August 12, 2011

Via E-mail submission to market-integrity@iosco.org

Mr. Werner Bijkerk
International Organization of Securities Commissions (IOSCO)
Calle Oquendo 12
28006 Madrid
Spain

Public Comment on Consultation Report: Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency

Dear Mr. Bijkerk,

FTEN, Inc. ("**FTEN**")[1] appreciates the opportunity to submit comments on the Consultation Report entitled *Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency* published by the Technical Committee of the International Organization of Securities Commissions (**IOSCO**) ("**Consultation Report**").

FTEN endorses the importance of the principles for regulation of secondary markets identified in the IOSCO *Objectives and Principles of Securities Regulation*[2], namely:

- Requiring that the establishment of exchanges and trading systems is subject to authorization and oversight;
- Maintaining fair and equitable rules;
- Promoting transparency of trading;
- Detecting and deterring market manipulation and other unfair trading practices; seeking to ensure the proper management of large exposures, default risk and market disruption; and
- Reducing systemic risks.

In response to the Consultation Report request for comments related to High Frequency Trading ("**HFT**"), this Comment Letter responds to Questions 3, 6, 9 and 14 of the Consultation Report by referencing recent FTEN submissions to the Committee of European Securities Regulators, which on January 1, 2011 officially became the European Securities and Markets Authority ("**ESMA**") and the U.S. Securities and Exchange Commission ("**SEC**"). Specifically, this Comment Letter references the following:

i. **Comment Letter dated March 29, 2010 submitted to Elizabeth M. Murphy, Secretary of the SEC**, related to SEC Rule 15c3-5 Risk Management Controls for Brokers or Dealers with Market Access, a copy of which is attached as Annex 1 ("**Market Access Letter**");
ii. **Evidence Letter dated April 30, 2010 submitted to ESMA** related to Micro-Structural Issues of the European Equity Markets, a copy of which is attached as Annex 2 ("**ESMA Evidence Letter**"); and
iii. **Comment Letter dated August 9, 2010 submitted to Elizabeth M. Murphy, Secretary of the SEC**, related to SEC proposed Consolidated Audit Trail Rule 613, a copy of which is attached as Annex 3 ("**Audit Trail Letter**") (the Market Access Letter, ESMA Evidence Letter and Audit Trail Letter are sometimes collectively referred to as "**Market Integrity Letters**").

[1] FTEN, a NASDAQ OMX company, offers real-time, cross-market risk management solutions that provide market participants with transparency and control over their global trading activity. Our mission is to help firms build and grow their electronic trading businesses — allowing for more efficient use of capital while maintaining full regulatory compliance. FTEN's patented technology allows users to monitor their aggregate intraday risk profile on a global basis. We have a highly scalable and reliable market access platform that connects to all major pools of liquidity and supports multiple asset classes. Our systems provide pre-, at- and post-trade risk, compliance and reporting solutions.

[2] *Objectives and Principles of Securities Regulation*, IOSCO Report, 20 July 2010 available at http://www.iosco.org/library/pubdocs/pdf/IOSCOPD329.pdf.

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I. <u>Consultation Report Question No. 3</u>: What recommendations, if any, would you propose to strengthen the regulatory requirements around pre- and post-trade risk controls? In particular, what measures, if any, do you think regulators should introduce that relate specifically to the use of and risks posed by algorithmic trading and/or HFT?

HFT is pervasive across the industry. Traders often interact with the markets through simultaneous and diverse means - separated both physically (on numerous Exchanges, ATSs and MTFs) as well as technologically (on disparate trading platforms) across various asset classes (e.g., equities, options and futures). HFT traders generally do not trade on only one system or at only one venue, and do not trade only one asset class. And, because of the tremendous speed at which significant potential exposure can be accumulated, traditional methods of dealing with infractions "after the fact" via regulatory audits, penalties and sanctions are insufficient control mechanisms to safeguard the systemic integrity of the financial markets. In order to reduce systemic risk with regard to HFT and other trade flow, we believe the following risk management elements are necessary:

- **Pre-Trade Controls** – controls in place prior to submission of orders to liquidity destinations;
- **At-Trade Controls** – controls in place immediately after submission of orders to liquidity destinations;
- **Post-Trade Controls** – controls in place after submission of orders to liquidity destinations later in time than at-trade controls;
- **Real-Time Enterprise Awareness** – real-time awareness at a market participant enterprise level of each client's trading activity across all asset classes, trading platforms and liquidity destinations for which the market participant bears financial and/or regulatory responsibility; and
- **Real-Time Flow Control** – ability to exercise real-time control over a client's flow on a pre-, at- and/or post-trade basis, as appropriate in order to comply with financial / regulatory obligations, based on enterprise awareness of their trading activity.

Each of the Market Access Letter and ESMA Evidence Letter (attached at Annex 1 and 2 to this Comment Letter) provide additional information with regard to our views pertaining to the importance of:

- **Independence of Risk Controls**;
- **Minimum Risk Controls for Proprietary Trading**;
- **Risk Controls with Cross Market / Account Level Awareness**;
- **Real-Time Flow Controls**; and
- **Consistent Application, Auditing and Enforcement of Risk Management Controls.**

II. <u>Consultation Report Question No. 6</u>: Do you have suggestions for improvements to regulators' surveillance capabilities with respect to the markets and modern trading techniques? Please elaborate. Who should bear the cost of investing in such capabilities and the cost of operating and supervising the markets in order to ensure fairness among market participants? Please elaborate.

Regulators should leverage already deployed and commercially available solutions that are in production use today by major market participants to immediately achieve goals of real-time cross-market transparency, accountability and control. An iterative approach would leverage existing systems to capture order and execution data in real-time from liquidity destinations (Exchanges, ATSs and dark MTFs) and 'map' the data back to original trade submissions by market participants without requiring integration with, or changes to, market participant systems or to liquidity destination systems and without modifying existing order flow. Consistent with IOSCO's *Principals for Direct Electronic Access,* having real-time cross-market access to "Liquidity Destination Data" and "Market Participant Data" (as such terms are defined in the Audit Trail Letter attached as Annex 3 to this Comment Letter) would provide regulators with real-time cross-market transparency, accountability and control. This approach would enable additional levels of transparency, along the lines contemplated by the SEC's recently enacted Large Trader Reporting Rule 13h-1[3], to be achieved via available registration and data mapping tools without requiring separate solutions.

[3] http://sec.gov/rules/final/2011/34-64976.pdf

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As more fully described in the Audit Trail Letter specifically related to the SEC's Consolidated Audit Trail Rule 613, leveraging data cloud capabilities would introduce efficiencies into regulatory reform and avoid regulatory fragmentation and unnecessary duplication of effort. The use of a real-time data cloud approach would enable regulators to leverage the time-to-market and cost benefits of cloud solutions to achieve their independent regulatory objectives at an accelerated rate and on economically advantageous terms.

III. Consultation Report Question No. 9: Do you think existing laws and rules on market abuse and disorderly trading cover computer generated orders and are relevant in today's market environment?

Many laws, rules and regulations fail to require real-time, cross market transparency and control which we believe are necessary for effective systemic risk management - they often take a 'siloed' approach to risk management, credit usage and associated matters. As indicated below, mitigation of system risk is a market structure issue with regard to which all market participants should play a relevant role:

- **Intermediaries / Brokers**

Most guidelines regarding risk management and surveillance focus on the obligations of intermediaries / brokers to maintain a fair and orderly market and control credit limits to mitigate risk including, but not limited to, applying pre-, at-, and post-trade risk checks as well as flow control and surveillance. While these laws and rules are generally fairly comprehensive, they often do not require real-time awareness and control across trading silos and asset classes as necessary to control systemic risk.

- **Proprietary Trading Firms**

In contrast to reasonably well-established guidelines for intermediaries / brokers, risk and surveillance obligations for proprietary trading shops and non-intermediary members of trading venues are less clear.

- **Clearing Firms**

Existing guidelines obligate trading members to keep credit risk under control. However, in many situations risk management controls at the intermediary level may be insufficient to control credit risks associated with trading firms. Therefore, despite the fact that clearing firms carry the credit risk, they may be the least equipped and empowered to have real-time awareness and control of their client's trading activities. Many clearing firms are currently considering how to best control risk in light of high intra-day volatility and ultra fast trading. Rules and laws should be devised to better empower clearing firms to mitigate risk and thus limit systemic exposure in the market.

- **Markets**

Current rules focus on the obligation of each market to protect their core functions through risk and trade control capabilities as well as throttling mechanisms. These are valid and important mechanisms that should be supported and enforced. More discussion is needed, however, regarding how these mechanisms might be coordinated in an increasingly fragmented market and how alternative matching facilities including broker internal crossing networks can become part of this coordinated market protection. Consistent with Principal 5 of IOSCO's *Principals for Direct Electronic Access*, which states that "Markets should provide member firms with access to relevant pre and post-trade information (on a real time basis) to enable these firms to implement appropriate monitoring and risk management controls," markets should provide real-time drop copies to market participants that include order and execution information with a high degree of account granularity. This will allow intermediaries as well as clearing firms to gain a better real-time understanding of risk. In addition, markets could expose flow control capabilities such as the ability to halt individual trading members or at least to limit their trading activities to intermediaries as well as clearing firms. These could be useful capabilities to integrate into the overall risk infrastructure of brokers and clearing firms.

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- **Regulators**

As outlined in Section II above, regulators can play an important role in controlling systemic risk in a manner that could even transcend multi-prime relationships that are otherwise seen as separate credit lines. The data cloud approach is an extension of what FTEN deploys for intermediaries / brokers / clearing firms and makes real-time systemic risk monitoring capabilities for regulators an achievable goal.

IV. Consultation Report Question No. 14: To what extent do you have other comments related to the risks to market integrity and efficiency raised by the issues in this report?

We respectfully invite readers of this Comment Letter to review the contents of the Market Integrity Letters in their entirety as being generally responsive to the risks to market integrity and efficiency raised by the issues in the Consultation Report.

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FTEN appreciates the opportunity to provide feedback on the Consultation Report entitled *Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency* published by the Technical Committee of the International Organization of Securities Commissions.

Sincerely,

Ted Myerson	Valerie Bannert-Thurner	M. Gary LaFever
Chief Executive Officer	European Executive Director	Chief Corporate Development Officer

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Annex 1 - Market Access Letter

Comment Letter dated March 29, 2010 submitted to Elizabeth M. Murphy, Secretary of the SEC, related to SEC Rule 15c3-5 Risk Management Controls for Brokers or Dealers with Market Access

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March 29, 2010

Via Email to rule-comments@sec.gov

Elizabeth M. Murphy, Secretary
Securities and Exchange Commission
100 F. Street, NE
Washington, D.C., 20549-1090

Re: File No. S7-03-10 Risk Management Controls for Brokers or Dealers with Market Access

Dear Ms. Murphy,

FTEN, Inc. ("FTEN")[1] appreciates the opportunity to comment on Rule 15c3-5 Risk Management Controls for Brokers or Dealers with Market Access (the "Rule") under consideration by the Securities and Exchange Commission (the "SEC").

Federal Reserve Chairman Ben Bernanke defines systemic risk as "developments that threaten the stability of the financial system as a whole and consequently the broader economy, not just that of one or two institutions."[2] We agree with commentators that high frequency trading is an increasingly important element of U.S. and international financial markets due to its positive influence on market liquidity, transparency and price discovery[3]. We support the Rule's fundamental premise that systemic risk caused by high frequency trading needs to be adequately addressed in order to protect against systemic loss. In addition, we believe reasonable and effective management of the risks associated with high frequency trading is necessary to avoid potential "backlash" which could lead to overregulation and possible prohibition of this beneficial business practice.

As noted by the SEC in the commentary accompanying the Rule filing, high frequency trading is pervasive across the industry. High frequency traders often interact with the markets through simultaneous and diverse means - separated both physically (on numerous Exchanges and ATSs) as well as via various trading mechanisms (e.g., Sponsored Access, Smart Order Routing, Direct Market Access, etc.) trading various asset classes. High frequency traders generally do not trade on only one system or at only one venue, and do not trade only one asset class. And, because of the tremendous speed at which significant potential exposure can be accumulated, traditional methods of dealing with infractions "after the fact" via regulatory audits, penalties and sanctions are insufficient control mechanisms to safeguard the systemic integrity of the financial markets.

To safeguard the systemic integrity of the U.S. financial markets, we suggest that risk management controls ensure the following:

I. Physical and Relationship Independence of Risk Controls;

II. Risk Controls with Cross-Market / Account Level Awareness;

III. Real-Time Trade Flow Controls; and

IV. Consistent Application, Auditing and Enforcement of Risk Management Controls.

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[1] As an independent third party technology solutions provider, FTEN enables prime brokers, clearing firms, broker-dealers, hedge funds, proprietary trading groups, exchanges and alternative trading systems to achieve greater access, speed and control through scalable, low-latency routing, real-time intra-day risk management, compliance, surveillance and market data services (see http://www.securitiesindustry.com/issues/19_100/-23702-1.html?zkPrintable=true). On October 30, 2008, FTEN announced strategic minority investments in the company by Merrill Lynch, Goldman Sachs, J.P. Morgan, and Credit Suisse in connection with FTEN's initiatives to redefine global financial securities risk management, compliance and surveillance (see http://www.wallstreetandtech.com/financial-risk-management/showArticle.jhtml?articleID=211800273).

[2] October 30, 2009 letter from Federal Reserve Chairman Ben Bernanke to Sen. Bob Corker (R., Tenn.) - member of the Senate Banking Committee.

[3] For example, see http://www.tradersmagazine.com/news/high-frequency-trading-benefits-105365-1.html?zkPrintable=true; http://www.bloomberg.com/apps/news?pid=20601109&sid=aBBFQ6thBuiY; and http://www.securitiesindustry.com/news/-24116-1.html.

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I. Physical and Relationship Independence of Risk Controls

A. Need for Physical Independence - Danger of Physically Integrated Approaches to Systemic Risk Management

Although their speed differential, if any, is measured in mere microseconds, physically integrated risk management systems (i.e., risk management systems that are located within the same physical computer chassis as a high frequency trading firm's algorithmic trading model or "Algo") can in certain circumstances process transactions faster than other (physically external) forms of risk management. However, in order to accomplish the Rule's objective of reducing systemic risk in the marketplace, risk management calculations and reference data used for risk calculations (e.g., positions, risk levels, breach history, etc.) should be required to be located physically independently from the computer chassis housing the Algo. This is because physically integrated risk management systems are subject to the same equipment and environmental conditions that can cause failure or malfunction of the Algo itself. Excessive Central Processing Unit ("CPU") consumption by the Algo can also impede or entirely prevent risk management operations in a shared chassis environment. Physically integrated risk management systems can fail simultaneously with an Algo failure due to shared chassis malfunction or because the Algo is consuming excessive CPU power. In both situations, this could result in failure to prevent improper trading activity and in addition, due to the loss of critical risk management calculations and reference data, failure to mitigate damage caused by unwanted transactions and failure to comply with regulatory reporting, compliance and surveillance requirements. [4]

It should be noted that the limitations of physically integrated risk management systems exist regardless of who "controls the control." Even if an unrelated third party provides risk management controls via a physically integrated risk management system, those risk management controls are still subject to potential simultaneous failure within the shared computer chassis, and to ineffectiveness due to high CPU utilization by the Algo.

B. Need for Relationship Independence - Systemic Risk Management Should be Controlled by Non-Affiliates

In order to achieve the SEC's systemic risk management objectives with regard to high frequency trading activity, risk management should be controlled by a party independent from the trading entity except as indicated below. Otherwise, some trading firms may be tempted to conduct cost-benefit analyses to determine whether profits generated by non-compliant trading activities are offset by unlikely detection and / or de minimis fines. To establish requisite independence, the SEC should use the established definition of an "affiliated person" under Exchange Act Rule 10A-3(e)(1)(i) which, by analogy, would require that risk management be controlled by someone other than "a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with" the trading entity.

