Response to SEC Questions Regarding the Joint Industry Plan; Notice of Filing of the National Market System Plan Governing the Consolidated Audit Trail by;

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Several issues/questions arise from the current Consolidated Audit Trail ("CAT") system concept. To begin:

1. CAT is an order and trade execution data project; not a complete securities transaction audit trail. Discussed below are methods to enhance the data to make the system a more robust and complete audit trail.
2. FINRA, as quoted below, appears to have the technology mostly in place to accomplish what the proposed CAT system is designed to achieve. If it does not contain all elements of the proposal FINRA suggests, its' systems are easily adaptable through upgrades/changes. The most efficient and cost effective way to develop a securities audit trail seems to be for the SEC to harness the power of the existing FINRA systems.
3. FINRA is one of three remaining bidders for the CAT system. FINRA appears to be substantially ahead of other bidders just in the fact that it already deals with most of the required data for the CAT system or can easily add any new required elements.
4. FINRA has one other major advantage over all other bidders; it regulates the exchanges, broker-dealers, alternate trading systems ("ATSs") and clearing firms required to submit data to CAT. Reporting compliance will be very important in order for any audit trail to be effective. This type of compliance by market participants has been troubling in the past. There needs to be consequences for non-compliance with the reporting requirements to this data stream. Outside contractors do not have authority over the entities reporting to the system; FINRA does.

It appears that FINRA is the proper entity to enact an audit trail. See Exhibit A attached to the end of this document.

Even without the additional broker-dealer data the CAT will obtain in the future, FINRA could enhance its current supervisory capabilities if it would incorporate the available data discussed below into its existing system.

Why The Effort to Compose A More Complete Audit Trail is Important

In 2010, when then SEC Chair Mary Shapiro announced the CAT initiative the SEC took a narrow view of the data required to construct an audit trail. At this point, this project has been years in the making. We believe the SEC should reconsider the scope of Rule 613 and ask whether a more broad and complete audit trail is really what regulators need to efficiently and effectively perform their duties.

Moreover, the SEC should consider adapting a system that is mostly in place and currently operated by FINRA. Combining the SRO's oversight abilities with the SEC's plan for an audit trail seems to make the most common sense.

Absent a reconsideration of this proposal, it is likely the CAT will be very limited in value and potentially difficult ultimately to implement.

Most likely, if the CAT is developed as anticipated, a broader audit trail will not be contemplated for decades, if at all. In this situation, the other tools regulators need to effectively monitor the markets will continue to be unavailable or not readily available and regulators will be relatively powerless to uncover in real-time the illegal behavior being executed in the markets.

We propose to add additional information to help in the generation of investigative and enforcement tools that affect a transaction's life cycle and provide regulators more enhanced data in order to complete an audit trail from pre-execution through the settlement process of the transaction. The SEC's goal is to form a more complete audit trail than currently exists and it is very important to consider all potential metrics that should be included and that are relevant to investigations and the securities laws.

Economists, statisticians, enforcement professionals and others would agree that an audit trail would be most effective if there is a complete data set that can be relied upon and most importantly reconciled.

A complete audit trail would create the sunshine of transparency for regulators and let everyone that is participating in the markets know that data-driven enforcement is ongoing.

What CAT Will Produce Under Current Parameters

The CAT proposal is supposed to provide regulators "direct access to a single data source that would be more complete than any current data source." The data should "enable regulators to more efficiently carry out investigations, examinations, and analyses because regulators could acquire from a single source data that they would otherwise need to compile from many data sources."

Having the data which is usually gained through requests become instantly available will benefit regulators and the industry by reducing the number of data requests. Easily available and more complete data will benefit regulators efforts in surveillance, investigations, examinations and analysis.

The CAT proposal states:

> "Rule 613 required the ***SROs*** to submit a national market system ("NMS") plan to create, implement, and maintain a consolidated audit trail ("CAT") that would capture customer and order event information for orders in NMS securities, across all markets, from the time of order inception through routing, cancellation, modification, or execution in a single, consolidated data source."

This is a worthy undertaking in order to catch the initial seconds of orders placed into the market and the actual execution of a trade. However, this data will not capture an audit trail of the securities transaction.

We question whether the data being captured is relevant to achieve the SEC's goals, or whether the data is being collected for statistical purposes and would simply overwhelm usability of the audit trail.

In a nutshell, it appears the CAT system is trying to capture the fraction of a penny difference between orders that are executed to determine if an order actually had best execution. In the world of high frequency trading, this may not be a realistic goal. The proposal may be parsing information on such a minute scale that it overwhelms the system and does not allow for the capture of relevant information and the generally stated goals. Bids and offers are submitted (and often cancelled) in microseconds and trades are executed between those pricings. It might not only be impossible to determine if these were at the best price, but it might be irrelevant.

