

FINANCIAL INFORMATION FORUM

5 Hanover Square
New York, New York 10004

212-422-8568

Via Electronic Delivery

October 1, 2018

Mr. Shane Swanson, Chief Compliance Officer
ThesysCAT, LLC
1740 Broadway
New York, NY, 10019

Dear Mr. Swanson,

The Financial Information Forum (“FIF”)¹ Consolidated Audit Trail Working Group (“FIF CAT WG”) appreciates the opportunity to provide comments and recommendations to ThesysCAT, LLC, the CAT NMS Plan Operating Committee (“Operating Committee”) and the CAT Advisory Committee (“Advisory Committee”) on V0.6. of the Industry Member Order Reporting Technical Specifications (“Tech Spec”).² FIF acknowledges and appreciates that many of the recommendations submitted by the FIF CAT Working Group on July 16, 2018 have been incorporated into V0.6. Following publication on September 5th, FIF reviewed the contents of V0.6 of the Tech Spec and convened a working group to perform a detailed review of each item contained in the Tech Spec. The results of the review process are attached to this letter in the form of a summary table. FIF comments and recommendations contained in the review summaries are intended to identify and provide proposed solutions to the remaining issues with the Tech Spec, and to reiterate prior recommendations that should be considered to ensure that Phase 2a and Phase 2b of CAT provide the framework to deliver a high quality and cost-efficient CAT reporting infrastructure on which to evolve the Consolidated Audit Trail.

As a supplement to the comments and recommendations contained in the attached review summaries, FIF is providing additional comments within the body of this letter, focusing on substantial “roadblocks” that Industry Members view as major challenges that may potentially jeopardize the successful implementation of the CAT and thus, should be fully considered and addressed prior to the finalization of the Tech Specs. In order to successfully resolve any remaining major “roadblocks” prior to the final publication of the tech specs, *FIF requests that additional Industry Member Tech Spec Working Group meetings be scheduled to review more fully both the items raised in the summary tables as well as the major issues described below.*

¹ FIF (www.fif.com) was formed in 1996 to provide a centralized source of information on the implementation issues that impact the securities industry across the order lifecycle. Our participants include trading and back office service bureaus, broker-dealers, market data vendors and exchanges. Through topic-oriented working groups, FIF participants focus on critical issues and productive solutions to technology developments, regulatory initiatives, and other industry changes.

² DRAFT CAT Reporting Technical Specifications for Industry Members, DRAFT V0.6, dated September 5, 2018.

Executive Summary - Request for Additional Opportunity to Provide Feedback and the CAT Implementation Schedule

During FIF's review of V0.6 of the Industry Member Technical Specification, it became apparent that certain portions of the spec have not been fully developed in a manner that allows for the complete review by Industry Members. Specifically, FIF notes that sections 8, 9, and 10 of the specification do not contain lack the completeness expected in the final draft version of the tech spec. Additionally, section 7 (options scenarios and examples) lack complete and adequate use cases/examples that are required by Industry Members to support the implementation of CAT Reporting Requirements. Therefore, although FIF understands that October 1, 2018 is the final day in which the SROs/ThesysCAT can accept industry feedback on the technical specification, *FIF requests an opportunity for ThesysCAT to review and provide additional feedback once the spec is finalized on October 30th to allow for a final specification that reasonably allows for the full implementation of Phase 2a of CAT on November 15, 2018.*

Furthermore, spec review process and dialogue with SROs/ThesysCAT has raised substantial CAT implementation challenges and roadblocks that may result in a delay in the implementation of CAT (*i.e.* rep order linkage flags, CAT error reconciliation, order fulfillment scenarios, zero-based file location index requirement). While Industry Members are fully committed to meeting all requirements of Rule 613 on or before the go-live dates of each respective phase of CAT (Phase 2a – Phase 2d), FIF notes that during the implementation phase(s) of CAT, substantial challenges may arise that will require schedule relief. Of important note, the Consolidated Audit Trail mandates the reporting of complex financial products (*i.e.* enhanced equities, complex/multi-legged options, rep order linkages, etc...) that have not been previously reported to any regulatory body. While FIF views the reporting of these financial products as necessary to comply with Rule 613 and the creation of a transparent cross-market surveillance tool, it is important to note that the development of the necessary infrastructures required to report new CAT reportable events (on an aggressive timeframe) may result in significant challenges that could put the anticipated CAT implementation timelines at risk. Therefore, FIF urges the SEC, the SROs, and ThesysCAT to maintain continued dialogue with the industry and to allow, if necessary, schedule relief during the CAT implementation phase(s) to allow industry members to reasonably meet Rule 613 requirements and expectations.