The approach currently taken by the Rule requires that firms not receiving independent risk management become registered as Broker Dealers and become members of Exchanges / ATSs. This requirement would subject them to SEC and Self Regulatory Organization ("SRO") disciplinary actions, sanctions and penalties for failure to comply with the requirements of the Rule. However, if the goal of the Rule is to protect against systemic loss in the marketplace then "after the fact" disciplinary actions, sanctions and penalties alone are ineffective to *prevent* financial loss to innocent counterparties and clearing firms[5] in the first place.

The SEC should require that risk controls be managed by a party that is not "affiliated"[6] with a trading firm unless the firm manages its own risk controls and clears its own trades to avoid exposing third party clearing firms to potential losses - e.g., proprietary trading groups. Changes should also be considered to the National Securities Clearing Corporation ("NSCC")

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[4] Risk management calculations and reference data for risk calculations (e.g., positions, risk levels, breach history, etc.) located physically independent from a computer chassis housing an Algo that has gone awry will retain account level and market wide awareness of the Algo's orders / executions in the market which supports immediate remedial action (e.g., permitting 'liquidate only' transactions) to reduce the scope of exposure and limit systemic impacts to the market as well as ensure compliance with regulatory reporting, compliance and surveillance requirements. In the same situation, physically integrated risk management systems could permanently lose all information.

[5] If an Algo malfunction / failure depletes the assets of a high frequency trading firm to the point that it goes bankrupt, the clearing firm for the high frequency trading firm will suffer losses from all "locked-in" trades and counterparties can suffer damages that ultimately have to be covered by the clearing firm or by other NSCC member firms. The fact that SEC / SRO disciplinary actions, sanctions and penalties exist against the bankrupt high frequency trading firm does not provide effective remedy or redress to such innocent third parties.

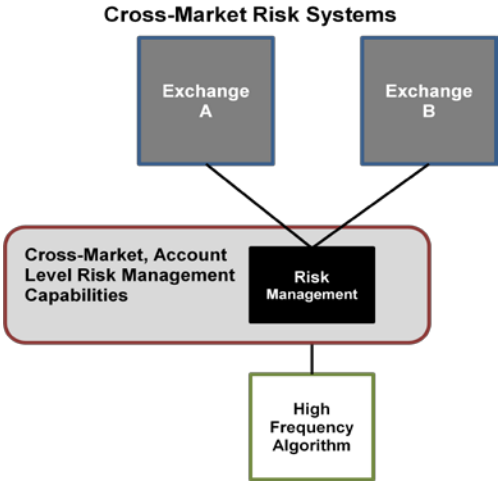
[6] As defined in Exchange Act Rule 10A-3(e)(1)(i).

Procedure XV, Clearing Fund Formula and Other Matters[7], which only requires a $10,000 clearing fund deposit for a trading firm that transacts business in securities that "settle" each day. This change is proposed because the biggest danger presented by a self-clearing high frequency trading firm is that an Algo could erroneously accumulate significant holdings (both long and short) in a single trading day which the firm would not have the financial ability to stand behind or to "settle." If this occurs, and it is the first time that the high frequency trading firm has not "settled" by day end, it would not have been previously required to increase its clearing fund deposit. A high frequency trading firm that has historically gone "flat" (i.e., has "settled" at the end of each trading day) would only have a $10,000 NSCC clearing fund deposit - an amount which should be increased to reduce risk to other NSCC members in the event of bankruptcy of a high frequency self-clearing firm due to the contractual obligation of members to make up for shortfalls in the ability of another NSCC member firm to cover its losses.

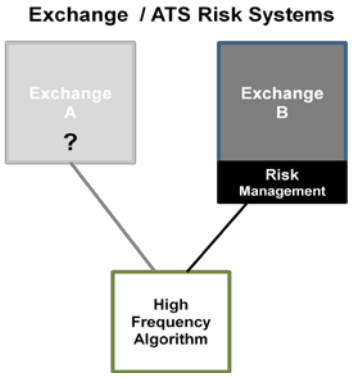
II. Risk Controls with Cross-Market / Account Level Awareness

In order to address systemic implications, account level awareness - a fundamental prerequisite for effective systemic risk management - should not be limited to the aggregation of orders / executions at any particular Exchange / ATS. Rather, account level awareness should include account level trading activity across all liquidity destinations as well as impacts of changes in market conditions on existing securities positions which can lead to significant losses even absent current trading activity.[8] Risk management tools provided by Exchanges / ATSs fail to address systemic concerns because they lack cross-market, account level awareness. An individual Exchange / ATS risk management system only has order-level awareness, and it only knows about trading activity in its own environment. Exchange / ATS risk checks are unaware of orders, executions, locates consumed and positions of trading entities in other liquidity centers. Because of these "blind spots," Exchanges and ATSs cannot see impacts across the market specific to individual trading entities and therefore their risk controls are ineffective to prevent systemic loss - i.e., risk beyond the purview of their particular liquidity center. Therefore, it is imperative that cross-market, account level systemic risk controls like those specified in the Rule be mandated to prevent systemic errors from occurring in the first place.

We propose the Rule be implemented initially across all Exchanges and ATSs with regard to single asset class risk controls and subsequently implemented to take into account cross asset risk controls.[9]



Consistent account level risk controls across venues



Order level venue specific risk checks only

[7] See pages 242 through 251 of National Securities Clearing Corporation Rules & Procedures (available at http://www.dtcc.com/legal/rules_proc/nscc_rules.pdf)

[8] For example, if the market moves against outstanding short positions, then losses can quickly accumulate beyond committed capital allocations even without current trading activity. This is an important factor to consider for effective systemic risk management. Exchange / ATS risk management systems fail to address this factor.

[9] This approach would also facilitate potential coordination with the Commodity Futures Trading Commission with regard to systemic risk management across all asset classes.

III. Real-Time Trade Flow Controls

The increased velocity of trades entering the market as a result of high frequency trading has caused a "temporal shift" in the industry - perspectives and priorities previously associated with execution risk and clearing risk and pre-trade and post-trade risk management are converging. Disciplinary actions, sanctions and penalties alone are inadequate to protect financial markets against systemic loss[10]. Real-time risk checks and automated safeguards should be mandated at those points in the trading process where relevant and necessary information becomes available to limit potential systemic implications to the market. While real-time risk management is critical particularly with respect to high frequency trading, we believe a more representative view of a trading firm's overall position and risk profile is available via an algorithmic approach versus an order-only approach to risk management. The Rule as currently drafted appears to require treatment of all potential and resting orders as if they were executed without giving effect to actual executions and cancellation rates. We believe this approach is unduly restrictive and would have a significant negative impact on market liquidity with minimal increased systemic protection over alternative algorithmic approaches to risk management.

We suggest that the SEC mandate real-time trade flow controls which incorporate an algorithmic approach to resting orders, executions and cancellation rates in order to accomplish desired improvements in systemic risk management without adversely impacting liquidity in the marketplace. For example, orders having a 100% chance of violating regulations (e.g., Single Order Quantity, Single Order Value, Restricted Stock, etc.) should be prevented from ever entering the marketplace whereas orders that would trigger a regulatory infraction only where changes to account positions and / or market conditions occur should be addressed with a more algorithmic approach. If, for example, a committed capital risk control is desired, rather than counting all potential and resting orders as executions (which would significantly curtail liquidity[11]), orders and executions should be tracked and when executed orders reach a pre-defined percentage of the desired committed capital allocation then all open orders should be cancelled and additional orders prevented from entering the market (other than perhaps orders that would help to ameliorate the situation). Another potential approach would involve taking into consideration liquidity and volatility of a subject security together with relative positions of resting orders within the active "book" for that security to determine the likelihood of exposure and the appropriate time to cancel open orders, etc.

IV. Consistent Application, Auditing and Enforcement of Risk Management Controls

Unless the SEC mandates the specific requirements for systemic risk controls, implementation of risk checks by different market participants will be inconsistent. As a result of such inconsistencies, SEC / SRO audits will be more costly, less efficient and less effective, leading to "regulatory arbitrage" at the Broker Dealer level and resulting in disparate application of regulatory standards. We propose that the SEC require use of the following algorithmic-based Real-Time Risk Management Checks[12] across all financial markets at the order level and account level, as appropriate. [13]

Order Level Risk Checks for Equities

Risk Checks	Description	Exchange / ATS Solution	Cross-Market Solution
Price checks	Comparison of current market price with order price to ensure trade is within accepted tolerance. If not, order is rejected.	✓	✓
Order Type Checks	Restricts pre-defined, specific order types. Order types not allowed are rejected.	✓	✓

[10] See supra, note 5.

[11] For example, high frequency trading firms that utilize trading strategies with high cancellation rates would prematurely consume allocated committed capital and could not engage in additional legitimate trading once the total of their potential and resting orders reach their specified threshold.

[12] These Real-Time Risk Management Checks were submitted to the SEC on April 29, 2009 in the context of NASDAQ's proposed sponsored access rule (File No. SR-NASDAQ-2008-104). See http://www.sec.gov/comments/sr-nasdaq-2008-104/nasdaq2008104-12.pdf

[13] Effective implementation of these or other Real-Time Risk Management Checks will require that they be controlled by independent parties, on a cross-market / account level basis in real-time as set forth in Sections I, II and III above.

Short Sales/Locates	Ensures full compliance with Reg SHO with regards to locate management and decrements.	☐	☑
Restricted List	Stops a client's attempt to trade a stock that is on the Restricted Stock List.	☑	☑
Easy to Borrow	Stops a trade that attempts to short a symbol not on the ETB list or without a valid locate.	☐	☑
SOQ Limit	Pre-set limit for the maximum share count allowed on an order. If the order share count is higher than this limit, order is rejected.	☑	☑
SOV Limit	Pre-set maximum dollar value allowed for a single order. If the order value is higher than this limit, order is rejected.	☑	☑

Account Level Risk Checks for Equities

Risk Checks	Description	Exchange / ATS Solution	Cross-Market Solution
Buy Limit	Running sum of all Buy orders (shares x price) consumed for the day for all activity across all exchanges. If account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled.	☐	☑
Committed Capital Limit	Pre-set limit for the amount of Net Committed Capital available for this customer account for all activity across all exchanges. If the account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled.	☐	☑
Committed Capital Used	Running sum of Committed Capital Used for all activity across all exchanges. Committed Capital Used increases when Buys add to long positions and Sells add to Short positions. Committed Capital Used is reduced when Buys offset existing Short position and Sells offset Long positions. If the account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled.	☐	☑
Gross Market Value Limit	Pre-set limit for current market gross value of total unboxed positions (total open longs at market + total open shorts at market) for all activity across all exchanges. If the account exceeds this limit, inbound orders will be rejected and current open orders will be cancelled.	☐	☑
Long Market Value Limit	The current market value of long positions across all activity across all exchanges. If the account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled	☐	☑

Sell Limit	Running sum of all Sell orders (shares x price) consumed for the day for all activity across all exchanges. If the account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled.	☐	☑
Realized P&L Loss Limit	Real-time Realized P&L Loss limit – reflected as a percentage of Committed Capital. If the account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled.	☐	☑
Unrealized P&L Loss Limit	Real-time Unrealized P&L Loss limit – reflected as a percentage of Committed Capital. If the account exceeds this limit, all inbound orders will be rejected and current open orders will be cancelled.	☐	☑

Order Level Risk Checks for Options

Risk Checks	Description	Exchange / ATS Solution	Cross-Market Solution
SOQ - Market Orders	Single Order Quantity check for options contracts that are market orders.	☑	☑
SOQ - Limit Orders	Single Order Quantity check for options contracts that are limit orders.	☑	☑
SOV - Market Orders	Single Order Value check for options contracts that are market orders.	☑	☑
SOV - Limit Orders	Single Order Quantity check for options contracts that are limit orders.	☑	☑
Max Number of Contracts by Name	Maximum number of contracts allowed under one name.	☑	☑
Restricted Products List	Rejects an order when a client attempts to trade a product on the Restricted Product List.	☑	☑

Account Level Risk Checks for Options

Risk Checks	Description	Exchange / ATS Solution	Cross-Market Solution
Max Position Quantity by Symbol	Total maximum number of contracts allowed for a specific underlying asset.	☐	☑

Committed Capital	Indicates when Net Committed Capital Used > Net Committed Capital limit.	☐	☑
Cash	Indicates when Net Cash Used > Net Cash limit.	☐	☑
Delta	Measures an option's sensitivity to changes in price of the underlying asset.	☐	☑
Gamma	Measures the delta sensitivity to changes in price of the underlying asset.	☐	☑
Vega	Measures an option's sensitivity to changes in volatility of the underlying asset.	☐	☑
Theta	Measures an option's sensitivity to time decay.	☐	☑

* * * * *

FTEN appreciates the opportunity to provide feedback on the SEC's proposed Rule 15c3-5 Risk Management Controls for Brokers or Dealers with Market Access (File No. S7-03-10).

Sincerely,

Ted Myerson
Chief Executive Officer

Doug Kittelsen
Chief Technology Officer

M. Gary LaFever
General Counsel

cc: The Hon. Mary L. Schapiro, Chairman
The Hon. Kathleen L. Casey, Commissioner
The Hon. Elisse B. Walter, Commissioner
The Hon. Luis A. Aguilar, Commissioner
The Hon. Troy A. Paredes, Commissioner
Robert W. Cook, Director, Division of Trading and Markets
James Brigagliano, Deputy Director, Division of Trading and Markets
David Shillman, Associate Director, Division of Trading and Markets

Annex 2 - ESMA Evidence Letter

Evidence Letter dated April 30, 2010 submitted to ESMA
related to Micro-Structural Issues of the European Equity Markets

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FTEN Europe Ltd.
Warnford Court
29 Throgmorton Street
London EC2N 2AT
United Kingdom

April 30, 2010

Via Website Submission to www.cesr.eu

Committee of European Securities Regulators
11-13 avenue de Friedland
75008 Paris
France
+33 (0)1 58 36 43 21

Ref.: CESR/10-142 Micro-structural issues of the European equity markets

Dear Sir or Madam,

FTEN, Inc. and FTEN Europe Ltd. (collectively, "FTEN")[1] appreciate the opportunity to submit evidence with regard to Micro-structural issues of the European equity markets specifically related to high frequency trading ("HFT") and Sponsored Access ("SA").[2]

FTEN believes that HFT/SA is an increasingly important element of international financial markets due to its positive influence on market liquidity, transparency and price discovery but we applaud actions by the U.K. Financial Services Authority ("FSA") to require management of associated systemic risks by means of a combination of pre-trade and post-trade risk controls together with flow controls to prevent "naked access." We believe reasonable and effective management of the risks associated with HFT/SA is necessary to avoid potential "backlash" which could lead to overregulation and possible prohibition of this beneficial business practice.

HFT/SA is pervasive across the industry. Traders often interact with the markets through simultaneous and diverse means - separated both physically (on numerous Exchanges and MTFs) as well as via various trading mechanisms (e.g., HFT and SA) trading various asset classes (e.g., Equities, Options and Futures). HFT/SA traders generally do not trade on only one system or at only one venue, and do not trade only one asset class. And, because of the tremendous speed at which significant potential exposure can be accumulated, traditional methods of dealing with infractions "after the fact" via regulatory audits, penalties and sanctions are insufficient control mechanisms to safeguard the systemic integrity of the financial markets.

I. Independence of Risk Controls

In order to reduce systemic risk with regard to non-member HFT/SA trading activity, we agree with the FSA's position that risk management should be controlled by a party independent from the trading entity, namely the sponsoring broker. In addition, we believe risk controls for non-member HFT/SA trading firms should be required to be provided by firms that are independent from the HFT/SA firm. In this manner, there will be no temptation on the part of a non-member HFT/SA trading firm to conduct a cost-benefit analyses to determine whether profits generated by non-compliant trading activities are offset by unlikely detection and / or minimal fines.