Proposed CAT System

The current proposed CAT will include order and execution data, with market participant and customer information. This data is to be collected from SIPs and SRO audit trails initially, and will later be supplemented by data from broker-dealers/clearing firms. This phased-in approach will render the initial CAT system incomplete for years and therefore unable to achieve its full purpose of an audit trail for the millisecond order entry and trade executions occurring in the marketplace.

It has been typical that industry participants will request additional time in order to create systems to comply with new record keeping requirements. This should be expected to occur with this proposal, which suggests that it could be an additional 1 or 2 more years before the anticipated data becomes an active part of the CAT system (ultimately 4 or 5 years after implementation of the CAT).

Moreover, from the voluminous proposals regarding the CAT system that have been developed over the last six years and that continue to be referenced in today's proposals, there appears to be questions as to if all broker-dealer order and trade execution data will be required to be reported to the system. There are issues discussed below that raise these relevant questions.

Having experience in large data sets, certain things like assigning unique IDs to every person that ever trades a security could render the data quite difficult to use over time. Even greater difficulties could arise from the 'Customer Information Approach' proposal to have each broker-dealer assign their own unique customer IDs.

We believe a unique ID for every client may be unnecessary and they could be applied to only those with a certain threshold of trading activity. For example, the SEC currently distinguishes between participants that file Large Trader Reports versus average retail investors trading through brokerages. In other words, a retail investor that places and executes trades 20 times per year or even 20 small transactions per month through one or two retail brokers is not a threat to the securities markets and identifying information not relevant could be considered and argued to be a potential privacy issue that could result in years of litigation further prolonging the implementation of the full CAT system.

The SEC expects the CAT will improve surveillance, investigations and analysis of market manipulation, market disruptions/events and rulemaking initiatives.

With the experience, technical knowledge and sophistication that FINRA has gained over an extended period of time, the following goals anticipated through the CAT system may be better achieved through enhancing FINRA's already existing market monitoring and surveillance systems. Simply put, it appears that a standardization of the data provided to FINRA and additional information from broker-dealers could result in the development of an equally efficient system or a more robust order and execution audit trail than the new to-be-developed CAT.

Figure 1

The following are categories included in the proposed CAT system:

- Pre-execution bids and asks
- Routing and re-routing
- Cancellations
- Executions
- SIP data and SRO audit trails
- MPID and customer information (phased in over a number of years)
- Allocation records (phased in over a number of years)
- Open/close position information for equity trades (phased in over a number of years)

The expected outcome/goals of the CAT:

- A complete and consolidated audit trail that would "enable regulators to more efficiently carry out investigations, examinations, and analyses because regulators could acquire from a single source data that they would otherwise need to compile from many data sources."
- Improve accessibility of the data for regulators through direct access and dramatically reduce the number of data requests.
- Improved data quality will benefit regulatory surveillance, investigations, examinations, analysis and reconstruction of market events, and analysis in support of rulemaking initiatives.

The following are potential trade violations to be monitored from the CAT:

- The CAT data will "aid in the analysis of potential manipulation"… "(e.g. marking the close, order layering, spoofing, wash sales, trading ahead)."
- Short sale manipulation: "no current data source allows regulators to directly identify when someone is buying to cover a short sale. Regulators could use this information to better understand short selling and for investigations of short sale manipulation."
- "Improvements in market surveillance and investigations could come in the form of 'facilitating risk-based examinations, allowing more accurate and faster surveillance for manipulation, improving the process for evaluating tips, complaints, and referrals . . . , and promoting innovation in cross-market and principal order surveillance.'"

Below, we propose additional information that could aid regulators significantly in their goals to "enable regulators to more efficiently carry out investigations, examinations, and analyses".

A Proposal for Additions to CAT, a Securities Transaction Audit Trail ("STAT")

We believe and think most will agree, an audit trail should include each transaction from order placement, through execution and ending with settlement. If an audit trail leads only up to the point of execution, all of the activity post-execution is essentially off-camera.

Settlement of securities transactions (post-execution) is a vital part of a supply and demand market, the securities laws and enforcement duties.[1] Therefore, an audit trail without transactional settlement activity does not provide a full reconcilable and thorough system for analysis and investigations. The current CAT proposal will leave regulators with a limited slice of the data necessary to accomplish effective enforcement for the majority of securities laws. Moreover, the CAT data may leave regulators with little to reconcile against to determine completeness and accuracy of the submitted information.

If illegal behavior is found in post-execution transactional activity, it may then show the trade executions were also in violation of securities laws, rules and regulations.

An audit trail should allow monitoring of share supply availability, short interest reporting and other metrics that could be easily made part of the system using the current available data (most of which is produced by SROs). This will give regulators a more holistic view of the broader metrics in the market in order to indicate red flags for potential problematic trading.

