B #:	11380-19
Date:	May 20, 2019
To:	All Clients
Category:	Settlement
From:	Settlement Product Management
Attention:	Managing Directors/Vice Presidents/Directors/Managers
Subject:	Settlement Optimization

As previously highlighted in The Depository Trust Company's (DTC) important notice #8631-18 and the National Securities Clearing Corporation's (NSCC) important notice #A 8553, Settlement Optimization proposes a more holistic and streamlined settlement processes through the introduction of four primary processing enhancements that, when taken together will:

- Improve processing efficiency

- Promote settlement finality

- Reduce NSCC margin requirements for members

- Provide liquidity enhancements for members

- Reduce operational risk

Clients interested in learning more about Settlement Optimization are encouraged to access the link below. This website provides clients with a central location where all Settlement Optimization related materials are held including those mentioned in this notice as well as the white paper that introduced the concept of Settlement Optimization entitled "A Different Approach to Accelerating Settlement and Reducing Risk".

https://www.dtcclearning.com/products-and-services/settlement/settlement-optimization.html

Night cycle reengineering, the first scheduled component of settlement optimization, is **targeted for implementation on September 26, 2019 (pending regulatory approvals).** Night cycle reengineering is designed to maximize transaction throughput by optimizing available positions and controlling the order in which transactions are attempted for settlement within existing night cycle timeframes. The reengineered night cycle introduces a new, advanced settlement processing algorithm capable of

evaluating each member's transaction obligations, available positions, transaction priorities and risk management controls to identify the transaction processing order that maximizes night cycle settlement rates.

Over the past several months, DTC has simulated settlement within the reengineered night cycle by capturing applicable client position balances and transaction data from the prior business day and subjecting that data set to the new optimization algorithm. Under the new process, DTC has consistently seen an industry-wide improvement in night cycle settlement rates of 15% representing approximately 80,000 additional transactions completing in what will become the new night cycle. DTC, recognizing that individual member results will vary, has made the results of these simulations available to all clients and strongly encourages all firms to access the reports so they can see the impact that night cycle reengineering will have on their individual firms. Clients interested in viewing these reports should access the link provided above and download the "Night Cycle Reengineering Simulation User Guide" which is located under the "Documentation" section.

In addition to improved night cycle settlement rates, Night Cycle Reengineering allows DTC to:

- Incorporate certain transactions into night cycle processing that it currently cannot due to timing limitations.

- Create DTC Settlement fee reductions representing approximately $3,500,000 across all members.

- Better position the industry to implement future components of Settlement Optimization further reducing risk and creating additional processing and capital efficiencies.

Night Cycle Reengineering Processing Rules:

DTC's current night cycle processes transactions sequentially and in a pre-defined order for each client. This fixed and sequential processing logic, along with certain member prioritization capabilities, have been identified as the two key contributors to the less than optimal night time settlement rates within today's settlement process. The reengineered night cycle attempts to remedy both these conditions through the standardization of member priorities across all transaction types and a shift from the sequential processing model used today to a batch process that is capable of finding the optimal settlement path as outlined above.

The new processing algorithm will operate in an "offline" batch designed to allow DTC to run multiple processing scenarios until the optimal processing scenario is identified. Since the optimization batch entails the execution of multiple, unused processing scenarios, the result of the various unused scenarios will not be visible to members. Instead, DTC will only produce member output when the optimal processing scenario has been identified and the results of the batch have been processed in DTC's core settlement engine. DTC anticipates the entire process will take approximately 3 hours culminating in the production of output messages within DTC's existing Service Level Agreements.

Clients interested in reviewing the processing rules within the new night cycle should access the link provided above and download the "Night Cycle Reengineering Processing Rules" document which is located under the "Documentation" section.

Impacts to Today's Processing:

Other than the shift from today's sequential, pre-defined night cycle processing logic to the batch processing model outlined above, this initiative poses minimal changes to DTC's overall settlement process. Clients are reminded that:

- The entire settlement cycle will continue to span two business days, starting at approximately 8:30 pm S-1 and ending at approximately 4:30 pm on S, and consisting of a night and day cycle.