[1] As an independent third party technology solutions provider, FTEN enables prime brokers, clearing firms, broker-dealers, hedge funds, proprietary trading groups, exchanges and alternative trading systems to achieve greater access, speed and control through scalable, low-latency routing, real-time intra-day risk management, compliance, surveillance and market data services (see http://www.securitiesindustry.com/issues/19_100/-23702-1.html?zkPrintable=true). On October 30, 2008, FTEN announced strategic minority investments in the company by Merrill Lynch, Goldman Sachs, J.P. Morgan, and Credit Suisse in connection with FTEN's initiatives to redefine global financial securities risk management, compliance and surveillance (see http://www.wallstreetandtech.com/financial-risk-management/showArticle.jhtml?articleID=211800273).

[2] Additional observations are available in a paper entitled *Gaining Speed: Direct Access Methods for High Frequency Trading* which can be found at www.ften.com/downloads/Insight_HFTOptions.pdf.

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II. Minimum Risk Controls for Proprietary Trading

In the case of HFT trading activity by member firms where a trading entity conducts proprietary trading under its own membership, regulators have so far not made any clear statement with regard to the need for risk controls. While the vast majority of member firms participating in proprietary trading have effective risk controls, for certain trading strategies the existence of any risk controls necessarily introduces some latency which puts the member firm at a disadvantage vis-à-vis other member firms who may elect to participate in proprietary trading without using pre-trade risk controls. To ensure there is a "level playing field" among member firms engaged in proprietary trading and to provide protection for clearing firms that are responsible for trades of member firms that go bankrupt due to lack of risk controls, we believe reasonable risk controls should be required for member firms engaging in proprietary trading.

III. Risk Controls with Cross-Market / Account Level Awareness

In order to address systemic implications, account level awareness should include account level trading activity across all liquidity destinations. Risk management tools provided by Exchanges / MTFs do a good job of addressing order level risks but fail to address certain systemic concerns because they lack cross-market, account level awareness. We propose that Exchange / MTF-based order level risk controls be augmented by cross-market, account level risk controls to negate systemic risk on a broader, market-wide level.

IV. Real-Time Trade Flow Controls

The increased velocity of trades entering the market as a result of HFT/SA trading has caused a "temporal shift" in the industry - perspectives and priorities previously associated with execution risk and clearing risk and pre-trade and post-trade risk management are converging. As a result, disciplinary actions, sanctions and penalties alone are inadequate to protect financial markets against systemic loss. For these reasons, we agree with the FSA requirement for real-time trade flow controls.

V. Consistent Auditing and Enforcement of Risk Management Controls

Unless systemic risk controls are consistently audited and enforced, implementation of risk checks by different market participants will be inconsistent. As a result of such inconsistencies, regulatory audits will be more costly, less efficient and less effective, leading to "regulatory arbitrage" resulting in disparate application of regulatory standards. We therefore encourage consistent auditing and enforcement of mandated risk control requirements.

* * * * *

FTEN appreciates the opportunity to provide feedback on CESR/10-142 Micro-structural issues of the European equity markets.

Sincerely,

Ted Myerson
FTEN, Inc. - Chief Executive Officer
FTEN Europe Ltd. - Managing Director

Valerie Bannert-Thurner
FTEN Europe Ltd. - Executive Director

M. Gary LaFever
General Counsel

Annex 3 - Audit Trail Letter

Comment Letter dated August 9, 2010 submitted to Elizabeth M. Murphy, Secretary of the SEC, related to SEC proposed Consolidated Audit Trail Rule 613

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August 9, 2010

Via Email to rule-comments@sec.gov

Elizabeth M. Murphy, Secretary
Securities and Exchange Commission
100 F. Street, NE
Washington, D.C., 20549-1090

Re: Comments on Release No. 34-62174; File No. S7-11-10 - Consolidated Audit Trail Rule 613

Dear Ms. Murphy,

FTEN, Inc. ("FTEN")[1] appreciates the opportunity to comment on File No. S7-11-10 - Consolidated Audit Trail Rule 613 (the "Rule") under consideration by the Securities and Exchange Commission (the "SEC").

Today's financial markets are so advanced that regulators are no longer able to comprehend what happens in a timely enough manner to manage systemic risk. A regulatory tool such as that envisioned by the SEC in the Consolidated Audit Trail ("CAT") can no longer be viewed as "nice to have" but is clearly a "must have" tool to manage systemic risk. In this context, it is critical that the SEC strike the appropriate balance regarding:

- ***EXPEDITIOUS ACTION*** - The industry must act quickly to safeguard the integrity and viability of our financial markets. It should pursue solutions already in use by major market participants to empower regulators to act immediately.

- ***MORE EFFECTIVE RISK MITIGATION*** - The efforts that have been expended to date to try to understand the May 6th "flash crash" highlight the lack of cross-market transparency, accountability and control.

- ***AVOID UNNECESSARY ECONOMIC BURDEN*** - A "Greenfield"[2] or "Bespoke"[3] approach to developing CAT will result in a *de facto* tax on the financial industry at a time when it can't afford it - this approach will take the longest time, cost the most to develop, and will likely fail.

Therefore, in the context of a regulatory tool like CAT it is critical to bear the following in mind:

- Currently available commercial systems are capable of immediately accomplishing CAT goals of real-time cross-market transparency, accountability and control with no implementation risk and for far less than the estimated multi-billion dollar price tag;

[1] As an independent third party technology solutions provider, FTEN enables prime brokers, clearing firms, broker-dealers, hedge funds, proprietary trading groups, exchanges, alternative trading systems and regulators to achieve greater access, speed and control through scalable, low-latency routing, real-time intraday systemic risk management, surveillance, compliance and market data services (see http://www.securitiesindustry.com/issues/19_100/-23702-1.html?zkPrintable=true). On October 30, 2008, FTEN announced a strategic consortium minority investment in the company by Merrill Lynch, Goldman Sachs, J.P. Morgan, and Credit Suisse to facilitate FTEN's initiatives to redefine global financial securities systemic risk management, surveillance and compliance (See http://www.wallstreetandtech.com/financial-risk-management/showArticle.jhtml?articleID=211800273).
[2] PC Magazine defines a "Greenfield" development project as one undertaken without leveraging existing systems or resources - see http://www.pcmag.com/encyclopedia_term/0,2542,t=greenfield&i=43956,00.asp
[3] TechTerms defines "Bespoke" as software custom developed for a specific purpose - see http://www.techterms.com/definition/bespoke

- The industry cannot afford to finance a multi-billion dollar project when the economy is still reeling from the 2008 financial crisis[4];

- Most large-scale Greenfield / Bespoke development projects involve significant time and cost overruns; and

- The opportunity presented by CAT should be leveraged to bring additional efficiencies and benefits to the financial markets as further described below.

I. DIFFERENT PERSPECTIVES ON A CONSOLIDATED AUDIT TRAIL

CAT is intended to be a powerful regulatory tool to collect real-time financial securities order and execution information throughout the life cycle of transactions regardless of trading systems used or liquidity destinations accessed. The SEC desires to use CAT to more effectively surveil and protect U.S. equities and options markets by quickly identifying and reacting to inappropriate activities and abuses by market participants. In addition, the plan is for CAT to be leveraged by each member of the CAT consortium[5] for their own risk management, surveillance and compliance. In this manner, CAT could help fulfill critical systemic regulatory functions that are necessary for numerous reasons, including the following:

- Financial markets are much more complex, inter-related and faster than ever before;

- Access to the financial markets is easier than ever before (with lower capital requirements and barriers to entry) and the velocity and complexity of trading practices is constantly increasing;

- There is incredible pressure to reduce latencies and risk controls in order to increase transaction speeds and improve revenues;

- Outdated tools used by regulators today were designed decades ago for a much different market structure – in many respects regulators are essentially "running blind";

- Regulators desire a solution to address current market conditions and to also provide flexibility to accommodate future innovations so that markets can continue to thrive; and

- Regulators desire a solution that can automatically detect and react to inappropriate activities and abuses so they can more effectively deploy resources - if much of what staff investigate today could be captured and evaluated automatically in real-time, regulators could better deploy resources to look for new sources of inappropriate behavior and abuse rather than struggling to keep pace using antiquated tools.

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[4] There is no “budget” to finance CAT - the ultimate cost will be borne by individual investors since it represents new costs not offset by new revenues - it will be recouped by increased transaction costs and the resulting *de facto* tax on market activity could jeopardize the competiveness and viability of capital markets at the very time they should be the "engine" powering the road to economic recovery.

[5] The CAT consortium is comprised of the nine "national securities exchanges" (as defined in SEC Rule 600(a)(45) of Regulation NMS as any exchange registered pursuant to Section 6 of the Exchange Act (15 U.S.C. 78f). 17 CFR 242.600(a)(45)) and FINRA as the only current "national securities association" (as defined in Rule 600(a)(44) of Regulation NMS as any association of brokers and dealers registered pursuant to Section 15A of the Exchange Act (15 U.S.C. 78o-3). 17 CFR 242.600(a)(44)).

There are two potential approaches to CAT:

- Greenfield / Bespoke Approach – As proposed in the initial Rule filing, the SEC could mandate a custom developed CAT system and require that all trading systems and order pathways be modified to capture trade data at each step in the process and transmit data in real-time as specified to CAT. However, as more fully explained below, the vast majority of existing financial industry infrastructure consists of disparate systems which are involved in a variety of different processes related to trade flow but which do not interoperate or "speak" to one another in a way that would tolerate such changes and would therefore be prohibitively difficult and expensive to modify. The necessary cost to develop the requisite new infrastructure to capture, enrich and deliver data to CAT (aka "feeding the CAT") as well as infrastructure for the storage and analysis of CAT data (which would include market data, order flow data, execution data, allocation data and clearing data) would be analogous in magnitude to the costs that led to abandonment of the worldwide T+1 / Straight-Through-Processing ("STP") initiative in 2004.[6] For these reasons, a Greenfield / Bespoke approach to CAT is neither in the best interest of financial markets nor in the best interest of individual investors.

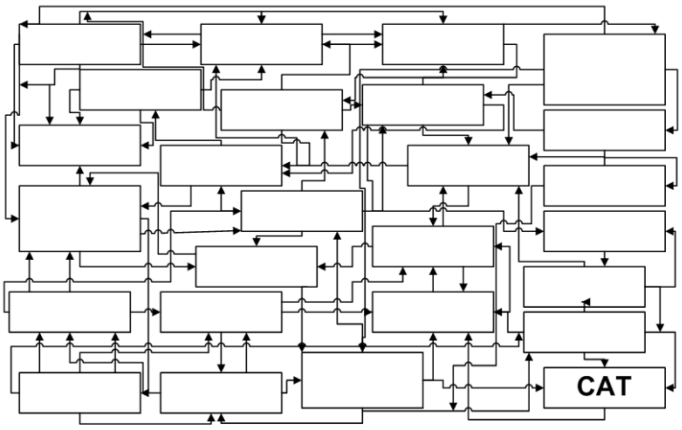


Figure 1 - Depiction of the Complexity of a Greenfield / Bespoke Approach

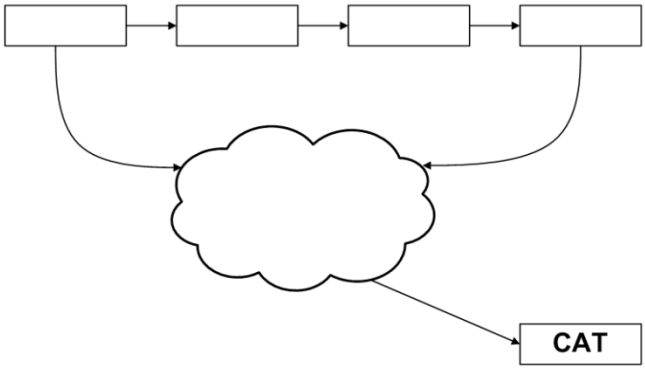


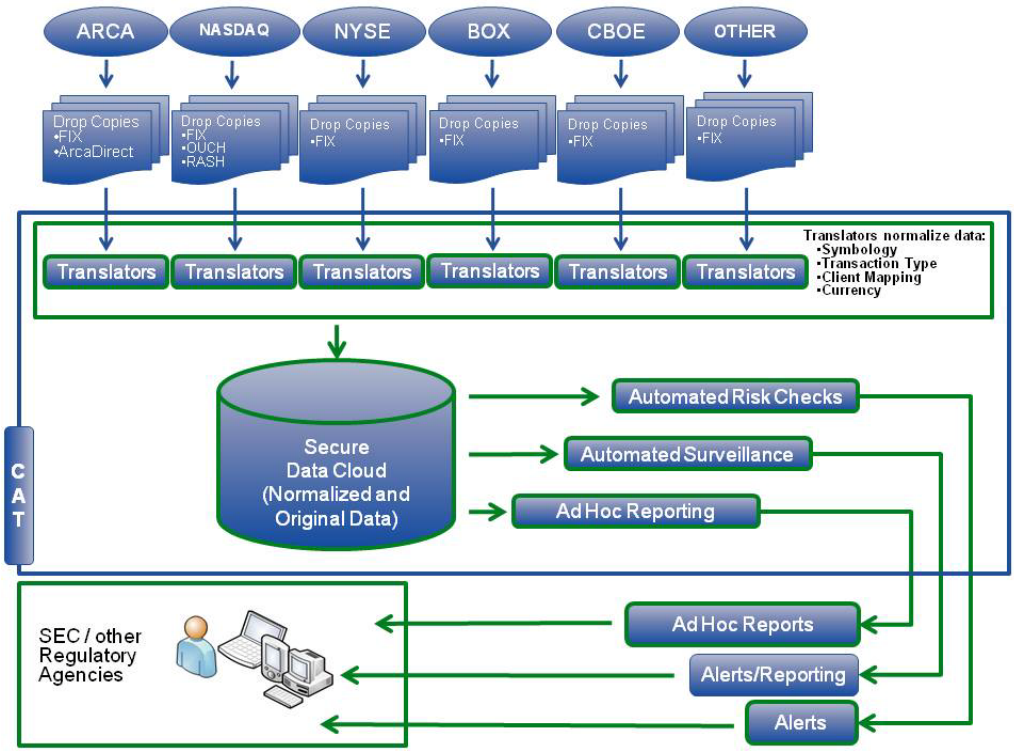
Figure 2 - Depiction of the Simplicity of an Iterative Approach

Iterative Approach - The SEC should leverage already deployed and commercially available solutions that are in production use today by major market participants to immediately achieve CAT goals of real-time cross-market transparency, accountability and control. An iterative approach would leverage existing systems to capture order and execution data in real-time from liquidity destinations (exchanges, ECNs, ATSs and dark pools) and "map" the data back to original trade submissions by market participants without requiring integration with, or changes to, market participant systems or to liquidity destination systems and without modifying existing order flow. As further described in Section VI below[7], having real-time cross-market access to "Liquidity Destination Data" and "Market Participant Data" (as such terms are defined in Section VI) would put regulators light years ahead of where they are today and provide them with real-time cross-market transparency, accountability and control.

[6] In 2004, the lack of financial industry support for the worldwide T+1 / STP initiative because of high costs versus perceived benefits led to abandonment of the initiative notwithstanding significant potential systemic benefits to the marketplace.

[7] See Section VI below - CAPABILITIES AND BENEFITS OF READILY DEPLOYABLE AND COMMERCIALLY AVAILABLE ITERATIVE SOLUTIONS.