If a transaction is a short sale, the securities lending/borrow information should be included as an aid to regulators to be able to detect which short sales are not associated with borrowed shares. If the goal is to enhance enforcement against risk-based transactions, this would be a straightforward way to accomplish such a purpose.

Another important inclusion in an audit trail are the shares outstanding for each security, as this information provides the fundamental basis of how regulators can determine what is occurring within a security.

As an example, a stock has 10 million shares outstanding and it typically trades 3 million shares per day, but sometimes trades 12 million shares in one day. If an audit trail does not have knowledge of the shares outstanding, it cannot raise red flags when all of the shares are being turned over every 3 days or entirely in 1 day. This is not a hypothetical example, as this rate of turnover occurs in some important U.S. securities.

Below are considerations for the central parts to an audit trail that would allow regulators to follow an order throughout its' life cycle, whether it ends in a cancellation or execution and settlement. We are sure SROs can add to this discussion of a better audit trail, with additional information that is produced readily by the industry and SROs.

We concentrate on just equities to give a simplified concept of what an equity audit trail should contain to analyze the completion of securities transactions. Therefore, the discussion

[1] For example, see Securities and Exchange Act Rules 15c3-3, 15c6-1 and 17Ad-22; the anti-fraud provisions under the Securities and Exchange Act Sections 9, 10 and 15; and Regulation SHO Rules 203 and 204. In addition to federal laws, rules and regulations, there are numerous FINRA and SRO/exchange rules that apply post-execution.

does not include options, futures or other derivative products the SEC may deem important to be included in an additional audit trail. Again, the exchanges/SROs that formed this CAT proposal may have relevant information to be added to enhance the effectiveness, straightforwardness and simplicity of use of an audit trail for regulatory oversight of securities transactions.

Following are discussions of our proposal of data that should be included to make a more complete audit trail, that we will call a Securities Transaction Audit Trail ("STAT") for the purpose of this comment letter.

1. Additional Pre-Execution Short Sale Locate Data

The share availability data is currently distributed in the morning by firms that have shares available to loan for short sales. There are currently no intraday share lending controls across the markets and no central repository for availability information. As an example, a firm showing 100,000 shares available to borrow at the beginning of a day could be used by multiple firms to short sell 800,000 shares because in the opaque lending market, no systems exist to stop this from occurring. A system referred to as 'hard locates' would be the effective way to curtail this dangerous activity.

This can be easily accomplished through a central securities lending database.

A check and balance on what is occurring in the securities lending market are the actual inventories owned/controlled by each clearing firm. This information is produced and is readily available on a daily basis from the Depository Trust and Clearing Corporation ("DTCC").[2]

[2] The DTCC is the parent company of the National Securities Clearing Corporation (NSCC) and both operate the national clearance and settlement system. The DTCC and its subsidiaries act as a settlement bank for securities transactions.

Figure 2

Short Sales, Locates and Securities Lending - A Central Securities Lending Database:

- Under our proposal, all shares available to be loaned should be uploaded into one database with the lending party identified (as is the practice today with lists sent to clearing firms). Throughout the trading day, the data would be updated in real-time; shares that are committed for delivery of short sales or otherwise should reduce the number of available securities and new availability of securities coming into the lending market should be added to the database by the lending party (a running inventory of share lending and borrowing). It should also include internal broker-dealer inventory that is available for lending, regardless of whether the inventory is available for external or internal borrowing from a firm. It is not difficult to have this reported in real-time.
- This has several benefits. It allows regulators to have transparency in a very opaque part of the securities markets, i.e. the share lending transactions. Regulators will be able to follow the supply of share availability for lending versus short sale executions in order to determine whether there is a reasonable amount of lending and supply in relationship to the short selling activity. Regulators will be able to ascertain whether the parties showing availability of shares for lending in fact have in their possession and control the shares proposed to be lent through daily observation of inventory provided to regulators by the DTCC (a SRO operating under the authority of the SEC).
- The short selling that is registered each day by the exchanges can then be compared to the actual shares available to short and the number of shares that were decremented for the purpose of borrowing. This data could be compared to short interest and fails to receive/deliver within the National Securities Clearing Corporation ("NSCC") reported post-execution.

The aggregated data could be made available to investors for them to make informed decisions knowing whether or not there are certain levels of stock available to lend, versus what is available today to investors, which is either an 'easy to borrow' or 'hard to borrow' status. This transparency would greatly improve the aspects of available information to determine true supply and demand in a very important sector of the securities trading markets, i.e. the borrowing and lending of shares, which is in addition to the pre-market and execution data captured by the currently proposed CAT.

Because firms already automatically distribute share availability information to broker-dealers and clearing firms at the beginning of each trading day, this is not a new or complex process to have the data reported into one central location.