Assessment of Industry Member Feedback

The FIF CAT Tech Spec Review Subgroup completed an extensive review of V0.6 of the Tech Spec, including 9 review sessions, with an average of 95 participants per call representing an average of 33 member firms. Additionally, FIF Staff engaged in a series of separate discussions with industry stakeholders to better assess the viability of V0.6 of the tech spec during the subsequent implementation of the CAT. The feedback received as part of FIF Tech Spec review sessions have been incorporated into a summary table attached to this letter. Each item raised within the summary table has been prioritized based upon "high," "medium, and "low" priority items. Although FIF raised 153 items that should be addressed prior to the publication of the final

specification, approximately 75% of the items constitute minor changes that do not require significant work.

While the attached summaries provide detailed feedback on various implementation challenges that *must be addressed prior to the finalization* of the Phase 2a and Phase 2b Industry Member Technical Specifications, the following items are viewed by FIF members as potential “blockers” to the successful initial implementation of the CAT and thus, FIF encourages the regulators and ThesysCAT to schedule additional Industry Member Tech Spec Working Group Meetings prior to the publication of the final Tech Spec to more fully consider the following high priority items that will potentially result in substantial challenges during the implementation period of the CAT:

Feedback Files

On September 27, 2018, the ThesysCAT presented to Industry Members material related to the CAT file submission and feedback cycle. As part of this presentation, ThesysCAT indicated that feedback files will be provided to CAT Reporters only in JSON format that directs CAT Reporters a location in a file that indicates on which reported record an error occurred, whether or not the files were originally submitted in CSV or JSON. *This requirement creates two main concerns: (1) that reporters must support JSON for exception processing, even if they only implemented support for CSV submissions due to technology preferences or capabilities, and (2) that errors are referenced to a zero-based file location index, rather than an explicit record identified (e.g. like the ROE ID in OATS).* Both these items create unnecessary complexities and inefficiencies that do not facilitate error correction and resubmission process on a timely basis. Requiring access to the original submission files and finding the reported events within large encrypted files will likely prove extremely cumbersome to most CAT reporters. FIF views these issues as serious deficiencies that will require significant incremental effort by CAT Reporters during the initial CAT implementation period to operationally facilitate corrections and resubmissions within the T+3 error correction cycle timeframe. FIF requests that at minimum, if ThesysCAT cannot provide feedback files in the format used by the CAT reporter (CSV or JSON), then ThesysCAT should provide tools that can convert the JSON feedback files into CSV. FIF requests that a meeting with ThesysCAT and the SROs be scheduled as soon as possible to further cover the challenges of these requirements (*i.e.* at minimum, rejections should be presented in a similar manner to what OATS does today). *Furthermore, FIF urges the SROs/ThesysCAT to consider postponing publication of the October 5th supplemental tech spec to more fully engage with the Industry regarding the significant challenges outlined above.*

Error Correction Expectations and Tools

On August 14, 2018 and September 6, 2018, FIF participated in deep dive discussions with the SROs and ThesysCAT on the topics of Error Correction and the CAT Web Interface (and associated tools). The materials presented as part of these deep dive discussions emphasized the need for ThesysCAT to provide tools that will allow CAT Reporters to adequately identify and reconcile errors. Pursuant to SEC Rule 613, CAT Reporters are required to complete the error correction cycle on T+3, which represents a significant constraint on the current OATS error correction cycle (T+5). Therefore, the availability of tools developed by ThesysCAT contained within the CAT Web Interface is required to allow firms a reasonable opportunity to comply with the T+3 error correction cycle. Additionally,

FIF urges ThesysCAT to make all provided tools available in three modes, SFTP, Web API or Web User Interface to allow industry members the required flexibility to build systems to adequately meet the aggressive CAT T+3 error correction and file submission timeframe.