- Iterative Phase I - Real-Time Cross-Market Liquidity Destination Data: Aggregating, normalizing and analyzing real-time cross-market data directly from liquidity destinations (i.e., exchanges, ECNs, ATSs and dark pools) in their native formats without requiring them to change how they do business ***would give regulators immediate 100% real-time visibility into cross-market orders and executions by High-Frequency Trading ("HFT") firms[8]- a high priority group estimated to account for as much as 73% of today's market volume.[9]***



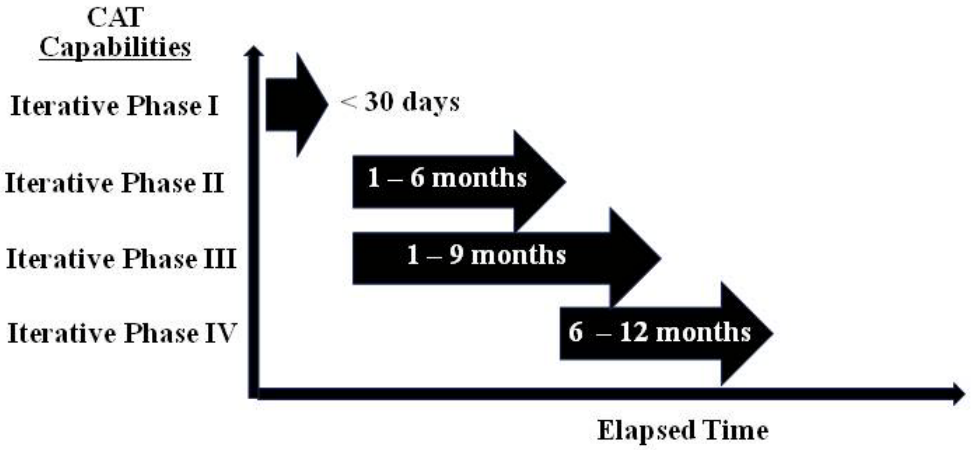
- Iterative Phase II - Real-Time Market Participant Data: Adding the capability to capture real-time electronic drop copies of initial order requests (and related executions) when they are ***first*** received by each market participant would enable regulators to evaluate best execution for orders. All that would be needed from market participants would be for them to deliver real-time electronic drop copies of contemplated orders and resulting executions in whatever form they already use without requiring them to change how they do business. To minimize the amount of disruption to market participants during Phase II, information regarding intermediate processes (e.g., Smart Order Routers, VWAP, etc.) within an organization would not be required to be reported yet, but rather, only initial order requests received by the market participant and related executions.

- Iterative Phase III - End-of-Day OATS / OTS / COATS Data Format Submissions: In Phase III, market participants would be required to deliver information regarding intermediate processes (e.g., Smart Order Routers, VWAP, etc.) omitted in Phase II.

[8] High Frequency Trading ("HFT") firms generally access markets directly to minimize latency so there are no intermediary steps between HFT orders and liquidity destinations so real-time review of liquidity destination information would provide 100% coverage for HFT trading.
[9] See SEC Proposed Rule: Large Trader Reporting System at http://www.sec.gov/rules/proposed/2010/34-61908.pdf

Adding this supplementary data at end-of-day by leveraging familiar OATS / OTS / COATS data format structures would enable more efficient deployment of regulatory resources to pursue apparent inappropriate behavior and abuses.

- Iterative Phase IV - Additional Functionality: CAT could be enhanced to provide additional functionality and to accommodate new regulatory objectives. For example, CAT could provide real-time risk management and counter-party awareness to address SEC Rule 15c3-5 Market Access concerns like naked / sponsored access, help resolve allocation issues, serve as a real-time conduit to coordinate "circuit breaker" responses across markets and asset classes, address objectives of the SEC Large Trader Reporting System, serve as an industry-wide securities master file, and serve as a framework to be leveraged by other regulatory agencies (e.g., the new Office of Financial Research or "OFR" as well as the U.S. Commodity Futures Trading Commission or "CFTC") to avoid unnecessary duplication of effort and potential regulatory fragmentation. Done correctly, CAT could even help firms enhance their internal operational efficiencies thereby strengthening the competitiveness and viability of our financial markets and helping to restore individual investor confidence.



To learn how this schedule is possible see Sections VI and VII below

II. ITERATIVE REGULATORY REFORMS CAN ACCOMPLISH GOALS WITHOUT DAMAGING ECONOMIC RECOVERY

There is general widespread support for efforts by the SEC and other domestic and international regulators to implement measures to help control systemic risk and ensure the financial stability of markets. However, there is equal concern that imprudent policy decisions and / or misguided implementation efforts could adversely impact needed economic recovery.[10] Even before the recent enactment of the Dodd-Frank Wall Street Reform Act, the number and scope of pending regulatory reforms in the U.S. alone were daunting. It is understandable why organizations such as the International Monetary Fund ("IMF") and the Switzerland-based Bank for International

[10] See Washington Post article entitled "Systemic Risk Theory Gains in Stature as Way To Prevent Next Bubble" at http://www.washingtonpost.com/wp-dyn/content/article/2010/07/26/AR2010072603338.html

Settlement ("BIS") highlight the need for prudent policymaking[11] given the tremendous economic burden that pending regulatory initiatives could entail. Examples of such burdens include:

- The SEC estimates that CAT Rule 613 will cost $4 Billion in year one and $2.1 Billion per year thereafter;[12]
- SEC Market Access Rule 15c3-5 is estimated to cost between $100 Million to $2 Billion in year one and $100 Million to $2 Billion per year thereafter;[13]
- The Financial Information Forum ("FIF") estimates that the cost of the SEC 's proposed Large Trader Reporting System (SEC File Number S7-10-10) would range from $30 Million to $750 Million annually;[14]
- The cost of complying with Basel III internationally has been estimated at $100 million ***per bank***;[15] and
- Deloitte has estimated that the annual cost of implementing risk governance frameworks at the world's leading 100 financial institutions will exceed $100 Billion in 2012.[16]

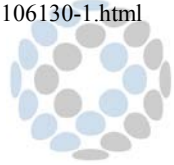
Michael Lynch, head of execution services for the Americas at Bank of America Merrill Lynch, was quoted in a recent Traders Magazine interview as saying "The biggest issue for us is that there are so many things in flux from a regulatory perspective. We'd be encouraged if the SEC narrowed their focus to the most pressing issues."[17] For these reasons, regulatory reforms such as CAT should be critically analyzed to ensure they provide maximum benefit at minimum cost and with minimal delay in order to ensure the continued viability of financial markets without creating unwanted threats to economic recovery.

III. ITERATIVE SOLUTIONS ARE THE BEST WAY TO ACCOMPLISH REAL-TIME, CROSS-MARKET RISK MANAGEMENT AND SURVEILLANCE AS NECESSARY FOR THE INDUSTRY TO CONTINUE TO ENJOY THE BENEFITS OF ELECTRONIC TRADING WITHOUT SUBJECTING FINANCIAL MARKETS TO UNACCEPTABLE SYSTEMIC RISK EXPOSURE

Chairman Schapiro highlighted the need for real-time risk management and surveillance in her May 20, 2010 testimony before the Subcommittee on Securities, Insurance, and Investment of the United States Senate Committee on Banking, Housing, and Urban Affairs when she testified that:

> "One of the challenges we face in recreating the events of May 6 is the reality that the technologies used for market oversight and surveillance have not kept pace with the technology and trading patterns of the rapidly evolving and expanding securities markets. There are mechanisms already in place to coordinate surveillance among markets. For example, the Intermarket Surveillance Group provides a framework for the sharing of information and the coordination of regulatory efforts among exchanges trading securities and related products to

[11] Ibid.
[12] See proposed SEC Consolidated Audit Trail Rule 613 filing at www.sec.gov/rules/proposed/2010/34-62174.pdf
[13] See proposed SEC Market Access Rule 15c3-5 filing at http://www.sec.gov/rules/proposed/2010/34-61379.pdf and related Comment Letters at http://www.sec.gov/comments/s7-03-10/s70310.shtml
[14] See FIF Comment Letter regarding proposed Large Trader Reporting System at http://www.sec.gov/comments/s7-10-10/s71010-78.pdf
[15] See http://www.information-management.com/news/basel_data_modeling-10018034-1.html
[16] See http://www.deloitte.com/print/en_GB/uk/industries/financial-services/5d3a9564c6da6210VgnVCM200000bb42f00aRCRD.htm#
[17] See http://www.tradersmagazine.com/news/bank-of-america-merrill-lynch-high-frequency-trading-circuit-breakers-algos-106130-1.html



> address potential intermarket manipulations and trading abuses. *However, audit trail requirements vary between markets, resulting in a lack of current, readily accessible securities order and execution data. Today's fast, electronic, and interconnected markets demand a robust consolidated audit trail and execution tracking system*."[18] (emphasis added)

Chairman Gensler of the CFTC similarly highlighted the impact of changes in technology when he testified at the same hearing that:

> "Futures market trading until recent years largely was transacted through open outcry among participants physically standing on the exchange trading floor. Today, 88 percent of futures and options trading on the CME is done electronically. The E-Mini contract is 100 percent electronic. The move from trading on the floor of an exchange to electronic trading introduced significant changes in trading methods. These include algorithmic trading, automated execution and electronic market making."[19]

The Financial Markets Group of the Federal Reserve Bank of Chicago published a report on March 1, 2010 entitled "Controlling Risk in a Lightning-Speed Trading Environment" which included an analysis of benefits and concerns associated with electronic trading. The report stated that:

> "There is evidence that high-frequency algorithmic trading also has some positive benefits for investors by narrowing spreads - the difference between the price at which a buyer is willing to purchase a financial instrument and the price at which a seller is willing to sell it - and by increasing liquidity at each decimal point. However, a major issue for regulators and policymakers is the extent to which high-frequency trading, unfiltered sponsored access, and co-location amplify risks, including systemic risk, by increasing the speed at which trading errors or fraudulent trades can occur."[20]

A recent study by the Global Association of Risk Professionals ("GARP") entitled "Risk Management Systems in the Aftermath of the Financial Crisis - Flaws, Fixes and Future Plans" noted that most firms do not perform risk management until the end-of-day even though risk professionals largely agree that they should have real-time risk controls.[21] Similarly, a recent survey by the Securities Industry and Financial Markets Association ("SIFMA") indicated that while 83% of SIFMA members believe that increased transparency is necessary to guard against systemic risk, only 53% of firms have any real-time risk management systems in place.[22] Even before recent events such as the "flash crash" of May 6th, Oliver Wyman noted that "confidence in the risk management practices of financial institutions is [at the] lowest point in a generation."[23] And a recent related blog post stated that:

> "Exchanges, ECNs, brokers, traders and regulators all must take an intelligent approach to monitoring and surveillance in order to prevent rogue trades and fat fingers. Transparency is the key. Regulators in the U.S. and Europe are concerned about the lack of transparency in markets where high frequency algorithmic trading takes place, as well as in dark pools….The detection of abusive patterns or fat fingered mistakes must happen in real-time, ideally before it has a chance to move the market. This approach should be taken on board not just by regulators, but by the industry as a whole."[24]

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[18] See http://banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=441e3fe8-f296-4535-a050-99fe05eb735b
[19] See http://banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=310c98ed-76c6-42d3-9b62-1d4e71f472c0
[20] See http://www.chicagofed.org/webpages/publications/chicago_fed_letter/2010/march_272.cfm
[21] See http://www.allbusiness.com/technology/software-services-applications-information/14820531-1.html
[22] See http://it.tmcnet.com/news/2010/07/26/4919613.htm
[23] See http://www.oliverwyman.com/ow/pdf_files/OW_Eng_FS_Publ_2008_POV1_Risk_Governance.pdf
[24] Supra Note 22.

One of the key difficulties in deploying an effective real-time risk management, surveillance and compliance system is the fact that relevant data comes from multiple liquidity destinations, is processed via a multitude of disparate trading systems and is stored in siloed data bases. As noted in the GARP survey, "data silos make it difficult to run queries or risk calculations across a single office, much less a global enterprise." This is due to the fact that:

> "Over the last 20 years, risk management has moved from spreadsheets to relational databases to specialized risk systems. During the same time, the financial services industry has seen waves of mergers and acquisitions. And simultaneously new risk systems were developed for different types of risk - credit, market, operational and, more recently, liquidity risk. In addition, global firms were extending the reach of their systems from instruments or trading desks to an enterprise view or global positions. Individual databases implemented as point solutions over time do not add up to a single, reliable integrated source of information." [25]

Integration for the majority of market participants remains such a widespread problem that if risk a manager requests real-time integrated risk management capabilities they are often told it will take three years to develop[26] - that's three years to develop internal capabilities not intended for market-wide use. The GARP survey indicated that:

> "A major part of the problem stems from the sequential way risk systems were implemented over the years with data distributed to each point of risk analysis, making it difficult to arrive at a single data definition - much less result - across systems. The original problem has been compounded by the subsequent approach to system enhancements. Rather than asking what users need, firms look at their existing IT infrastructure and ask what they can bolt on to improve the results. In the end, they are making systems more complicated and *approaching a point of paralysis*."[27] (emphasis added)

A report issued by The Senior Supervisors Group, comprised of senior financial supervisors from the U.S., Canada, France, Germany, Japan, Switzerland and the U.K. ("The Senior Supervisors Group"), noted the following in connection with their review of risk management practices that required improvement after the 2008 banking crisis:

> "Firms are constrained in their ability to effectively aggregate and monitor exposures across counterparties, businesses, risk strands, and other dimensions because of ineffective information technology and supporting infrastructure….Many firms, in their self-assessment submissions and in subsequent discussions, said they are making considerable investments in risk management infrastructure. Many projects, however, are in the planning stages or in the infancy of execution, with significant work remaining. One challenge to improving risk management systems has been poor integration resulting from multiple mergers and acquisitions. One firm suggested that acquisitions over the years have produced an environment in which static data are largely disaggregated. Another firm echoed this view, reporting that certain products and lines of business have not been included in data aggregation and analysis processes. A third firm reported that having two systems for the same business results in duplication of processes."[28]

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[25] Supra Note 21.
[26] Ibid.
[27] Ibid.
[28] See http://www.financialstabilityboard.org/publications/r_0910a.pdf?noframes=1

IV. AN ITERATIVE APPROACH TO THE CONSOLIDATED AUDIT TRAIL WOULD SIGNIFICANTLY IMPROVE THE TECHNOLOGY AND CAPABILITIES AVAILABLE TO REGULATORS AND TO MARKET PARTICIPANTS

In her opening statement at the SEC Open Meeting on the Consolidated Audit Trail, Chairman Mary Schapiro stated that:

> "The technology for collecting data and surveilling our markets is often as much as two decades behind the technology currently used by those we regulate. As a result, there is an intense need for regulators to have efficient access to a far more robust and effective cross-market order and execution tracking system."[29]

Existing regulatory surveillance capabilities such as SEC Electronic Blue Sheets ("EBS"), FINRA's Order Audit Trail System ("OATS") and NYSE Order Tracking System ("OTS") were developed decades ago - as a result they fail to take advantage of recent developments in technology and are overly cumbersome to use.[30] This presents an opportunity, as noted by Rahm Emanuel - President Obama's White House Chief of Staff, to "never let a serious crisis go to waste….it's an opportunity to do things you couldn't do before."[31] The current environment for regulatory reform presents a unique opportunity to move beyond "past practices" and embrace "best practices" like cloud computing. Cloud computing has been defined by the National Institute of Standards and Technology, Information Technology Laboratory ("NIST") as "a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."[32] Cloud computing presents such a powerful technological advancement that it is projected to surpass the Internet in importance.[33]

A recent Securities Technology Monitor article summarized the benefits of cloud computing for risk management as follows:

> "Finally, real-time risk management is becoming more of a possibility with the furtherance of a pervasive global network of almost unlimited bandwidth and with massively parallel, almost unlimited computing capabilities. This takes the form of shared facilities available on demand in the form of computational utilities provided as a service, referred to as cloud computing….Whether obtained for individual firms or for collectives of shared and interconnected networks it is a simple thought to contemplate that armed with such capability an industry participant could see and calculate the amount of risk building up in real time with a counterparty or a market regulator could catch an errant trade or waves or trades before it became a problem."[34]

A Brookings Institute Governance Study report stated that "combined with cross platform accessibility, scalability and reliability, there is a strong argument for the federal government to place greater emphasis on cloud solutions.