- All existing settlement cutoffs will remain unchanged.

- No new functionality, other than that described above, is being introduced.

- All DTC settlement related outputs and NSCC reporting will continue to be supported within existing Service Level Agreements.

- There are no changes to day cycle processing or end of day settlement flows.

While this effort is isolated to night cycle processing and development is largely internal to DTC, certain changes, described below, may have a limited impact on member processing;

- **IMS Submission Order:** This profile allows clients to define the order in which their transactions get submitted for settlement during today's night cycle. Because the optimization engine attempts to maximize settlement regardless of transaction type, this profile will become obsolete. In lieu of each client's ability to customize submission order based on individual transactions, DTC, based on client feedback, has created standardized delivery prioritization logic that prioritizes CNS deliveries over non-CNS deliveries when the security being delivered has potential rule 204 (Equities and Convertible Bonds) implications and non-CNS deliveries over CNS deliveries when rule 204 is not applicable.

- **Settlement Outputs:** Generally, settlement output is made available via "batch" or "real-time" messaging. Batch messaging, commonly referred to as "DTF" files, is not changing, i.e., DTC will continue to support the various DTF files and do so within current timeframes. "Real-time" messaging output options include both ISO and proprietary reporting. Currently, proprietary messaging related to night cycle activity is produced at approximately 1:15 a.m. This will not change. However, "real-time" ISO messaging is currently made available throughout the night cycle with messages being generated to subscribers as processing occurs. Since settlement processing in the reengineered night cycle only occurs once the optimal scenario has been identified and the results of the batch have been processed, ISO output will only be made available once the reengineered night cycle completes at approximately 11:30 p.m. on S-1.

- o Please note, the change listed above relates to transactional settlement statuses for applicable transactions only and that other communications with clients e.g., RAD updates, ACKs & NACKs, etc. will remain unchanged.

- **IMS Recycle Order:** This profile allows clients to define the order in which their pending (recycling) transactions get retried throughout the day. One of the options currently offered, viathe DTC IMS "yellow profile", allows clients to designate priorities across all pending items within a given CUSIP. This client defined priority requires DTC to process the highest priority item before attempting to redeliver other items. This prioritization capability will be suspended during the reengineered night cycle while the optimization engine determines the optimal settlement path, but it will resume once the reengineered night cycle process completes.

- **Accounting Summary:** As transactions complete throughout the day, DTC provides an on-screen accounting summary that highlights how a particular transaction impacts various balances within a client's account, e.g., NA & MA balances, memo segregation, settlement balance, collateral monitor, etc. Due to the nature of batch processing, the accounting summary screens will no longer be applicable for the activity processed during the night cycle.

  - o Current subscribers to the "DTC EOD Liquidity Report" (fee id 741) are advised to take note of the potential impact that batch processing may have on their reports.

Client Testing:

Although member changes resulting from night cycle reengineering are expected to be minimal, DTC will support both functional and systemic testing of night cycle Reengineering:

- Functional (Regression) Testing: DTC is targeting June 13, 2019 to deploy the new Night Cycle Reengineering logic into its PSE (U) region. Once implemented in PSE, DTC will subject all client submitted activity that is eligible for the reengineered night cycle to the new night cycle processing logic. This process will run each night through production implementation and remain in place permanently in support of any future testing needs of clients. Functional testing allows clients to validate various approvals flows and cutoffs to ensure processing is working as expected, e.g., RAD approved receives are attempted in the optimization batch, memo segregation instructions are processed and considered in a timely and accurate fashion, etc.

- Systemic Testing: As previously noted, night cycle reengineering involves limited new functionality and no changes to existing outputs. Regardless, DTC has been asked to support limited systemic testing entailing the distribution of simulated client output. Although discussions with the industry are on-going, DTC plans to provide simulated DTFPDQ files using production data. Production of the simulated output files will allow clients to verify that the PDQ file can continue to be consumed without issue. DTC is planning to produce the DTFPDQ file, and other outputs if requested, for a limited time later this summer and will confirm the exact dates and reports in a future notice.

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