

Title: Consolidated Audit Trail - debunking the FUD

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tl;dr: no CAT is not delayed, it's being used now. no CAT itself does not necessarily mean huge changes.

Hello everyone. Long time HODLer of stocks we like, first time poster.

I'd like to take some time to educate you on CAT and some of the rumors flying around this and other subreddits.

****CAT basics****

As many of you already know, CAT is the new Consolidated Audit Trail. Here's what the official site at <https://catnmsplan.com> has to say about itself:

>On July 11, 2012, the U.S. Securities and Exchange Commission (SEC) voted to adopt Rule 613 under Regulation NMS requiring the national securities exchanges and national securities associations listed below (collectively, the SROs) to submit an NMS plan (Plan) to the SEC to create, implement, and maintain a consolidated audit trail (CAT).

>Guiding Principles

>In creating a Consolidated Audit Trail (CAT) pursuant to SEC Rule 613, the SROs have developed the following Guiding

>Principles:

> * The CAT must meet the specific requirements of Rule 613 and achieve the primary goal of creating a single, comprehensive audit trail to enhance regulators' ability to surveil the U.S. markets in an effective and efficient way.

> * The reporting requirements and technology infrastructure developed must be adaptable to changing market structures and reflective of trading practices, as well as scalable to increasing market volumes.

> * The costs of developing, implementing, and operating the CAT should be minimized to the extent possible. To this end, existing reporting structures and technology interfaces will be utilized where practicable.

> * Industry input is a critical component in the creation of the CAT. The SROs will consider industry feedback before decisions are made with respect to reporting requirements and cost allocation models.

****Some general background****

As you may know, US securities exchanges process billions of trades a month. Per the SEC all of that data must be tracked. CAT, which just replaced OATS, is the system that does that. FINRA and the SEC use this type of system to audit market participants.

Before I dive into specific details and dates for CAT I want to take a moment to describe the magnitude of a system like this. It's no small feat to ingest and process that much data. It takes years to develop systems like this and migrating from one to another (OATS to CAT) could take years (which it did).

These systems are developed to be highly redundant and reside in multiple physical datacenters for failover and disaster recovery purposes.

The reason I know a bit about this is because I've helped companies deploy this type of application into

cloud environments. I've also been part of a team that developed and ran distributed systems that managed other systems across AWS, GCP & Azure. I've developed python even processing systems using AWS Lambda & DynamoDB to process 10's of thousands of events per day.

My current full time job is with a large cloud provider helping customers effectively manage these types of considerations as they begin to use our cloud services.

****Recent History****

People in this subreddit and others first got excited about CAT a few months back when Charlie did his first investigations into it. From everything we know about it it seems to address some of the current failings in the market and FINRA/SEC's abilities to know about and take action on bad actors & actions.

This is definitely the goal of the project itself. However, just having a tool capable of doing so does not by itself change the organizations that use it. FINRA & SEC have decades of entrenched processes and things aren't going to change course overnight because their webapp tool got a makeover.

Some things that are absolutely true and given a good critical eye you should agree:

- * You can't switch from one massive system like this to another overnight. There are likely dozens or even hundreds of message payloads that CAT must be able to accept, process and store. All of the reporting and auditing functionality must be re-implemented or updated for the new system. Testing this type of functionality takes months at best and potentially years.

- * All of the market participants must be able to send data to CAT. Obviously the new system will track additional information and likely much of the existing information format has been updated. Every market participant has to develop their ability to create these data payloads and send them to the system.

- * You don't turn off your existing system before the new one has been thoroughly vetted. The SEC mandates a system like this is in place - they aren't turning off OATS before CAT has fully replaced it.

****Current State & Relevant Links****

Now to the easy part - linking information from <https://catnmsplan.com> with specific timeline details.

Ideally just this first link would be sufficient to put all of this FUD around CAT to bed. From https://www.catnmsplan.com/sites/default/files/2021-03/3.15.21_CAT_Reporting_Technical_Specifications_for_Industry_Members_v2.2.1r9_CLEAN.pdf you'll find the following information on page 8:

>Table 1: Industry Specifications Phased Approach Phase 2a – Equities Part 1 Go Live 6/22/2020 - All events and scenarios covered by OATS

This is saying that participants must be sending production data to CAT as of that date, which is 14+ months ago.

Next we can check the CAT frequently asked questions at <https://www.catnmsplan.com/faq>:

>A6. When will Large Industry Members begin reporting data to the CAT?