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[29] See www.sec.gov/news/speech/2010/spch052610mls-audit.htm

[30] In a deposition taken in the investigation of the Madoff ponzi scheme, a senior SEC representative's response to questioning regarding the usefulness of OATS and OTS stated, "I can tell you we [the SEC] are always hesitant to get audit trail data because it can be tremendously voluminous and difficult to deal with and is a huge resource issue for us. It takes a ton of time." (See page 433 of transcripts available at http://graphics8.nytimes.com/packages/images/nytint/docs/exhibits-from-secs-madoff-investigation/original.pdf)

[31] See http://online.wsj.com/article/NA_WSJ_PUB:SB123310466514522309.html

[32] A more detailed analysis of cloud computing is provided in the NIST "Presentation on Effectively and Securely Using the Cloud Computing Paradigm" available at http://csrc.nist.gov/groups/SNS/cloud-computing/cloud-computing-v26.ppt

[33] See http://www.cio.com/article/599026/Cloud_Computing_Will_Surpass_the_Internet_in_Importance

[34] See http://www.securitiestechnologymonitor.com/reports/22_4/-24739-1.html

Clouds bring convenience, efficiency, and connectability that are vital to government agencies."[35] The Brookings report went on to state that:

> "Cloud computing has the potential to produce an explosion in creativity, diversity, and democratization predicated on creating ubiquitous access to high-powered computing resources. By freeing users from being tied to desktop computers and specific geographic locations, clouds revolutionize the manner in which people, businesses, and governments may undertake basic computational and communication tasks. In addition, clouds enable organizations to scale up or down to the level of needed service so that people can optimize their needed capacity. Fifty-eight percent of private sector information technology executives anticipate that cloud computing will cause a radical shift in IT and forty-seven percent say they're already using it or actively researching it."[36]

In a Wall Street and Technology article entitled "Aiming for the Clouds," David Reilly, Morgan Stanley's CIO of enterprise infrastructure, says in the context of cloud computing that "the provision of accurate risk information always was, and over the last year has become even more of, a priority for us and the industry as a whole."[37] The nimbleness and flexibility afforded by cloud computing will be important as the industry moves forward with implementation of financial regulatory reform. Larry Neumann, SVP at Solace Systems, summarized the situation in a Tabb Forum posting entitled "Financial Reform is Just Beginning":

> "The key for the banks will be in becoming more nimble and adjusting as the rules and regulations change and morph over the next several years. About a decade ago, corporate agility was at the forefront of business requirements, primarily because business opportunities were changing so quickly that firms with inflexible systems were being left in the dust. More recently cutting costs for higher profits has been in vogue, but we will almost certainly see corporate agility (probably disguised as some new buzzword) move back up the priority charts as a result of the Dodd-Frank Act."[38]

V. AN ITERATIVE APPROACH TO THE CONSOLIDATED AUDIT TRAIL WOULD ENABLE THE SEC TO BE A LEADER IN FOSTERING COOPERATION AMONG REGULATORS

The Dodd-Frank Wall Street Reform Act (the "Act") calls for the creation of the OFR within the U.S. Treasury Department with responsibility for standardizing the scope and format of data collected by members of the Financial Stability Oversight Council (the "Council")[39] on behalf of the Council, including financial transaction data and position data. The Act calls for the creation of a data center within the OFR to collect and publish financial data on behalf of the Council; this data center will have the power to "collect, validate and maintain" all data necessary to carry out the duties of the OFR.[40] Given the broad data gathering and analysis mandate of the OFR, the SEC's endorsement of a data cloud approach to CAT could position the SEC as a leader in introducing efficiencies into regulatory reform that provide domestic and international agencies with the flexibility to consider similarly

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[35] See http://www.brookings.edu/papers/2010/0407_cloud_computing_west.aspx
[36] Ibid.
[37] See http://www.wallstreetandtech.com/it-infrastructure/showArticle.jhtml?articleID=220301314
[38] See http://www.tabbforum.com/channels/regulatory
[39] E.g., members of the Council include the U.S. Treasury Department, Federal Reserve, Office of the Comptroller of the Currency, Bureau of Consumer Financial Protection, Federal Deposit Insurance Corporation, Federal Housing Finance Agency, National Credit Union Administration, Federal Insurance Office, SEC and CFTC.
[40] See Davis Polk & Wardwell LLP Memorandum entitled "Dodd-Frank Wall Street Reform and Consumer Protection Act - Preliminary Assessment of Provisions Effective Immediately or Very Soon After Enactment" at http://www.davispolk.com/files/Publication/45ad4c88-8216-4efc-8e9c-6ecca08084a8/Presentation/PublicationAttachment/9a947ba9-a1ac-459b-9a34-70448c7035ea/072110_effective.pdf

leveraging data cloud capabilities to avoid regulatory fragmentation and unnecessary duplication of effort. This approach is consistent with comments made by Robert Cook, director of the SEC Division of Trading and Markets, at the July 15, 2010 SIFMA Regulatory Reform Summit where he told the audience that the SEC's goal is to create an integrated regulatory structure that will facilitate collaboration among regulators.[41] The SEC's use of a real-time data cloud approach for CAT would also enable the OFR, CFTC and other appropriate agencies to leverage the time-to-market and cost benefits of cloud solutions to achieve their independent regulatory objectives at an accelerated rate and on economically advantageous terms.

The Financial Markets Group of the Federal Reserve Bank of Chicago summarized the need for cooperation among regulators to avoid a flight of liquidity to less stringent venues when it said:

> "Issues related to risk management of these technology dependent trading systems are numerous and complex and cannot be addressed in isolation within domestic financial markets. For example, placing limits on high frequency algorithmic trading or restricting unfiltered sponsored access and co-location within one jurisdiction may only drive trading firms to another jurisdiction where controls are less stringent."[42]

Efforts should be made to coordinate legislative efforts among domestic U.S. regulators as well as with international organizations[43] to ensure coordinated efforts for worldwide systemic risk management. Russell Collins, head of the UK financial services group at Deloitte, has stressed that:

> "It is vital that the regulatory developments in each country are, wherever possible, coordinated with international agencies to ensure that the large complex financial institutions affected are able to concentrate on implementing the risk and control changes which are really necessary to improve their individual governance and to strengthen the system's financial stability."[44]

Adoption of a data cloud approach to real-time risk management, surveillance and compliance by the SEC and other regulators will address shortcomings cited by The Senior Supervisors Group with regard to improvement of data aggregation and peak processing capabilities necessary for effective risk management[45] and will go a long way toward accomplishing a key recommendation of the June 2010 SIFMA Systemic Risk Information Study, co-sponsored by Deloitte, that "global collaboration and cooperation is essential for effective monitoring of systemic risk."[46]

VI. CAPABILITIES AND BENEFITS OF READILY DEPLOYABLE AND COMMERCIALLY AVAILABLE ITERATIVE SOLUTIONS

The reaction within the financial services industry to the cost and feasibility of CAT has been largely negative due to pervasive difficulties in collecting, transmitting and managing data from numerous systems. To rely on the multiple sources, formats, processes and systems associated with order and execution information today within each market participant and among the numerous liquidity destinations make the SEC's proposed means of "feeding the CAT" cost prohibitive. While the CAT goals of achieving real-time transparency, accountability and control are

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[41] See http://www.capitolinterest.com/spotlight-on-sifma-regulatory-reform-summit.html
[42] Supra Note 20.
[43] E.g., Europe is in the process of setting up a European Systemic Risk Board, the BIS set up a Financial Stability Board and the IMF has proposed to serve a central role in ensuring systemic stability worldwide. See Supra Note 10.
[44] Supra Note 16.
[45] Supra Note 28.
[46] See http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/FSI/us_fsi_bs_SIFMASystemicRiskInformationStudyJune2010updated.pdf

appropriate and necessary to manage systemic risk in today's market environment,[47] the proposed Rule is viewed as a "record keeping nightmare" with associated compliance obligations that will become a major burden for market participants at a time when they are still trying to recover from the 2008 financial crisis.[48] As noted by Sapna Patel, head of market structure and liquidity strategy for the Americas at Morgan Stanley:

> "The feasibility of doing this in real-time could be an issue. While a consolidated audit trail is an important tool for regulators, the real-time aspects of collecting and providing this amount of information and data could be onerous from an implementation standpoint."

FTEN suggests that the SEC authorize members of the CAT consortium, who will be the parties responsible for selecting the CAT "plan processor"[49], to select readily deployable and commercially available solutions in use today by market participants that accomplish CAT goals by means other than those articulated in the initial Rule filing.

In today's market conditions, the combination of (i) high velocity trading, (ii) cross asset trading strategies, (iii) multi-venue trading strategies; and (iv) multiple prime broker relationships create a situation where "siloed" risk management, surveillance and compliance solutions (whether they are exchange-centric or trading platform-centric) are not effective and traditional next-day, end-of-day or even later-in-the-day approaches are not timely enough to guard against systemic exposure.

For these reasons, the SEC should authorize CAT consortium members to select an iterative approach to CAT that leverages the following data cloud characteristics:

- Aggregation - Without requiring any modifications to existing systems information should be aggregated as follows:

    - Liquidity Destination Data - Electronic copies of order and execution messages generated by liquidity destinations (i.e., exchanges, ECNs, ATSs and dark pools) should be submitted to a secure CAT data cloud simultaneously with transmission to market participants.

    - Market Participant Data - Electronic copies of order information submitted to and received from liquidity destinations by order entry systems should be submitted to a secure CAT data cloud simultaneously upon submission / receipt by the originating order entry system.

  This data should be collected in real-time using existing capabilities at both liquidity destinations and market participants in whatever form they already use without requiring them to change how they do business thereby substantially decreasing the time and risk associated with implementation of CAT.

- Normalization - Liquidity destinations provide different record layouts, file formats, and symbologies as well as order entry, quote and market data protocols (e.g., at NASDAQ alone records can be in FIX, OUCH, ITCH, RASH and CTCI formats). And among market participants,

[47] Reference Section III - ITERATIVE SOLUTIONS ARE THE BEST WAY TO ACCOMPLISH REAL-TIME, CROSS-MARKET RISK MANAGEMENT AND SURVEILLANCE AS NECESSARY FOR THE INDUSTRY TO CONTINUE TO ENJOY THE BENEFITS OF ELECTRONIC TRADING WITHOUT SUBJECTING FINANCIAL MARKETS TO UNACCEPTABLE SYSTEMIC RISK EXPOSURE.
[48] Reference Section II - ITERATIVE REGULATORY REFORMS CAN ACCOMPLISH GOALS WITHOUT DAMAGING ECONOMIC RECOVERY.
[49] As defined in17 CFR 242.600(55)

the use of even "standard" protocols (like the Financial Information eXchange or "FIX" protocol) means something different at each firm due to nonstandard implementations. This variety of symbologies, formats, order types and approaches - all determined by competition in a free market - "rings true" with the very definition of "capitalism"[50] and fosters innovation, differentiation and improved market performance to the ultimate benefit of individual investors. The CAT data cloud system should normalize this disparate information via "mapping" algorithms to provide an integrated common version of the data (while maintaining the original formatted version of the data) to support real-time cross-market awareness.[51]

- Analysis - The normalized cross-market data should then be analyzed in real-time using "personalized attribute data" to identify transactions in which parties have an interest - either as the originating party or as a party-in-interest who is in the "potential chain of liability" but who may not have had knowledge of the transaction at the time of submission to the market.[52]

- Alerts / Actions - Based on analysis of the normalized cross market data, regulators and market participants should have alert / action options to support venue agnostic, trading system agnostic and clearing firm / broker-dealer agnostic risk management, surveillance and compliance. This approach would enable wrongdoing to be prevented and remedial actions to be taken in real-time before intraday market conditions exacerbate an undesirable situation.

- Full Contextual Intelligent Retrieval - CAT data should be stored and managed in a manner that supports real-time retrieval without losing the full context within which transactions were consummated - i.e., all relevant data should be captured and retained so no details are lost by summarization. In this manner, relevant events preceding, contemporaneous with and subsequent to transactions can be 'replayed' by regulators thereby eliminating sole reliance on data supplied by market participants themselves.

VII. FTEN'S AT-TRADE SECURE DATA CLOUD SYSTEM PROCESSES MORE REAL-TIME FINANCIAL SECURITIES RISK MANAGEMENT THAN ANY OTHER SYSTEM IN THE WORD

The approach taken by FTEN in 2003 when it developed Intraday RiskXposure® - the technology architecture underlying the At-Trade secure data cloud system[53] - was to "whenever possible" rely on data and processes that already exist rather than requiring creation of new data sources or requiring changes to business practices. As noted in the 2004 Strategic White Paper entitled "Time Equals Risk" attached as Exhibit 1, this results in a situation where "Intraday RiskXposure™ does not introduce any latency into trade execution and does not require any systems

[50] Merriam-Webster defines capitalism as "an economic system characterized by private or corporate ownership of capital goods, by investments that are determined by private decision, and by prices, production, and the distribution of goods that are determined mainly by competition in a free market." See http://www.merriam-webster.com/dictionary/capitalism

[51] It is critical for accurate risk management, surveillance and compliance that information be collected at the lowest possible level of granularity - i.e., directly from the source "whenever possible" to avoid potential loss of detail or context which can occur as a result of alteration or summarization. In addition, the original version of data should be retained for audit and potential evidentiary purposes.

[52] This analysis process is a critical differentiator from evaluating "market data" or "tick data" alone which shows broad market information but does not identify information directly applicable to any specific party. Detailed analysis of real-time data from liquidity destinations against user defined criteria can identify "personalized attribute data" to support risk management, surveillance and compliance in real-time for the original submitting party as well as parties in the "potential chain of liability" with regard to transactions about which they may have had no knowledge at the time of submission. This "personalized attribute data" can then be evaluated in the context of broader market information and, if desired, used as input to third-party systems for further processing and / or evaluation.