A legitimate lending market as anticipated by the U.S. securities laws is very important to the operations and proper functioning of the U.S. capital markets. Opaque lending markets are not healthy for the U.S. financial system. This type of central securities lending database will add

integrity to the supply and demand market processes that the U.S. system is designed to reflect. The securities lending market should be a robust secondary market of stock to lend that can provide revenues to the lenders.

Short sales with unlimited supplies of synthetic securities do not contribute to the underlying fundamentals of the economic system. A properly functioning securities lending market provides natural constraints on short selling through supply availability or the price to borrow (this is the way legal contractual short selling is required to occur under the U.S. market structure system).

2. Execution

A full audit trail would include transactions both on and off exchange. If the goal is to aid enforcement and investigations, orders and executions in Alternative Trading Systems/dark pools or other trading venues and internalized within broker-dealers are equally important as those on national securities exchanges.

If an audit trail allows any type of loophole where data is not produced from an ATS, internalized transactions, non-FINRA member broker-dealers, or from other loopholes/exemptions, illegal activity can simply be shifted out of sight of the regulators. For example, the SEC reports increasing growth in certain transactions sent to ATSs, but not reported to regulators:

> "Broker-dealers that are not FINRA Members accounted for 48% of orders sent directly to ATSs in 2014, 40% of orders sent directly to ATSs in 2013, and 32% in 2012."

These orders were not reported to FINRA's Order Audit Trail System. This example of growth in non-reported events is significant and is indicative of how certain aspects of the securities laws, if not inclusive of all orders/transactions, can be exploited so some activity which may be detrimental to the markets is not reported to regulators. This is another reason an incomplete audit trail could fail in critical aspects to be useful. An opportunity to exploit reporting loopholes will be taken advantage of by those wishing to game the regulatory system. This is simply a historical truth.

It is important that an audit trail includes all off-exchange trading information, but a question arises whether these venues are good for the markets and public interest because there is no direct SRO oversight.

Currently, some market participants, clearing firms (including direct market access providers), ECNs and other venues including dark pools use pre-netting, internalizing, compression and summarization processes to reduce the number of trades submitted to the NSCC by millions of transactions per day.[3] All executions in U.S. securities should be reported to an audit trail system and to the clearing agency operated by the NSCC in a non-compressed form.

Figure 3

Required Elements for Order/Execution Reporting

Execution Data:

- Exchanges and other trading venues collect some information for their audit trails which is not relevant for a regulatory audit trail (for example, it may be operational instructions for their own system). The data fields and formatting submitted to an audit trail need to be relevant, as simplistically usable as possible and consistently reported. For example, the NASDAQ's 'Equity Trade Journal' is a relatively straightforward reporting of the data essential for transaction monitoring, which could provide an initial model as a base to add any further required information.
    - The March 3, 2014, *CAT Request for Proposal* states: "The SROs anticipate that data will be submitted by all CAT Reporters in a uniform electronic data format that will be defined by the CAT."
- It is very important that there are serious consequences for non-compliance with an audit trail. In the past, FINRA has had difficulties with reporting non-compliance to its' systems. There are a significant number of cases in which FINRA has found non-compliance with its' reporting requirements and there are repeat offenders that continued to ignore previous FINRA actions against them. This is why it is so important to have a mechanism to enforce compliance and significant consequences for non-compliance with this type of audit trail.

[3] For example, clearing firms Wedbush and GETCO debated the DTCC when it wanted all trades sent through NSCC in a real-time uncompressed trade-by-trade reporting format.
See Letter from GETCO, LLC to the SEC, May 9, 2006. http://www.sec.gov/comments/sr-nscc-2006-04/sschuler050906.pdf "The amount of compression that is taking place in the marketplace is substantial and may in fact be **substantially underestimated**. ***We estimate that millions of trades are compressed into hundreds.***"
and Letter from Wedbush Morgan to the SEC, May 25, 2006. www.sec.gov/comments/sr-nscc-2006-04/rjrichards1985.pdf

Figure 3 Continued

ATSs:

- The reporting of this data to an audit trail is absolutely non-negotiable because a transactional audit trail cannot be completed without all of the input from the various executing venues, whether they are exchanges or other market venues/participants.
- The mechanics of reporting from various venues all have to comply with the same relevant data inputs.
- Under the order and execution proposal for the current CAT, after years required to phase in the data from the various sources, it is suggested that: "Because all SROs are Participants in the Plan, under the Plan all broker-dealers with Reportable Events, including off-exchange, would be required to report the required CAT Data to the Central Repository. And, the inclusion of these additional Reportable Events would make CAT Data *more complete than the combination of current SRO audit trails*." For a true audit trail, this is not an acceptable outcome. An audit trail needs to be accurate and must be able to be reconciled so the operators and users of the information can in fact trust the output. If the information is not going to be complete and reconcilable, it is misleading to be named an 'audit trail'. Most investors would take the meaning of the word 'audit' very seriously and believe there is strong oversight and accounting for the transactions occurring in the marketplace. Under the current CAT proposal, a true and complete transactional audit trail is not achievable.

