.

### **As a way to provide even greater processing efficiency, DTCC will be initiating a number of efforts to increase the number of transactions available for processing during the optimization batch:**

- DTC has identified a number of cutoffs that prevent members from submitting certain transactions to DTC prior to 3:00 a.m. These cutoffs will be changes to allow member input as early as 1:15 a.m. (For more information on the DTC cutoff changes, please see [Important Notice B8309-18](#))
- DTC is evaluating participant transaction input behaviors and will be working directly with certain members to support earlier transaction input. DTC will also be producing reports for each member showing the times they currently submit transaction input and transaction approvals to DTC. Members interested in obtaining their individual transaction input/approval reports should contact their Relationship Manager.

Questions regarding this important notice or the Settlement Optimization proposal should be directed to your Relationship Manager.