[53] FTEN's Intraday RiskXposure and At-Trade System architecture is subject to pending patent rights. USPTO Application No. 10/954,527.

changes or any other assistance from client IT departments. It works by collecting actual execution data and mapping that information into an account hierarchy so clients can manage their true intraday risk firm wide."[54]

FTEN pioneered the use of real-time electronic drop copies of execution and order information from liquidity destinations in 2003. FTEN created the first real-time financial data cloud that provides market participants with real-time, market-wide transparency, accountability and control independent of which trading systems are used. FTEN has remained vigilant over the intervening years to ensure that market participants have continued access to the information necessary to support independent real-time risk management, surveillance and compliance systems.[55]

FTEN's At-Trade secure data cloud system already provides real-time, market-wide transparency, accountability and control on a private party basis for major market participant clients. ***FTEN is the largest processor of real-time financial securities risk management in the world - each trading day FTEN provides real-time risk management and surveillance for up to 17 Billion executed shares of U.S. equities / $150 Billion in risk calculations per day***. A decision by the CAT consortium to use FTEN's At-Trade secure data cloud to satisfy CAT goals of real-time cross-market transparency, accountability and control would provide the following benefits:

- Immediate Availability / No Implementation Risk - FTEN's At-Trade secure data cloud would provide immediate full market coverage (market participants are not required to change how they do business which ensures continued innovation and differentiation among market participants and liquidity destinations) with no implementation risk (the system is fully distributed and designed to support market-wide coverage);

- Full Cross-Market / Cross-Asset Coverage - FTEN's At-Trade secure data cloud was architected from inception to process in real-time all electronically traded securities and to incorporate information for all electronically reported securities (e.g., OTC derivatives and SWAPS) - it currently covers all securities under the jurisdiction of the SEC;

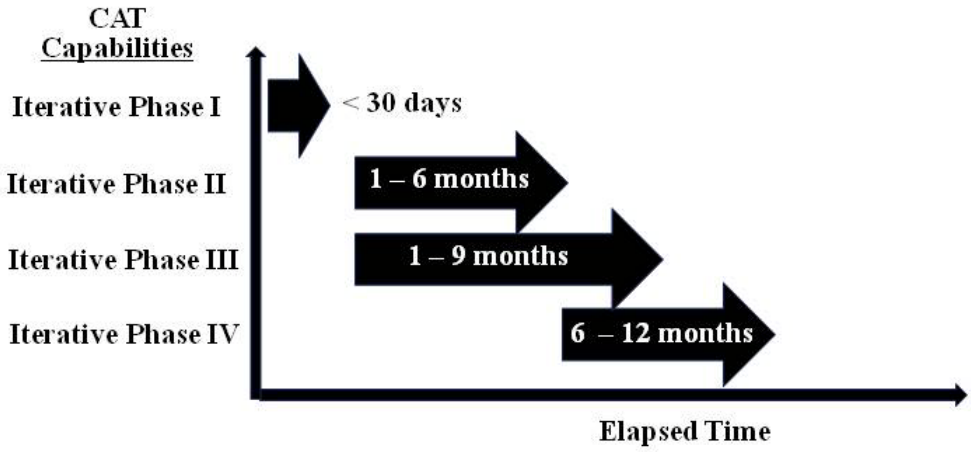
- Facilitates Cooperation Among Regulators - FTEN's At-Trade secure data cloud would provide regulatory agencies with the flexibility to focus on their independent jurisdictional mandates while also facilitating cooperation, data sharing and potential "roll-up" of information between domestic U.S. regulators and / or international counterparts; and

- Reduced Burden on Individual Investors - FTEN's At-Trade secure data cloud approach could be provided for a dramatically lower cost than that estimated by the SEC (the precise cost would depend on detailed system requirements, etc.) and would represent a new source of information available to market participants which could enable new products and services to be provided to market participants (opting in for such products and services would be entirely voluntary and subject to stringent confidentiality and data protection protocols) which could underwrite much, if not all, of the cost of CAT.

[54] See 2004 Strategic White Paper attached as Exhibit 1.

[55] See 2006 FTEN Comment Letter to the SEC attached as Exhibit 2 in which FTEN objected to SR-NASD-2006-026 and SR-NASD-2006-027 under which NASDAQ requested increases in fees charged for data necessary to support independent risk management, surveillance and compliance systems. The SEC ultimately ensured that fee increases did not imperil the availability of this necessary data. It should be noted that NASDAQ's recently proposed SR-NASDAQ-2010-089 (see http://www.sec.gov/rules/sro/nasdaq/2010/34-62564.pdf) would result in an increase in fees charged for NASDAQ Market Participant Identifiers ("MPIDs") necessary to support independent risk management, surveillance and compliance systems unlike other liquidity destinations which do not charge additional fees for such identifiers.

FTEN could deliver the iterative Phase I thru IV capabilities outlined in Section I above[56], in the following time frames by leveraging FTEN's commercially deployed At-Trade secure data cloud to satisfy CAT goals of real-time cross-market transparency, accountability and control.



FTEN appreciates the opportunity to submit this Comment Letter in response to the SEC's proposed Rule 613 Consolidated Audit trail (Release No. 34-62174; File No. S7-11-10).

Sincerely,

Ted Myerson
Chief Executive Officer

Doug Kittelsen
Chief Technology Officer

M. Gary LaFever, General Counsel &
Chief Corporate Development Officer

cc: The Hon. Mary Schapiro, Chairman
The Hon. Kathleen Casey, Commissioner
The Hon. Elisse Walter, Commissioner
The Hon. Luis Aguilar, Commissioner
The Hon. Troy Paredes, Commissioner
James Brigagliano, Deputy Director - Division of Trading and Markets
David Shillman, Associate Director - Division of Trading and Markets
Michael Gaw, Assistant Director - Division of Trading and Markets
John Roeser, Assistant Director - Division of Trading and Markets
Mark Donohue, Assistant Director - Office of Compliance Inspections and Examinations
John Polise, Assistant Director - Office of Compliance Inspections and Examinations
Stewart Mayhew, Deputy Chief Economist - Division of Risk, Strategy, and Financial Innovation
Jennifer Marietta-Westberg, Assistant Director - Division of Risk, Strategy, and Financial Innovation

[56] See Section I DIFFERENT PERSPECTIVES ON A CONSOLIDATED AUDIT TRAIL above.

Exhibit 1 - 2004 Strategic White Paper

Intraday RiskXposure™

Real-Time Intraday Enterprise-Wide Risk Management for the Financial Securities Industry

"Time Equals Risk"

Strategic White Paper

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1. Executive Summary

Clearing Firms, Prime Brokers, Broker Dealers and Hedge Funds all have a common problem - understanding their true intraday risk. Most firms have risk management capabilities as part of their order management system(s) but are unable to track trade activity that occurs outside of their particular system(s). FTEN's Intraday RiskXposure™ offering gathers equity execution data from all sources, analyzes it, presents it in a single integrated view and provides real-time alerts.

By collecting and mapping all relevant trade information from all destinations and trading paths into a single view, clients can finally understand their true intraday risk profile at the account level. Intraday RiskXposure™ was designed to deliver three primary benefits to clients:

- **Enhance revenues**
  - Reduce capital requirements for less risky customers and therefore better utilize available capital.
  - Accept riskier customers because Intraday RiskXposure™ provides tools to monitor their trading activity intraday so clients can intervene if a problem arises.
- **Ensure intraday risk compliance**
  - Prove to regulators that clients are truly monitoring the real risk of all accounts in real-time no matter if their customers are trading with or away from them.
  - Review the historical trends of traders or accounts to help with regulatory compliance issues.
- **Save money by verifying fees**
  - With Intraday RiskXposure™ historical reports, clients can easily audit their SEC, ECN, NASD, and NSCC fees.

Intraday RiskXposure™ gathers equity execution data from all possible sources, analyzes it, presents it in a single integrated view and provides real-time alerts.

Intraday RiskXposure™ does not introduce any latency into trade execution and does not require any systems changes or any other assistance from client IT departments. It works by collecting actual execution data and mapping that information into an account hierarchy so clients can manage their true intraday risk firm wide.

2. Time Equals Risk

It is a generally accepted principal that "Time Equals Risk."

The generally accepted principal that "time equals risk" was the driving force behind the move in 1994 to shorten the settlement cycle for U.S. corporate securities from T+5, or trade date plus five days, to T+3[1]. More recent international initiatives have highlighted the risk created by the passage of time during the trading day – as prices of securities move away from contracted prices the risk increases that non-defaulting parties will incur losses when forced to replace unsettled contracts.[2] The U.S. Securities and Exchange Commission ("SEC" or "Commission") recently issued a "Concept Release"[3] in which it solicited comments on the pros and cons of implementing a settlement cycle shorter than T+3. In the Concept Release, the SEC noted dramatic examples of intraday price movements, such as when the Dow Jones Industrial Average fell by more than 554 points on Monday, October 27, 1997 and fell by more than 512 points on August 31, 1998.[4]

In its comments to the Concept Release, the Securities Industry Association ("SIA") noted that "[t]he incremental risk reduction of moving the settlement cycle from T+3 to T+1…[appears] to be relatively modest in light of the high costs of implementing such a move. While a shorter settlement cycle would be expected to decrease the gross amount of unsettled trades subject to credit or market risk, it could increase operational risk by reducing the time available to correct errors prior to settlement."[5] The SIA went on to note that "[r]isk management procedures should not be driven by the settlement cycle."[6]

A recent TowerGroup report stated that "[h]ardly a day goes by without people in the securities industry lamenting how 'volumes are way down.' Although by some measures they may be correct, by the measures that matter most, they are not: Trade volumes are actually at their highest historical levels. NYSE trade volumes have doubled in the just the last year. This trend spells trouble for many firms – and opportunities for the ones that are prepared."[7] Representatives of the SEC, the NYSE and the NASD have noted that "…risk management is a dynamic

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[1] The Bachman Task Force on Clearance and Settlement in the U.S. Securities Markets, Report submitted to the Chairman of the U.S. Securities and Exchange Commission (May 1992) ("Bachman Report").

[2] "Recommendations for Securities Settlement Systems." CPSS/IOSCO Task Force (November 2002).

[3] Securities and Exchange Commission Release Nos. 33-8398; 34-49405; IC-26384 (March 11, 2004), 69 FR 12922.

[4] SEC Concept Release at 11.

[5] SIA Comments to Concept Release: Securities Transactions Settlement (June 16, 2004) at 3and 4.

[6] SIA Comments to Concept Release: Securities Transactions Settlement (June 16, 2004) at 18.

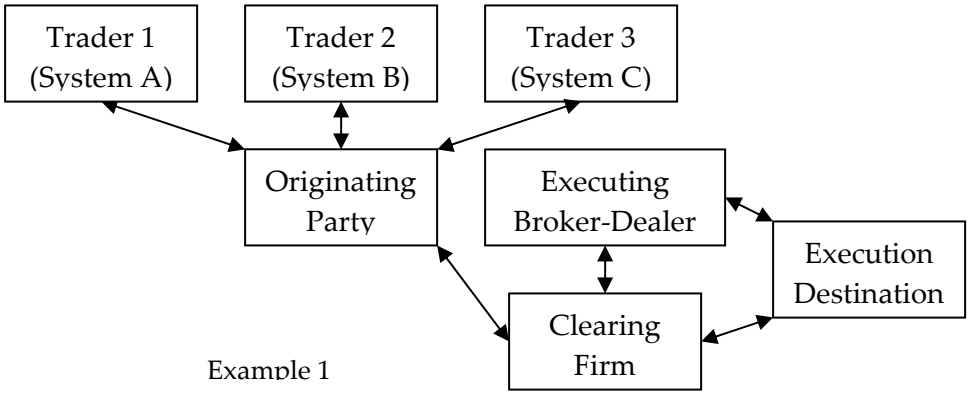
[7] TowerGroup, "Don't Look Now, but Trading Volumes Are Actually Up: Counting Shares vs. Trades," (June 16, 2003).

function that must be modified and improved as a [firm's] business changes and improved processes and procedures become available...."[8] Given the combination of increasing trade volumes and delayed implementation of a shorter settlement cycle, new means of managing risk are necessary. Since little can be done to control overnight risks, *securities firms must take action to control what they can control as soon as they can control it – that is, intraday risk*.

3. Limitations of Current Systems / Benefits of Intraday RiskXposure™

3.1. Dynamic Interrelationships

Current systems fail to address the fact that the identity of parties involved in financial securities transactions (each, a "Party-in-Interest") can vary greatly between one transaction and another and that the specific interrelationships necessary to complete a transaction may not be known at the start of the transaction. In every transaction, there is always a party who is on record as the originator of the desired transaction (the "Originating Party"). However, in certain circumstances, a number of different traders may operate under the umbrella of the same Originator (see Example 1 below).



Example 1

[8] Task Force, "Broker-Dealer Risk Management Practices Joint Statement," July 29, 1999.

If the Originator is not a broker/dealer, the Originating Party must first communicate the order to a Broker/Dealer[9] who can either fill the order or some part of it from its own inventory of securities, submit it to one or more appropriate markets for execution, or route it to another broker for execution (the options available to the Broker/Dealer may be controlled by the Originating Party) (see Example 2 below). If the Broker/Dealer is not a member of one or more of the desired market(s), the Broker/Dealer must enlist the services of an Executing Broker/Dealer[10], who is authorized to execute transactions on the desired market(s) (see Example 2 below). Moreover, if the Executing Broker/Dealer is not authorized to clear and settle securities transactions with the Depository Trust Clearing Corporation[11], the Executing Broker/Dealer must submit the trade to an authorized Clearing Firm[12] for clearance or settlement on behalf of the Originating Party (see Example 2 below). In another scenario, several Broker/Dealers may agree that certain mutual clients may use assets, on account with one Broker/Dealer, to affect transactions with another Broker/Dealer as the Executing Broker/Dealer, even though all or a number of these Broker/Dealers qualify as Executing Broker/Dealers (see Example 4 below)[13]. It is possible in a given transaction that one party may perform all the

Conventional systems only work for subsets of interested parties and relevant transactions.

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[9] "Broker/Dealer" - Any individual or firm in the business of buying and selling securities for itself and others. Broker/dealers must register with the SEC. When acting as a broker, a broker/dealer executes orders on behalf of his/her client. When acting as a dealer, a broker/dealer executes trades for his/her firm's own account. Securities bought for the firm's own account may be sold to clients or other firms, or become a part of the firm's holdings. Copyright©1999-2004 ADVFN PLC. www.advfn.com.

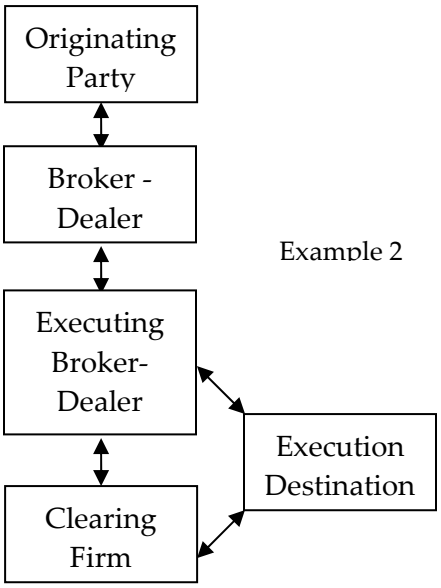
[10] "Executing Broker/Dealer" - A Broker/Dealer that is a member of a desired exchange / liquidity destination.

[11] "Depository Trust and Clearing Corporation" (DTCC) - through its subsidiaries, provides post-trade clearance, settlement, custody and information services for equities, corporate and municipal debt, money market instruments, depositary receipts, exchange-traded funds, unit investment trusts, mutual funds, insurance products and other securities. The National Securities Clearing Corporation (NSCC) subsidiary, which acts as a central counterparty (CCP), provides trade guarantee, netting and risk management services for equity and debt transactions from all U.S. stock exchanges and markets. The Depository Trust Company (DTC) subsidiary has custody of and provides asset servicing for millions of securities issues of issuers from the U.S. and over 60 other countries. DTC serves as a major clearinghouse for institutional post-trade settlement. The Depository Trust and Clearing Corporation (DTCC), which is owned primarily by most of the major banks, broker-dealers, and exchanges on Wall Street. Copyright © 2003. Datamuse. www.MoneyGlossary.com.

[12] "Clearing Firm" - An organization which works with the exchanges to handle confirmation, delivery and settlement of transactions. Such corporations play a key role in ensuring that executed trades are settled within a specified period of time and in an efficient manner; also called clearing corporation or clearing house. Copyright©1999-2004 ADVFN PLC. www.advfn.com. Each Clearing member must also be a member of the exchange. Not all members of the exchange, however, are members of the clearing organization. All trades of a non-clearing member must be registered with, and eventually settled through, a clearing member. Copyright © 1997-2004 Highlight Investments Group. http://www.trading-glossary.com.

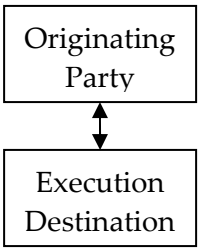
[13] Institutional clients often use brokers to execute transactions involving U.S. equities that are physically held and cleared by another broker or custodial bank, via Delivery vs. Payment (DVP) or Receipt vs. Payment (RVP) transactions. Risk management systems used by executing brokers

various roles identified above, that of the Originating Party, the Executing Broker/Dealer and the Clearing Firm (see Example 3 below). More often than not, however, different parties perform various roles and the number of participants and the interrelationships between these participants can vary greatly between one transaction and another.