Electronic Liquidity Providers:

- Electronic Liquidity Providers ("ELPs") are a separate breed of traders that have grown out of the high frequency trading world. Some stem from direct market access participants where there is little oversight in the current environment. These liquidity providers have no obligation to remain trading in a stressed market environment and they can and do leave with their type of liquidity in a heartbeat. They should be under heightened scrutiny and an expanded audit trail would give regulators a much clearer picture of their activity.
- Importantly, some of the trades from these participants may not be required to be reported in real-time, but prior to the following day's open, which allows for the potential to submit altered transactional activity. ELPs can be a source for a variety of detrimental market effects including manipulation.

Figure 3 Continued

Market Access Providers:

- With regard to trade identifiers used by market access providers, some clearing firms have used one or more Market Participant IDs to conceal the identity of other participants/clients using these services to manipulate markets. It has been highly debated whether market access services under these current circumstances should even exist (in essence, the renting of a market maker ID by non-market making clients).
- In the case of an audit trail there needs to be a distinction between a market maker using its own ID and large trading clients of the market maker. Serious problems have arisen in the past from the concealment of trading under a sponsored access market provider ID, when in fact it was the clients executing the disruptive trading. Again, FINRA is in the position of authority over these issues as it assigns Market Participant IDs to trading firms.

3. Clearing Firm Reporting

The clearing firm stock records at the end of each day produce short interest data for each security, which would be automatically reported to a STAT. This is an automated process of reporting short interest every two weeks to FINRA, which can be easily adopted to be reported daily to regulators.

All clearing firm stock records of the parent company and its' divisions and subsidiaries need to be included for reported short interest in U.S. securities, because undisclosed short position liabilities can be concealed by internalizing short positions offset by synthetic loans between subsidiaries.

Stock records also include information on shares failed to be delivered/received. The long positions in the clearing firm stock records should agree with their respective positions at the DTCC. This information would considerably aid regulators in their investigations of manipulative and illegal short selling.

Figure 4

Submission of End-of-Day Data from Clearing Firm Stock Records:

- Short interest
    - This is already available every day from clearing firm stock records. Currently this data is reported twice per month, but could be reported at the end of each day to regulators.
- Long positions (to be compared to DTCC inventory)
- Short positions across all firm entities other than those reported as short interest
- Fails both at NSCC and outside of the national clearance and settlement system

4. Clearance and Settlement

A STAT audit trail needs to contain important clearance and settlement information from the DTCC; the SRO that operates the national clearance and settlement system. The NSCC data would supplement the daily analysis of trading in securities by providing the clearance of long and short sales by the number of trades, volume and prices (which can be compared to the trading data and be drilled down into trade-by-trade segments if red flags of problematic trading are raised). The DTCC also records and reports to clearing firms each day's clearing firm settlement activity and Security Position Reports.

The benefit of this input is extremely significant because it is the process that completes the contractual transaction of net cash versus securities transferred between firms. In essence, the DTCC/NSCC is the bank and the last stage of an equity securities transaction. An audit trail without this information cannot be an actual audit of the transactions because there is nothing to reconcile the trading to without clearance and settlement data (i.e. the proverbial securities 'bank statement').

Red flags could be raised automatically for high volume sellers who have no actual ownership interests in the securities they are selling.

Recently, there have been discussions of using block chain systems to aid securities settlement. Setting up this type of system is not an easy, straightforward undertaking and various block chains may be disruptive to the national clearance and settlement goals set forth by Congress.

The U.S. already has a proven, sophisticated method of securities clearing and settlement operated by the DTCC and it has been prepared to utilize straight-through processing ultimately resulting in same day settlement for well over a decade.[4] The systems in place today are capable of clearing all the transactions in the marketplace, comparing them and sending instructions of cash and share movement between parties at the end of each day.

The best clearance and settlement ledger in the industry is currently operated by the DTCC. If transparency is the motivation for block chain ledger accounting, this could easily be remedied by making the DTCC/NSCC data more transparent to regulators, industry participants and investors. The current DTCC clearance and settlement system has the available information that could be easily supplied to regulators for this purpose.