>Updated: 04/27/2020

>In light of the SEC's recent exemptive order, there are new dates by which Large Industry Members (which are Industry Members other than Small Industry Members) are required to begin reporting to the CAT. Large Industry Members are required to begin reporting Phase 2a Industry Member Data to the CAT by June 22, 2020, and are required to begin reporting Phase 2b Industry Member Data to the CAT by July 20, 2020. However, Large Industry Members were permitted, but not required, to begin reporting Industry Member Data to the CAT as of April 20, 2020. Phase 2a Industry Member Data and Phase 2b Industry Member Data are described in detail in the Industry Member Technical Specifications.

A second FAQ entry that's very pertinent to the misconception about CAT delays and OATS shutdown:

>A19. Will any existing SEC or SRO reporting systems be eliminated once the CAT is operational?

>Added: 03/21/2018

>The CAT NMS Plan requires the Participants to submit rule filings to eliminate or modify any rules or systems that would be redundant of the CAT. In May 2017, certain Participants filed with the SEC rule filings to eliminate or modify certain redundant rules and systems, including rule filings related to FINRA's Order Audit Trail System ("OATS") and the Electronic Blue Sheets ("EBS"). In light of the delay in the commencement of CAT reporting, these rule filings were withdrawn. Nevertheless, the Participants intend to revisit the retirement of systems filings as the reporting commencement date approaches.

Based on this you should be able to deduce that in order to turn down OATS CAT *must* be operational.

FAQ entry about participant testing (the system must be operational before you can effectively test it):

>A27. When does Industry Member testing begin?

>Updated: 05/02/2019

>Industry Member testing for Phase 2a of CAT reporting is scheduled to begin in December 2019.

The last thing I want to link directly is this dated June 23, 2021: <https://www.federalregister.gov/documents/2021/06/29/2021-13784/self-regulatory-organizations-financial-industry-regulatory-authority-inc-notice-of-filing-and>

>On August 14, 2020, FINRA filed with the Commission a proposed rule change to delete the OATS Rules once members are effectively reporting to the CAT (the "OATS Retirement Filing").[4] On October 29, 2020, FINRA filed Amendment No. 1 to the proposed rule change ("Amendment No. 1") and a response to the comments that were submitted on the original filing ("Response to Comments").[5] On November 30, 2020, the Commission approved the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.[6]

In the OATS Retirement Filing, FINRA proposed to eliminate the OATS Rules once members are effectively reporting to the CAT and the CAT's accuracy and reliability meet certain standards. Specifically, FINRA proposed that before OATS could be retired, the CAT generally must achieve a sustained error rate for Industry Member [7] reporting in five categories for a period of at least 180 days of 5% or lower on a pre-correction basis, and 2% or lower on a post-correction basis (measured at T+5). In addition to the maximum error rates and matching thresholds, FINRA's use of CAT Data must confirm that (i) there are no material issues that have not been corrected, (ii) the CAT includes all data necessary to allow FINRA to continue to meet its surveillance obligations, and (iii) the Plan Processor is sufficiently meeting its obligations under the CAT NMS Plan relating to the reporting and linkage of Phase 2a Industry Member Data.

>In the OATS Retirement Filing, FINRA explained that its review of CAT Data and error rates would be based on data and linkages in the initial phase of reporting (or "Phase 2a"), which replicate the data in OATS today and thus are most relevant for OATS retirement purposes. Phase 2a Data includes all events and scenarios covered by OATS and applies only to equities. FINRA will not consider options order events or Phase 2c data and validations, which are not in OATS today, for purposes of OATS retirement.

>As described below, FINRA has determined that the CAT meets the accuracy and reliability standards approved by the Commission in the OATS Retirement Filing.

This is FINRA stating in no uncertain terms that it is satisfied with the deployment & capabilities of CAT and to schedule the removal of OATS, which was subsequently done on Sep 1, 2021.

The last snippet I'll copy is this:

>Thus, FINRA proposes to retire OATS in accordance with the schedule set forth herein. FINRA will run its surveillance patterns for review periods through the end of the second quarter of 2021 using OATS data and begin using—and be fully reliant on—CAT Data for its surveillance patterns for review periods beginning in the third quarter of 2021. Following the retirement of OATS, FINRA expects to maintain the current established cadence of its monthly, quarterly and semi-annual surveillance patterns. In addition, FINRA's analytics platforms will have access to CAT Data as soon as such data is made available to regulators. Thus, outside of regularly scheduled surveillance pattern runs, FINRA can perform expedited analytics, as required by market events.