Example 2

Originating Party is also an Executing Broker and Self-Clearing Firm



Example 3

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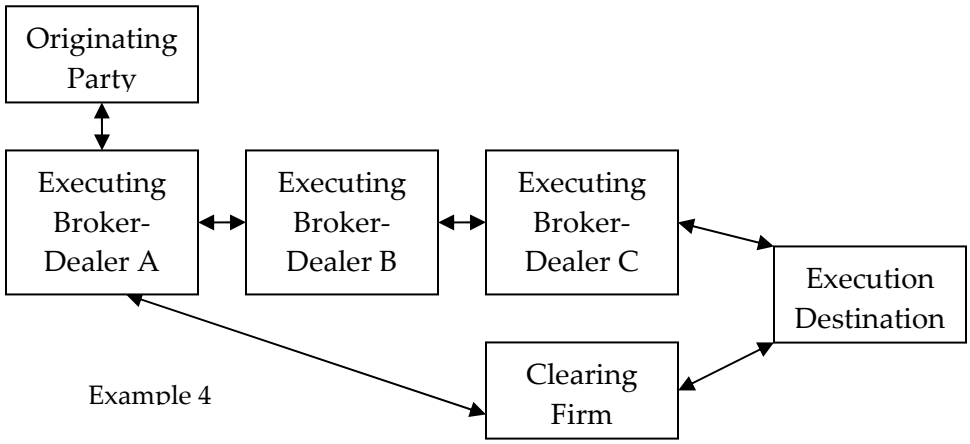

Example 4

When various parties perform different roles, each party has independent financial risk associated with the transaction. Therefore, each Party-in-Interest associated with a transaction has their own separate and independent desire to

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are generally unable to manage risks associated with these transactions, because they are not integrated with the risk management systems of other potentially involved executing brokers and/or with the risk management system(s) of the relevant custodian(s). As a result, risks associated with such transactions may only be evident after close of the trading day.

monitor, capture, mitigate and reduce risks associated with that specific transaction and possibly monitor, capture, mitigate and reduce risks associated with similar transactions across numerous clients[14]. For example, whereas the Originating Party always bears the ultimate financial risk for any transaction, each subsequent party in the execution chain may be liable for making up any deficiency associated with the Originating Party's lack of adequate assets on account to cover the risk of the transaction.

Current securities trading computer applications and stand-alone risk management systems fail to address the reality that Parties-in-Interest can vary greatly between one transaction and another. Such systems require that all Parties-in-Interest use the same, or use one of several prescribed, securities trading computer applications/risk management systems in order for the Parties-in-Interest to receive effective intraday risk management. Given the dynamic nature of relationships between Parties-in-Interest, this requirement makes these systems impracticable for real-time intraday risk management by Parties-in-Interest. Current systems fail to capture and monitor intraday trading activity as necessary for Parties-in-Interest to accurately analyze and manage risk to avoid potential catastrophic losses, statutory and regulatory infractions, fines and regulatory intervention. Conversely, FTEN's Intraday RiskXposure™ is a flexible, non-restrictive solution that provides real-time intraday risk management for all Parties-in-Interest.

Current securities trading computer applications and stand-alone risk management systems fail to address the reality that Parties-in-Interest can vary greatly between one transaction and another.

Securities trading computer applications that assist in executing transactions (e.g., direct access platforms, order management systems, quote management systems, etc.) can provide pre-trade risk management by comparing each proposed transaction processed through the system against established rules and parameters. If one or more of these rules or parameters is violated, the securities trading computer application should not permit the trade to be processed so as to eliminate risk that might arise if the trade was completed. However, for such pre-trade risk management to be effective for all Parties-in-Interest, every step of the proposed transaction must be compared against rules and parameters specific to each Party-in-Interest. If a transaction can occur without a Party-in-Interest having the opportunity to review and stop the trade if it violates its established rules and parameters, pre-trade risk management is ineffective for that Party-in-Interest.

In those situations where not all Parties-in-Interest use the same securities trading computer application, Parties-in-Interest must depend on end-of-day risk management using records submitted after close of the trading day to analyze and identify risk violations. However, by the time such violations are identified

[14] For example, a clearing firm may wish to understand their overall concentration in a particular stock symbol across all accounts to see if they are short in a stock that just made a significant announcement that is expected to effect demand for, and availability of, the stock.

and incorporated into systems, the market has closed and remedial measures must wait until the following trading day by which time volatile market conditions may cause losses to be exacerbated. In addition, risk management processes that rely on end-of-day files are not able to catch violations of risk parameters that occur intraday but are corrected by the end of the day. Without the ability to monitor risk parameters in real-time intraday, a Party-in-Interest may take on more risk intraday than approved by other Parties-in-Interest. Although this may go undetected so long as the violating Party-in-Interest brings itself back into compliance by the end of the day, such unilateral action skews the economic terms that the parties agreed to and can subject Parties-in-Interest to losses and regulatory fines.[15]

Current systems do not provide alerts at a transaction-based level in real-time.

Numerous sophisticated stand-alone risk management systems have also been developed for the financial securities industry. However, these systems deal with aggregate level (i.e., not transaction specific) data and the impact of overall market conditions. Their primary focus is on portfolio risk concerns versus transaction specific information in the context of real-time intraday risk. The modeling systems (e.g., Monte Carlo, Value-At-Risk, etc.) that are used in this category of systems are frequently used to establish buying power / risk appetite on a client by client basis (i.e., credit risk) in broad terms. They are then used to reevaluate portfolios on a daily basis for both credit and market risk. They are not used to manage risk for individual transactions on a real-time intraday basis.

Affiliates of DTCC provide risk management at the Clearing Firm and "Correspondent"[16] level using data independently submitted to such organizations by market participants in connection with the execution and clearance of securities transactions in the U.S. securities market. However, these services do not offer effective real-time intraday risk management for Parties-in-Interest. This deficiency is due to the Clearing Firm/Correspondent level nature

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[15] For example, Party-in-Interest A, a clearing firm, may agree that Party-in-Interest B, an institutional investor, can trade during the trading day in securities valued at up to four times the balance in Party-in-Interest B's trading account. In effect, Party-in-Interest A has extended "margin" credit to Party-in-Interest B in an amount equal to three times the amount in Party-in-Interest B's account. Without access to real-time intraday risk information, Party-in-Interest B could trade in securities valued in amounts significantly greater than the agreed upon four-to-one arrangement. This situation is analogous to someone trying to charge in excess on their credit limit on a credit card, something credit card issuers have sophisticated systems to prevent. However, if Party-in-Interest A only has access to end-of-day information Party-in-Interest A may not know about these infractions until it is too late – if the market moves so far away from Party-in-Interest B's position that Party-in-Interest B cannot correct the situation by the end of the trading day then Party-in-Interest A will suffer a loss equal to any difference between the value of assets in Party-in-Interest B's account and the amount necessary to "make good" on the value of the trades. In addition, Party-in-Interest A and Party-in-Interest B would be in violation of intraday margin requirements subjecting them both to potential fines and regulatory sanctions.

[16] "Correspondent" - A financial organization that performs services (acts as an intermediary) in a market for another organization that does not have access to that market. Copyright © 2003. Datamuse. www.MoneyGlossary.com.

of the provided information, not necessarily at the Party-in-Interest level, and the practice of some Clearing Firms of postponing submission of certain trade data, in summarized or compressed form, until the end of the day to save on associated fees charged by DTCC affiliates.

Separately, NASDAQ[17] ACT Risk Management does not address trades routed to some liquidity destinations, "printed" on exchanges other than NASDAQ, such as the National Stock Exchange a/k/a the Cincinnati Exchange, or handled via Qualified Service Representative ("QSR") arrangements, and therefore also fails to provide effective real-time intraday risk management for Parties-in-Interest.

3.2. System Independence

Existing securities trading computer applications/risk management systems fail to address the reality that Parties-in-Interest may have business and technical reasons for not using the same systems. A recent Carbon Consulting survey revealed that hedge fund managers are no longer relying exclusively on systems provided by their prime brokers to satisfy their technology needs; they are also looking to boutiques at the forefront of product development to help address some of their system needs.[18]

"Black box" systems do not lend themselves to integration / sharing with other Parties-in-Interest since this might lead to disclosure of proprietary algorithms and/or slower processing speeds.

A recent Tabb Group report noted that "…black box models are dramatically changing the way that sophisticated traders and market participants are addressing the markets as lower costs and higher compute and networking speeds are enabling the creation of automated model-based trading. These models are analyzing the market on a microsecond basis, trying to gauge liquidity and seek opportunity. As the models become more accepted, their use increases the velocity of the market and forces other participants to leverage them, as the pace of trading becomes too fast to manage by hand."[19] These "black box" systems do not lend themselves to integration/sharing with other Parties-in-Interest since this might lead to disclosure of proprietary algorithms and/or slower processing speeds.

Intraday RiskXposure™ provides stand-alone real-time, online enterprise-wide equity risk management[20] for Parties-in-Interest without requiring integration with existing portfolio systems, order management systems, order entry systems or program trading systems or implementation assistance from clients' IT departments. Intraday RiskXposure™ is a secure, web-based online service that works with all order management systems and all front-end trading applications

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[17] "NASD" - National Association of Securities Dealers Automated Quotations. Copyright © 2003. Datamuse. www.MoneyGlossary.com.

[18] Hedge Fund Alert, April 28, 2004.

[19] The Tabb Group, "Pushing the Envelope: Redefining Real-time Transaction Processing in Financial Markets" (April 2004).

[20] Initial deployments of Intraday RiskXposure™ support US equities; subsequent releases will support additional securities products.

without introducing any latency or delay into the trade or transaction processing functions.

3.3. Data Neutrality and Objectivity

Intraday RiskXposure™ facilitates compliance with statutory and regulatory requirements -- reducing the risk of regulatory intervention and fines.

FTEN's patent-pending Intraday RiskXposure™ technology collects transaction specific data in real-time directly from all electronic liquidity providers thereby ensuring full coverage of relevant information without relying on potentially biased data provided by traders or data provided by third party technology vendors which may be compromised or limited in scope due to systems issues or performance characteristics.

In addition to enhanced risk management capabilities, the time sensitive, account-level information available via FTEN's Intraday RiskXposure™ service facilitates compliance with statutory and regulatory requirements significantly reducing the risk of regulatory intervention[21] and fines that might result from inadequate controls. In addition, the information supplied by Intraday RiskXposure™ enables clients to verify the accuracy of fees charged by liquidity destinations based on transaction volumes (e.g., ECN, SEC, NASD and NSCC fees) and can save hundreds of thousands of dollars in miscalculated fees.

4. Intraday RiskXposure™

4.1. Benefit Overview

- Clients can define account hierarchy, risk profiles at different levels of customer hierarchies and can define desired alerts (e.g., via email, online pop-up screen, message sent to pager, voice alert, etc.). Intraday RiskXposure™ provides real-time risk evaluation within specified client account hierarchies to address:
    - Credit risk – Buying Power, Concentration;
    - Market risk – Intraday P&L[22], Concentration; and

[21] For example, a NYSE memorandum stipulates that "The Exchange would like to remind members and member organizations that it views comprehensive risk management systems as fundamental to ensuring sound business practices. Accordingly, Exchange examiners will be placing increased emphasis on the effectiveness of these systems during the course of their field examinations."

[22] Robert Hegarty, director of investment management technology research for TowerGroup, notes that many funds, including those employing risk arbitrage and other complex investment strategies, do not use technology to ensure that they effectively manage their exceptionally high trading volumes in and out of positions quickly as required by such strategies. Instead, they rely on error-prone processes built around non-integrated applications and manual processes, such as inputting trades into Excel spreadsheets or disparate management and accounting programs. Intraday RiskXposure™ provides hedge funds the ability to view intraday P&L in real-time thereby enabling managers to implement more accurate, efficient reporting and flexible trading and order management. In addition, Intraday RiskXposure™ can track unrealized intraday P&L

- Operational risk – Selling without Inventory, Restricted Stocks, Hard to Borrow Stocks, Single Order Value, and Single Order Quantity.

- Intraday RiskXposure™ tabulates and evaluates each and every trade on a real time intra-day basis within the context of client defined account hierarchies.

- Positions are updated and displayed on a real time intra-day basis.

- Alerts are immediately sent to identified parties upon account violations.

- Clients can take immediate remedial actions within the same trading day.

- Clients can view historical reports to evaluate infraction information to assist with regulatory compliance initiatives and verify fees charged by liquidity destinations based on transaction volumes (e.g., ECN, SEC, NASD and NSCC fees).

- IT support is not required to implement Intraday RiskXposure™ - Clients do *not* need to make system changes.

- Intraday RiskXposure™ helps clients:
  - Bring on new clients;
  - Reduce capital requirements for "less risky" clients;
  - Provide more accurate pricing for "risky" clients; and
  - Expand the reach of overall available credit.

- FTEN is neutral third party and not a broker dealer – all data is maintained in strict confidence.

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thereby highlighting the impact of price movement on the risk profile of an account, particularly a margin account.

4.2. Available For the First Time

Intraday RiskXposure™ Makes the following benefits available to Parties-in-Interest for the first time:

- Collection of electronic copies of execution messages directly from relevant disparate liquidity destinations (e.g., Exchanges[23], ECNs[24] and other ATSs[25]) and from information related to such transactions provided by third party processors (e.g., confirmations from the DTCC[26] or feeds from third party transaction processing systems) immediately upon availability from such destinations/processors (e.g., real-time/intraday throughout the day or at prescribed time(s) during the day) *without requiring the use of any prescribed securities trading application software in connection with collection of the data*. The objectivity and credibility of this data is beyond reproach since it is received directly from liquidity sources and third party processors and is therefore more acceptable to regulators for client oversight purposes than information collected from clients themselves.

- "Mapping" of information contained in electronic copies received from disparate liquidity destinations and related third party processors, enabling a "normalized" presentation and comparison of relevant detailed and netted data[27] regardless of the source(s) of the data, *without requiring the use of any prescribed securities trading application software to manage the data*.

- *Real-time intraday analysis of "normalized" information to identify infractions for each Party-in-Interest at all levels of detail supported by available information based upon rules and parameters defined by such Party-in-Interest.* Each

[23] "Exchange" - An organization, association or group which provides or maintains a marketplace where securities, options, futures, or commodities can be traded; or the marketplace itself (e.g., NYSE, NASDAQ, etc.). Copyright©1999-2004 ADVFN PLC. www.advfn.com.

[24] "ECN" - An electronic system that brings buyers and sellers together for the electronic execution of trades. It disseminates information to interested parties about the orders entered into the network and allows these orders to be executed. Electronic Communications Networks (ECNs) represent orders in NASDAQ stocks; they internally match buy and sell orders or represent the highest bid prices and lowest ask prices on the open market. The benefits an investor gets from trading with an ECN include after-hours trading, avoiding market makers (and their spreads), and anonymity (which is often important for large trades). Copyright ©1999-2004 ADVFN PLC. www.advfn.com.

[25] ATS – Alternative Trading System.

[26] See footnote 11.

[27] For example, a Party-in-Interest can see a "buy" done on one liquidity destination using one securities trading platform, the "sell" done on another liquidity destination using another platform as well as the fact that they are "flat" overall and have a zero position.

"party-in-interest" can personalize and customize rules and parameters important to them by using confidential and detailed client/account specific information, known only to them, without any other Party-in-Interest having access to or knowledge regarding such information, unless such Party-in-Interest specifically authorizes others to know all or some part of the information. It should be noted that the effectiveness and benefit of Intraday RiskXposure™ risk management for each Party-in-Interest may be enhanced by the reciprocal sharing of information with other Parties-in-Interest in connection with particular transactions. Intraday RiskXposure™ facilitates such sharing in a controlled environment consistent with applicable rules and regulations.