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[4] In 2004, James Koster, managing director of DTCC Product Marketing and Development stated: "DTCC's focus has always been on maintaining an efficient marketplace that can facilitate clearance and settlement transactions efficiently and quickly… We continue to develop new solutions that push the industry toward straight-through processing -- all in the face of ever-increasing transaction volumes, and all with an eye to reducing costs for our customers." http://www.prnewswire.com/news-releases/dtcc-hits-new-transaction-record-for-volume-processed-on-may-10-74125007.html
A 1998 Government Securities Clearing Corporation ("GSCC") (a DTCC subsidiary) memo on *Interactive Messaging and Real-time Comparison*, stated: "GSCC's ultimate goal for straight-through processing remains the same – to accurately capture, compare, guarantee, reconcile, settle (when appropriate) and provide for the risk management of trades on the same day they are executed."
http://www.dtcc.com/~/media/Files/Downloads/Clearing-Services/FICC/GOV/interactivemessagingbulletin.pdf?la=en

The NSCC has been attempting for years to obtain real-time submission of all trades to its system, which would disallow pre-netting, compression and summarization. These efforts to gain a flow of all transactions through the NSCC have been opposed by industry participants and NSCC has been unable to accomplish its' goal. Any accounting system is only as good as the information it receives.

An important change to the NSCC system would be for the SEC to eliminate ex-clearing of trades outside its' system. In the original crafting of Regulation SHO, the industry told the SEC that ex-cleared trades were "rare" and thus ex-cleared transactions have become a detrimental loophole in the national clearance and settlement system. This NSCC/CNS ex-clearing trade reporting loophole/problem developed significantly after the implementation of Regulation SHO (January 2005) and Rule 204-T (October 2008). Clearing outside of the national clearance and settlement system increased with the growth of high frequency trading/trade compression/internalization, unscrupulous market access providing clearing firms and multiple non-exchange trading venues.

The DTCC has stated it does not know the extent of ex-clearing because the transactions obviously do not go through its system.[5] The SEC stated it would revisit its ex-clearing decision if ex-clearing was found not to be rare; it is not rare and this loophole should be closed.[6]

In a typical audit performed by an accountant, the books and records are compared to the bank statement to provide a fact-based analysis of whether the data is correct and the accounting balances with the bank. There is nothing really different here with the clearance and settlement system; it is a critical part of an audit trail and the reconciliation process to determine whether contractual settlement has occurred.

5. Reconciliation of Collected Data

In addition to the reconciliations discussed above for: a) order data from SIPs, SROs and other execution venues (i.e. ATSs, etc.), b) short selling versus shares located through a central lending database and the lending firm's DTCC inventory, c) execution data from the Consolidated Tape, SIPs, SROs, other execution venues, broker-dealers, clearing firms and the NSCC/CNS transactional activity reports, d) short sale execution data from SROs and other execution venues compared first to the shares located and borrowed for delivery, then to the

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[5] Susan Cosgrove, DTCC Managing Director, Clearance and Settlement/Equities stated: "Because these trades are processed outside of NSCC's systems, it is ***impossible*** to estimate their numbers – making them **essentially invisible to regulators** and the industry and creating **systemic risk** during a time when financial firms are searching for new risk mitigation strategies."
DTCC Bylined Articles, *Transforming The Processing of Fails And Other Open Obligations*, October 1, 2009, http://www.dtcc.com/en/news/2009/october/01/transforming-the-processing-of-fails-and-other-open-obligations.aspx

[6] Division of Market Regulation: Responses to Frequently Asked Questions Concerning Regulation SHO, Question 5.3: Does the close-out requirement apply to delivery failures that do not occur at a registered clearing agency? Answer: **We interpret the close-out requirement to apply only to fail to deliver positions at a registered clearing agency. Our interpretation is based on our understanding that transactions conducted outside the Continuous Net Settlement System ("CNS") operated by the National Securities Clearing Corporation ("NSCC") are *rare*. If this historical pattern changes and a significant level of fails are not included in CNS, we will reconsider this position**. http://www.sec.gov/divisions/marketreg/mrfaqregsho1204.htm

NSCC fails to receive/deliver and transfer of beneficial ownership of shares, e) clearing firm long positions compared to DTCC positions, NSCC fails to receive/deliver and internalized positions, and f) clearing firm short interest/shares borrowed compared to shares located and borrowed through the securities lending database, NSCC fails to receive/deliver and internalized positions, below we provide further ways to analyze trading, securities lending and settlement information.

At the end of the day, data from an audit trail can be reconciled through a simple automated process using the end-of-day data.

The aggregated trading positions by each market participant (known as Market Participant Reports by SROs) can be used to identify the level of a participants' activity in each individual security.

The current market makers in a security (those claiming market maker exemptions for bona fide market making transactions) can be identified in data sets which are similar to the NASDAQ's Daily Market Participant Position Report.

This information produced by SROs each day can be used to identify irregularities between market makers versus non-market maker participants.