As you can see FINRA tested their surveillance through Q2 of this year and began to rely on it fully in Q3.

Summary of dates:

- * July 2012 - SEC authorizes CAT project
- * May 2017 - Filing to turn down OATS removed as CAT was not ready
- * May 2019 - Member testing
- * April 2020 - Large Industry Members were permitted, but not required, to begin reporting Industry Member Data to the CAT
- * June 2020 - All events and scenarios covered by OATS (are in CAT)
- * June 22, 2020 - Large Industry Members are required to begin reporting Phase 2a Industry Member Data to the CAT
- * Q2, 2021 - FINRA testing CAT for surveillance/audits
- * Q3, 2021 - FINRA using CAT for surveillance/audits
- * Sep, 2021 - OATS removed from rules, participants no longer required to send data to it

I hope this clears everything up for everyone. Have a nice MOASS.

edit: regarding the reported "delay to Sep 3rd" from <https://youtu.be/bjvDixIK1SA>, they are reviewing this document: <https://www.govinfo.gov/content/pkg/FR-2021-07-01/pdf/2021-14012.pdf>

In it we find the following:

>Joint Industry Plan; Notice of Designation of a Longer Period for Commission Action on a Proposed Amendment to the National Market System Plan Governing the Consolidated Audit Trail
June 25, 2021.

I. Introduction

On December 18, 2020, the Operating Committee for Consolidated Audit Trail, LLC ("CAT LLC"), on behalf of the following parties to the National Market System Plan Governing the Consolidated Audit Trail (the "CAT NMS Plan" or "Plan"): 1 BOX Exchange LLC; Cboe BYX Exchange, Inc., Cboe BZX Exchange, Inc., Cboe EDGA Exchange, Inc., Cboe EDGX Exchange, Inc., Cboe C2 Exchange, Inc., Cboe Exchange, Inc., Financial Industry Regulatory Authority, Inc. ("FINRA"), Investors Exchange LLC, Long-Term Stock Exchange, Inc., Miami International Securities Exchange LLC, MEMX, LLC, MIAX Emerald, LLC, MIAX PEARL, LLC, Nasdaq BX, Inc.,

Nasdaq GEMX, LLC, Nasdaq ISE, LLC, Nasdaq MRX, LLC, Nasdaq PHLX LLC, The NASDAQ Stock Market LLC, New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago, Inc., and NYSE National, Inc. (collectively, the “Participants,” “selfregulatory organizations,” or “SROs”) filed with the Securities and Exchange Commission (“SEC” or “Commission”) pursuant to Section 11A(a)(3) of the Securities Exchange Act of 1934 (“Exchange Act”),² and Rule 608 thereunder,³ a proposed amendment (“Proposed Amendment”) to the CAT NMS Plan that would authorize CAT LLC to revise the Consolidated Audit Trail Reporter Agreement and the Consolidated Audit Trail Reporting Agent Agreement to insert limitation of liability provisions. The Proposed Amendment was published for comment in the Federal Register on January 6, 2021.⁴

On April 6, 2021, the Commission instituted proceedings to determine whether to approve or disapprove the Proposed Amendment.⁵ Rule 608(b)(2)(i) of Regulation NMS provides that such proceedings shall be concluded within 180 days of the date of the publication of notice of the plan or amendment and that the time for conclusion of such proceedings may be extended for up to 60 days (up to 240 days from the date of notice publication) if the Commission determines that a longer period is appropriate and publishes the reasons for such determination or the plan participants consent to a longer period.⁶ The 180th day after publication of the Notice for the Proposed Amendment is July 5, 2021. The Commission is extending this 180-day period.

The Commission finds that it is appropriate to designate a longer period within which to conclude proceedings regarding the Proposed Amendment so that it has sufficient time to consider the Proposed Amendment and the comments received. Accordingly, pursuant to Rule 608(b)(2)(i) of Regulation NMS,⁷ the Commission designates September 3, 2021, as the date by which the Commission shall conclude the proceedings to determine whether to approve or disapprove the Proposed Amendment (File No. 4–698).

The footnote 4:

>4. See Notice of Filing of Amendment to the National Market System Plan Governing the Consolidated Audit Trail, Exchange Act Release No. 90826 (December 30, 2020), 86 FR 591 ("Notice").