- Generation of real-time immediate post-trade alerts by comparing "normalized" data from different sources against rules and parameters defined by each Party-in-Interest. The substance of the alerts will vary for each Party-in-Interest depending on their role(s) and associated risk(s) in the context of each transaction. *Each Party-in-Interest can define exactly what risks they want to monitor, the threshold for when alerts will be sent, who will receive what alerts and how each alert with be sent.* The delivery mechanism(s) for alerts (e.g., via email, online pop-up screen, message sent to pager, voice alert, etc.) can be customized by each Party-in-Interest.

- Analysis of aggregated "normalized" data, received from different sources, and real-time alerting of infractions is made available to all Parties-in-Interest, compared to the current alternative of only "silo" information being available to the Party-in-Interest officially on record as the Originating Party with regard to each transaction. *Prior to the invention of Intraday RiskXposure™, the timing and scope of the information available to each Party-in-Interest was insufficient to enable such party, on its own, to collect, analyze and act on such information, within the broader scope and more immediate intraday time frame necessary to provide the proper context and background to enable prompt remedial action.*

- Availability of aggregated historical "normalized" information in a data warehouse together with analytical tools that enable *evaluation of compliance by each Party-in-Interest and also by each identifiable client or client group of such Party-in-Interest with applicable intraday rules, regulations and procedures*.

- Availability of aggregated historical "normalized" information in a data warehouse together with analytical tools that enable *evaluation of the accuracy of fees charged by third parties* with regard to each Party-in-Interest and to each identifiable client or client group of such Party-in-Interest, by

comparing volumes and nature of transactions at disparate liquidity destinations against data received directly from such destinations.

- Availability of aggregated historical "normalized" information in a data warehouse together with analytical tools that *enable evaluation of historical trading practices* of each Party-in-Interest and each identifiable client or client group of such Party-in-Interest.

- Availability of aggregated historical "normalized" information in a data warehouse together with analytical tools that enable *evaluation of effectiveness of getting "best price" for desired securities at any given time* for each Party-in-Interest and each identifiable client or client group of such Party-in-Interest.

- A *more accurate, more representative, and more time sensitive presentation of the intraday risks* undertaken by each Party-in-Interest, relating to their daily transactions, thereby *facilitating prompt remedial action to reduce costs from risk infractions and associated sanctions for regulatory violations*.

4.3. Easy to Sign-up For and Use

Clients can sign up for, and begin receiving the benefits of, Intraday RiskXposure™ as follows:

- Intraday RiskXposure™ is a stand-alone ASP service requiring no integration with existing systems.

- Clients authorize Intraday RiskXposure™ to receive electronic copies of transactions from liquidity destinations on which they and their customers trade and, if desired, designate Intraday RiskXposure™ as an "Interested Party" to receive copies of DTCC "confirm" messages.

- Clients deliver sample beginning-of-day files which are "mapped" into Intraday RiskXposure™.

- ASP-based web tools enable clients to define risk profiles for each account or account group and to identify who receives what alerts, when and how.

- Beginning-of-day files can be used to populate client account hierarchies each morning. regulatory violations.

4.4. Cooperation with Other Risk Management Systems

FTEN will work with NASDAQ and providers of other risk management systems to combine the unique benefits of Intraday RiskXposure™ with the strengths of such other offerings. Clients paying for NASDAQ ACT Risk Management have the option to save fees otherwise charged by NASDAQ ($0.035 per trade plus $17.25 per correspondent not to exceed $10,000 per month per correspondent) by notifying NASDAQ in writing pursuant to Rule SR-NASD-2002-57 of their desire to use Intraday RiskXposure™ in lieu of ACT Risk Management. In many instances, resulting savings will exceed Intraday RiskXposure™ fees thereby enhancing risk management capabilities while at the same time improving profitability for Intraday RiskXposure™ clients.

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Exhibit 2 - 2006 FTEN Comment Letter

Comment on Proposed SR-NASD-2006-026; SR-NASD-2006-027 - NASDAQ Plans to Implement New Pricing for CTCI Connectivity

Submitted by M. Gary LaFever, Esquire
Executive Vice President & General Counsel
FTEN, Inc.
800 Third Avenue
Twenty-Third Floor
New York, NY 10022
(303) 823-8111
glafever@ften.com

Summary

The U.S. financial securities industry is best served by ensuring that clearing firms have access to intraday risk management tools that can effectively monitor acceptable levels of credit and risk exposure for correspondent firms. NASD member clearing firms are subject to a Securities and Exchange Commission ("SEC") Order [Release No. 34-47208; File No. SR-NASD 2002-157] that requires them to use NASDAQ's ACT Risk Management system unless they have a comparable intraday risk management system; however, comparable systems require access to the very data that is the subject matter of SR-NASD-2006-026 and SR-NASD-2006-027. The proposed price increase under SR-NASD-2006-026 and SR-NASD-2006-027 would impose an undue burden on competition and be contrary to the purposes of the Securities Exchange Act of 1934 unless measures are taken to ensure that clearing firms have continued access to execution data on cost effective terms so as to allow alternative providers of intraday risk management systems to compete on a level playing field with NASDAQ's ACT Risk Management. **FTEN, Inc. (FTEN) respectfully requests that proposed SR-NASD-2006-026 and SR-NASD-2006-027 be modified such that the term "Station" is clearly defined specifically within the context of clearing firms to refer only to the cost of bandwidth necessary to transmit real time execution messages for all correspondents of a clearing firm.**

NASDAQ's ACT Risk Management and Current Market Conditions

In October 1990, the SEC approved the risk management functions of NASDAQ's Automated Confirmation Transaction (ACT) service. The SEC mandated that all NASD members participate in the service "[i]n order to establish ACT as the industry standard for reporting and comparing equity transactions in The NASDAQ stock market." These rules required that all NASD member clearing firms use NASDAQ's risk management system known as ACT Risk Management. In January 2003, the SEC issued an Order approving an opt-out provision from ACT Risk Management [Release No. 34-47208; File No. SR-NASD 2002-157]. In this order, the SEC said "The ability of [clearing firms] to adequately assess the risk of their correspondent firms is critical to the protection of investors and the public interest, as required by the Act. Therefore, the Commission finds that the [request by NASDAQ to modify the rule otherwise requiring all clearing firms use NASDAQ's ACT Risk Management System] is consistent with the Act because the proposal seeks to ensure that all NASD clearing members retain the ability to monitor the trading activities and risk exposures of their correspondent firms, either by using the ACT risk management program, or another risk management tool comparable to ACT's risk management program. The proposed rule change also fosters cooperation and coordination with persons engaged in the regulating, clearing, settling, and processing of information with respect to and facilitating transactions in securities because it ensures that NASD clearing members utilize a risk management tool that monitors the acceptable levels of credit and risk exposure for correspondent firms, which helps to ensure the rapid and reliable comparison and settlement of transactions." With the benefit of hindsight, it seems that this enlightened view taken by NASDAQ would allow clearing firms to produce their own systems to evaluate risk. However, as with many software and services markets, the ability to provide tools to address enterprise needs often comes from third parties who can develop more sophisticated technology offerings

by addressing the needs of numerous clients and meeting the market needs of many, as opposed to just addressing the in-house needs of a single firm.

In the 1990s when these rules were promulgated, NASDAQ's ACT Risk Management system provided adequate coverage of intraday trading and volatility risks in the Over-the-Counter (OTC) market because NASDAQ was, for all practical purposes, the OTC market. But, with the dramatic increase in popularity of ECNS since the 1990s (which for the most part are not covered by ACT Risk Management), ACT Risk Management now covers less than fifty percent of the OTC market. And, since the 1990s the lines between securities listed on the New York Stock Exchange ("Listed" securities) and OTC securities have blurred and trading now frequently involves market sectors that are unrelated to whether stocks are Listed or OTC. ACT Risk Management does not provide coverage for Listed trades and provides coverage for less than half the OTC market. When taken together, ACT Risk Management, while an excellent tool in its day now covers at most one-third of the market.

Intraday RiskXposure

FTEN is an enterprise software provider with a corporate mandate to maintain its independence and facilitate financial commerce by identifying and addressing inefficiencies in existing financial services processes and procedures – FTEN is not an exchange, a clearing firm, a financial services company or a broker dealer. FTEN was asked by clearing firms if it could help address the growing challenges in managing and monitoring acceptable levels of intraday credit and risk exposure for correspondents resulting from: (1) Market fragmentation - in addition to the longstanding OTC/Listed dichotomy eluded to above, the existence of multiple liquidity destinations for OTC trading creates risk scenarios that are not capable of being detected at any one of the individual liquidity destinations; (2) Limitations of pre-trade risk management systems – pre-trade risk management systems fail to provide effective risk management for trades handled outside the systems, information about which is not available until the next trading day when significant harm from risk infractions may have occurred and the availability of effective remedial actions may be severely limited. In addition, these systems are further hampered in their attempt to provide adequate protection due to the increasing popularity of (a) multiple party transactions, (b) disparate, non-integrated trading platforms and (c) black-box trading strategies that do not support latency introduced by pre-trade processes; and (3) Delayed implementation of shorter settlement cycles – the practical difficulties of implementing Straight-Through-Processing and shortened settlement cycles have delayed the anticipated risk management benefits that these initiatives were supposed to make available. Solutions that provide broader market transparency, facilitate improved regulatory oversight, enhance accountability and improve intraday risk management without requiring changes to established procedures or systems are therefore necessary to address the market trends identified above.

In response to these client requests, FTEN developed Intraday RiskXposure ("RiskXposure" or "RX"). RiskXposure is an innovative, patent-pending system (USPTO Pub. No.: 20050203825 - Financial Data Processing System) that enables clearing firms to comply with the SEC Order to "utilize a risk management tool that monitors the acceptable levels of credit and risk exposure for correspondent firms." RiskXposure provides better management and monitoring of acceptable levels of intraday credit and risk exposure for correspondents by uniquely aggregating, analyzing and processing execution messages from each of the liquidity destinations (e.g., NASDAQ, NYSE, INET, BRUT, ARCA, etc.) throughout the trading day. In addition to providing nearly 100% market coverage, RiskXposure also: (1) imports clients' positions - the only way to calculate real Profit & Loss and to assess real risk within the context of correspondents' holdings; (2) generates intraday reports on securities analysts say to watch - RiskXposure is the only system that provides information on current holdings - opening positions plus intraday trades, so reports have real, actionable value to risk managers - should a client already have a position in, or the millisecond a client takes a position in, a flagged security then risk managers are alerted; (3) supports "what-if" modeling - RiskXposure is the only system that enables risk managers to search for correspondents holding a particular security intraday and model price movement by an estimated percentage to highlight those that could be in trouble if such price movement were to occur; and (4) can store historical data and provide research and reporting tools to support trend analysis, verification of third party transaction fees and response to regulatory inquiries and audits.

In March 2005, NASDAQ announced new port fees for NASDAQ and BRUT which made the cost of acquiring execution data necessary to support alternative intraday risk systems in FIX format economically prohibitive. This pricing generated adverse public reaction (e.g., Securities Industry News ran a story entitled Nasdaq: Mixed Message on Connectivity stating that NASDAQ might have "...a nasty April Fools' Day surprise for some correspondent clearers ..." - see http://securitiesindustry.com/midweek.cfm?articleid=15188). NASDAQ subsequently informed FTEN that it had not contemplated the impact of port pricing changes on FTEN's Intraday RiskXposure offering since no one else uses execution messages in the novel and unique way that FTEN does to provide real-time, cross-market intraday risk management. In fact, despite overwhelming evidence that risk management is a key issue facing financial services companies generally and clearing firms specifically due to their correspondent oversight and financial responsibilities, other than FTEN's Intraday RiskXposure offering there is still no third party alternative to ACT Risk Management and ACT Risk Management fails to provide coverage for Listed securities and covers only one-third of the OTC market. Over the ensuing year, NASDAQ and FTEN have held discussions regarding a variety of different ways to ensure continued access to execution data necessary to support alternative risk management solutions (e.g., ensuring continued access to execution messages in CTCI format), although it is important to note that NASDAQ data is only a minority of the data relevant to comprehensive real-time management of cross-market intraday credit and exposure risk.

Proposed New Pricing for CTCI Connectivity

The proposed new pricing for CTCI connectivity set forth in SR-NASD-2006-026 and SR-NASD-2006-027 may make sense in the context of broker-dealers and clients who want access to execution messages for their own purposes. However, in the context of clearing firms who have an affirmative obligation to manage the risk and trading activities of their correspondents, the proposed pricing creates an inherent conflict of interest since clearing firms must "monitor the trading activities and risk exposures of their correspondent firms, either by using the ACT risk management program, or another risk management tool comparable to ACT's risk management program" and comparable alternative systems require access to the very data which is the subject matter of SR-NASD-2006-026 and SR-NASD-2006-027. Other liquidity destinations either charge clearing firms nothing for this data or only charge minimal fees to cover the actual cost of providing the data. Execution messages for NASDAQ affiliates are no longer available on economically viable terms in FIX format and the proposed pricing set forth in SR-NASD-2006-026 and SR-NASD-2006-027, if not carefully defined, could make the only remaining format in which such data is provided, CTCI, uneconomical as well. We believe clearing firms should be entitled to this data on fair and equitable terms so they can exercise their option to use an alternative intraday risk management system and comply with the SEC Order. It should also be noted that in the context of clearing firms, the data in question reflects trades done by their correspondents for which the clearing firms are ultimately financially responsible, the details of which they are legally entitled to and copies of which they already receive the next day from the National Securities Clearing Corporation without additional charge. Therefore, the provision of this very same data to clearing firms in real-time as necessary to support alternative intraday risk systems should be provided to them for only the incremental cost of providing it in real time, a requirement easily and cost effectively met with the commodity information technologies readily available today.

Having previously increased the fees for execution messages provided in FIX format (see http://securitiesindustry.com/midweek.cfm?articleid=15188 referenced above), the proposed price changes set forth in SR-NASD-2006-026 and SR-NASD-2006-027 would correlate fees charged for execution messages provided in the only other available format, CTCI, to the number of "Stations" involved without including a precise definition of "Station." This proposed terminology makes sense only to the extent the term "Station" is defined to refer to a permissible user of data versus the number of parties for whom data is provided. Such an interpretation would be consistent with the idea that the data actually belongs to the clients who originate and pay for trades and clearing firms who are ultimately financially responsible for the trades. In the current technology environment there is relatively minimal cost associated with providing this data on a real time basis. Though clearing firms will obviously require larger data communication "pipes" to provide relevant data for multiple clients on a real time basis, the

incremental cost should be de minimus and should only relate to the actual cost of transmitting more packets of information. If the current proposal is to be primarily based on the definition of the word “Station,” the term should be defined to refer to a permissible user of data versus the number of parties for whom data is provided. For example, with regard to a broker-dealer each "Station" should encompass data associated with a Market Participant ID (“MPID”) that the broker-dealer owns, but with regard to a clearing firm a "Station" should encompass data associated with all MPIDs for which the clearing firm provides clearing services. If the word “Station” were to be defined otherwise (e.g., if the term were defined in the context of clearing firms such that each correspondent of the clearing firm would equal a “Station”), then there would be no economic means to provide third party risk analysis systems as data fees would have to be paid for hundreds if not thousands of clearing firm correspondents. Surely this cannot be the result intended by allowing NASDAQ affiliates to charge for data on trades originated by clients who have already paid for the trades and the reporting and administrative costs associated with such trades and with respect to which clearing firms are ultimately financially responsible.

Conclusion

FTEN, Inc. respectfully requests that proposed SR-NASD-2006-026 and SR-NASD-2006-027 be modified such that the term "Station" is clearly defined specifically within the context of clearing firms to refer only to the cost of bandwidth necessary to transmit real time execution messages for all correspondents of a clearing firm, bearing in mind that this data belongs to the originators of these trades and is being used to provide alternative and more inclusive intraday risk management so that alternative comparable intraday solutions remain available “to ensure that all NASD clearing members retain the ability to monitor the trading activities and risk exposures of their correspondent firms.”