To monitor, analyze and reconcile data for individual securities, end-of-day information can be used efficiently and cost-effectively to create clarity for regulators. Using certain fundamental metrics (shares outstanding, short interest positions, NSCC fails to receive/deliver, market participant trading activity, un-netted and netted short/long sales and other end-of-day metrics), the system can produce a daily beginning of positions that are relevant to the next day's trading activity. We suggest these types of data relationships in Figure 6.

Our suggestions for STAT type additional information is particularly designed to help regulators quickly find anomalies of a larger scale that are not being captured today in real-time, which could pose a threat to the marketplace or the market for a security.

Using these records, regulators can gain a broader holistic picture of the activity in the market from orders to clearance and settlement of equity trades (the most important transactions in the marketplace, as many options and futures are based on underlying equity securities).

From an enforcement standpoint, unless a pattern of anomalies occur within these metrics to raise red flags of abnormal activity, in general they should not provide significant false signals alerting regulators to unproductive investigative avenues regarding suspicious activity.

Figure 6

End-of-Day Reconciliation - Trade Information:

- The Consolidated Tape data for each security can be used to complete an automated comparison of the total volume and value of each security traded to cross reference the accuracy of the information received into an audit trail system.
- The clearing data from the NSCC tracks the trading volume cleared through the national clearance and settlement system by security. This data should reconcile (within a reasoned parameter) with the Consolidated Tape, the short sale data produced by exchanges/SROs and the data received by CAT, if transactions are being sent to clearing; as should be the expected outcome for a true and accurate audit trail. Moreover, the clearing and settlement through the national clearance and settlement system has been mandated by Congress. The system is expected to instruct between firms the exchange of cash for securities and to be operating with a true and accurate accounting for the shares outstanding of U.S. publicly traded securities.
- An audit trail system should be able to produce succinct comprehensive reports on the reconciliation results showing a pattern of reoccurring anomalies, which can be monitored to determine if they develop into red flags of suspicious activity warranting further investigation in virtual real-time.

Relevant Data for Comparison Collected Daily for Equities:

At both the beginning and end of the day, the following information should be reported into an audit trail to help regulators determine anomalies in comparison to the next day's data:

- Shares outstanding (known/used by listing exchanges for the purpose of compliance with Regulation SHO).
- Short interest (reported to an audit trail by clearing firms).
- All fails to deliver/receive (at NSCC and outside of NSCC).
- Institutional ownership, which is currently reported to the public in quarterly 13F filings for the purpose of concealing trading strategies, but could easily be reported to regulators on a more frequent basis because it comes from a firm's end-of-day reconciliation of positions.
- Total shares available to loan for short sales (as described in Figure 2).

The following should be reported to an audit trail at the end of each trading day:

- The day's total trade volume and cumulative average volume over a set number of days relevant to show a significant change in trading.
- The short selling for each trading venue (such as the SROs currently report).
- Shares recorded as borrowed for short sales in a securities lending database discussed above (Figure 2).

Through the types of automatic reconciliations and comparisons discussed above, there would be certain red flags triggered by anomalies. These would alert regulators who could follow up with further analysis into the data.

In order for all regulators and SROs to be on the same page, there should be certain metrics and indications decided upon in advance that are suspicious or potentially problematic. When red flags are generated, there should be rapid/instant communication of this information to regulators and SROs to ensure the suspicious behavior can be monitored even if it migrates to another venue.

Of the above Figures, conceptually designing a securities transaction audit trail, it would be surprising that any serious market observer, economist, market statistician, members of academia or the SROs and their sophisticated enforcement divisions could or would disagree with this type of expanded audit trail in order to capture information that is truly relevant and usable by these personnel and entities to enhance market transparency, integrity and safety.

Specific Records Required for Equities Trading as Exchange Traded Funds

To complete an audit trail for Exchange Traded Funds ("ETFs") requires additional information to that necessary for stocks. For ETFs, it is also important to include the daily creation/redemption requests submitted by each Authorized Participant and fulfilled by the ETF operator in reconciliation of an audit trail.

The CAT proposal does not include creation/redemption data for ETFs, but states:

> "Customer information should facilitate analyses of the secondary market trading of ETF Authorized Participants in their ETFs. This could help regulators better understand the arbitrage process between an ETF and its underlying securities and the limitations of that arbitrage."

Creation/redemption data is vital for SEC investigations and analysis of ETFs. As we have shown in previous comment letters[7], many important ETFs are not creating shares to support the amount of trading volumes and short selling.

The creation/redemption information is highly relevant to reconcile the ETF trading in order to determine relationships between secondary market trading and the inventory of the underlying fund portfolio.

Conclusion

This is a time in history where there is an opportunity to generate an audit trail from order placement on through settlement that will not present itself for decades or potentially never again. The additional information discussed above for the CAT is readily available and produces virtually no burden on the industry or SROs to comply with. It provides enhanced ability for

[7] For example, see *Response to SEC Questions Regarding the Use of Derivatives by Registered Investment Companies File Number S7-24-15*, dated March 28, 2016 https://www.sec.gov/comments/s7-24-15/s72415-111.pdf

securities regulators to reconcile market metrics and generate red flags of anomalous activity that may require further investigation or enforcement activity.