This can be found here: <https://www.govinfo.gov/app/details/FR-2021-01-06/2020-29216>

Contents:

>Cyber Breach Analysis. The first analysis we present is to identify specific potential breach scenarios and assess the relative difficulty of implementation, relative frequency, and conditional severity of each. As part of this assessment, we identified eight potential scenarios in which bad actors could attempt to unlawfully obtain, utilize, and monetize CAT data. Of course, we recognize that cyber-attacks on the CAT could vary from the scenarios we hypothesize, but we offer them to provide a framework to assess the economic exposures that flow from the gathering, storage, and use of CAT data. Our risk analysis indicates that most of these scenarios are relatively low frequency events because they are either difficult to implement, unlikely to be meaningfully profitable for a bad actor, or both. The scenario analysis also indicates that three types of breaches--reverse engineering of trading algorithms, inserting fake data to wrongfully incriminate individuals or entities, and removing data to conceal misconduct--could result in "extremely" severe economic consequences (which we define as potentially greater than \$100 million in damages). We conclude that all three of these types of breaches are relatively low frequency events. Summary: Regulation vs. Litigation to Mitigate Cyber Risk for the CAT. The second analysis we present focuses on whether the cyber risk posed by CAT should be addressed through ex-ante regulation, ex post litigation, or a combination of both approaches. In a prior version of the CAT Reporter Agreement, CAT LLC included a limitation of liability provision, which memorialized the Participants' view that Industry Members should not be able to litigate against CAT LLC or the Participants to recover damages sustained as a result of a cyber breach. Although the current operative version of the Reporter Agreement does not contain a limitation of liability, we understand that CAT LLC is submitting this White Paper in connection with CAT LLC's request that the SEC amend the CAT NMS Plan to authorize such a provision. We understand that the Industry Members have opposed any limitation of liability provision and contend that CAT LLC, as the party holding the CAT data, should be subject to litigation by the Industry Members in the event of a cyber breach. In deciding whether to approve Participants' proposed plan amendment, an important question for the SEC to address is whether, in light of the extensive cyber requirements already imposed on CAT LLC through regulation, the SEC-mandated nature of the CAT, and the ability of the SEC to bring enforcement actions to compel compliance, it is appropriate to also allow Industry Members to sue CAT LLC and the Participants. As part of our analysis, we specifically assess whether including a limitation of liability provision in the CAT Reporter Agreement is appropriate from the perspective of economic theory as applied to the specifics of this situation. By applying the economic principles of liability and regulation as a means of motivating risk-minimizing behavior and considering the crucial role of the SEC's mandates regarding cyber security for the CAT (which already incorporate the concerns of entities involved in the National Market System as a whole), we conclude that the regulatory approach leads to the socially desirable level of investment in cyber security and protection of CAT data. We further conclude that SIFMA's position, which advocates allowing Industry Members to litigate against CAT LLC and the Participants in the event of a cyber breach, would result in increased costs for various economic actors--including CAT LLC, the Participants, Industry Members, and retail investors--without any meaningful benefit to the CAT's cyber security. At a high level (and as discussed in extensive detail below), we therefore conclude that CAT LLC's proposal to limit its liability and the liability of the Participants is well supported by applicable economic principles in the framework of the SEC's mission and its mandates regarding the CAT. As a general matter, economic theory provides that society can motivate economic actors to take appropriate precautions to minimize the likelihood and consequences of accidents and misconduct through: (a) A regulatory approach (i.e., dictating specific precautions, requirements, and standards in advance), (b) a litigation approach (i.e., civil liability for damages caused by failing to adhere to a general standard of care), or (c) a combination of (a) and (b). At the outset, we note that we do not address this question in a vacuum. Rather, we conduct our examination in the context

of an extensive regulatory program that the SEC has enacted mandating specific cyber standards, policies, procedures, systems, and controls that CAT LLC and the Plan Processor must implement. This regulatory regime was developed with extensive feedback from the securities industry (e.g., through the Development Advisory Group and the Advisory Committee) and is subject to ongoing review and modification through a public review and comment process. Moreover, CAT LLC's compliance with the requirements of this regulatory regime can be policed by the SEC's Enforcement Division. We also note that in adopting the CAT NMS Plan, the SEC concluded that the regulatory approach to cyber security was sufficient when it stated that ``the extensive, robust security requirements in the adopted [CAT NMS] Plan . . . provide appropriate, adequate protection for the CAT Data." \5\

Sep 3rd has nothing to do with whether CAT is being used now, which it is.