Without this more complete audit analysis of securities transactions, there cannot be a clear path to indicate that continuous contractual settlement is occurring. In fact, the way transactional activity exists today there cannot be an assurance provided by regulators that contractual settlement of equity securities trades will fully occur. An automated audit trail has the opportunity to cure this problematic gap between the trading and the clearance and settlement of securities contracts.

Exhibit A

While the following are quotes from FINRA detailing its technological ability, we believe FINRA is not incorporating all of the available metrics into its processes that could allow a more holistic view of transactional activity from the beginning of the trade through settlement.

FINRA's Current Data Collections - Quotes from FINRA[8]

Technology

Every day, FINRA oversees up to 75 billion market transactions, using technology powerful enough to detect potential abuses. Applying a variety of data-gathering techniques, we work to uncover insider trading and *any strategies firms or individuals use to gain an unfair advantage*. FINRA's technology is vital to protecting investors—and has become a key component of our ability to: *effectively oversee brokerage firms; accurately monitor the U.S. equities markets; quickly detect potential fraud*; and keep investors informed through tools like BrokerCheck.

We invest in innovative technology—like cloud computing—in order to *build sophisticated surveillance systems, process extraordinary amounts of data, and work with cutting-edge applications, programs and hardware.*

FINRA Processes Billions of Transactions Per Day

FINRA uses cloud computing and leverages data technology to *process our ever-increasing volume of data.* This *unique picture allows FINRA to protect investors from abuse and manipulation by wrong-doers.*

FINRA processes on average 50 billion—and up to 75 billion—transactions every day. We handle more data in a single day than what MasterCard® processes in a year and Visa® in 6 months. We use innovative technology, such as parallel computing hardware to process our ever-increasing data volume and cloud computing to automate the process and store the massive amounts of data.

The combination of cloud computing and big data software *allows us to shift our computing power between FINRA's applications so that we can quickly respond to changing regulatory demands in a cost-effective way.*

We Help Detect and Prevent Wrongdoing in the U.S. Markets

FINRA uses its technology to monitor trading in the stock and bond markets. We *run hundreds of surveillance algorithms and patterns against massive amounts of trade data to detect market manipulation, insider trading and compliance breaches.*

We operate several information systems that range from large, structured databases to unstructured content repositories. We combine search engine and analytics technology to make sure *all of the data we collect from firms and exchanges is accessible with one search or surveillance query*.

[8] https://www.finra.org/about/technology

FINRA oversees and regulates over-the-counter (OTC) trading of exchange-listed and non-exchange-listed securities for compliance with FINRA rules and the federal securities laws. *FINRA provides regulatory services by contract to NYSE, NYSE MKT, NYSE Arca, NASDAQ, NASDAQ Options Market, NASDAQ OMX PHLX, NASDAQ OMX BX, ISE, the Boston Options Exchange (BOX), the EDGA and EDGX Exchanges and Direct Edge®. FINRA has surveillance oversight of more than 90 percent of the listed equities market. FINRA also provides regulatory services to the Chicago Board Options Exchange® (CBOE®) and C2 Options Exchange (C2).*

We Use Technology to Help Examine Securities Firms and Brokers

We spent the last few years modernizing the technology of our examination platform. We've transformed the approach and procedures we use to conduct a more risk-based approach to oversight exams of firms.

The redesigned system allows FINRA staff to analyze a wide range of data and gives firms tools to submit information to us electronically. *This approach allows FINRA to efficiently and effectively monitor and examine more than 4,100 securities firms and over 635,000 brokers.*

We Build and Operate Systems for FINRA and Other Regulators

FINRA applies its expertise and technology to provide database and registration systems for the financial services industry regulatory services:

Central Registration Depository (Web CRD) – FINRA operates the central licensing and registration system for the U.S. securities industry and its regulators. It is a framework of uniform registration forms, one-stop form filing and fee collection, and a single regulatory database and registration processing system to meet the requirements of all participating securities regulators.

BrokerCheck – FINRA derives information from the CRD and IAPD to provide a free tool to investors called BrokerCheck. With BrokerCheck, investors can research the professional backgrounds of current and former FINRA-registered brokerage firms and brokers, as well as investment adviser firms and representatives.

Investment Adviser Registration Depository (IARD) and Investment Adviser Public Disclosure (IAPD) – FINRA developed and operates these systems under contract agreements with the SEC and state regulators. These systems provide a secure, Web-based, electronic filing, registration and regulation system for investment adviser firms and their registered individuals.