FIF believes that the error correction cycle should begin when ThesysCAT provides the feedback file to the CAT Reporter, not when the ThesysCAT receives the submitted CAT reports. Due to the novelty of the CAT reporting requirements, it may be challenging for CAT reporters to identify, reconcile, and resubmit errors within the 3-day time window. Pursuant to prior guidance, ThesysCAT has indicated that they will submit a completed feedback files by Noon on T+1, which provides Industry Members with two and a half days to make error corrections and resubmit the CAT file. While industry members believe that this timeframe should be acceptable provided that adequate/sufficient tools are provided, FIF emphasizes that if the CAT Processor does not provide feedback by Noon on T+1, Industry Member require two and a half days starting from the time they provide that feedback in order to adequately meet the error correction cycle.

Additionally, to adequately comply with CAT error correction requirements, FIF strongly emphasizes the need for ThesysCAT to provide sufficient tools that firms can utilize to identify/correct errors and resubmit CAT files to the central repository for reprocessing. Tools that should be considered include:

- Individual repair screen: If the number of rejects are small, present one record at a time on the web page with the incorrect value(s) highlighted with reject reasons. This allow user to correct the values and submit, and present the next reject;
- Bulk repair screen: Filter rejects by any combination of the following: business date, reporterID, record type, Customer IMID, FDID, symbol, optionID, and eventTimestamp range;
- A reliable Auto Repair tool should be supported;
- If Industry Members are required to resubmit records in the event of rejected events tools that facilitate the resubmission process would be especially beneficial;
- Pre-submission validation tool (at minimum, syntax and semantics checking should be provided) to minimize the number of corrections that are required. In the absence of these tools, each CAT Reporter will likely need to build their own pre-submission validation process, with varying degrees of accuracy.

The above tools are a subset of the tools required by CAT Reporters to adequately meet the CAT NMS Plan T+3 error correction cycle. *FIF notes that if ThesysCAT does **not produce sufficient repair tools, then approximately 300 Industry Member firms will need to produce identical tools using 300 times the resources, which would be required on top of the CAT build.*** FIF encourages ThesysCAT to review and implement the recommendations regarding tools required to facilitate a reasonable response to the T+3 error correction cycle.

Testing

The availability of production-quality test environment(s) is necessary both during the initial roll-out of the CAT implementation process and following CAT Go-Live. Industry Members have referenced the need for ThesysCAT to provide industry members a testing environment prior to the November

15, 2019 Go-Live date that supplies CAT Reporters with as close to real-time feedback on syntax checking/validation and intrafirm linkages as possible. Due to the novelty of CAT Reporting requirements, a robust and production quality test environment is especially important given that CAT Reporters will be required to perform all error corrections on T+3. FIF further requests that a description of the CAT Test Environment be made available to Industry Members in order for the industry to adequately assess the proposed testing infrastructure and to provide further recommendations on any outstanding issues with the CAT Testing Environment. Additionally, FIF requests that ThesysCAT indicate whether the Test environment will have the same capacity as the production environment. If it doesn't, specific guidance should be provided that indicates what maximum record limits will be imposed, and the process for scheduling of larger submissions, as is done with the FINRA CERT system today.

Furthermore, FIF members have raised the need for ThesysCAT to provide guidance regarding the availability of a test environment that allows for coordinated testing between industry members to ensure that all inter-firm linkages and matching criteria are accurately reported. Previous audit trails (*i.e.* OATS) have not required industry members to report direct matches between broker-dealer counterparties and therefore relied on exchange data. CAT introduces additional requirements that requires coordinated testing between industry members to ensure that CAT reportable events are validated prior to submission to the central repository. FIF members have also raised the need for ThesysCAT to provide greater detail on the scheduling and registration process prior to testing between industry members to ensure that a dedicated inter-firm test environment is provided that will allow CAT Reporters to perform complete data validation prior to submission.

Use Cases, Examples, and Guidance

The CAT implementation plan represents a significant augmentation of previous regulatory reporting regimes, requiring the reporting of previously unreported trading activity (*i.e.* options, representative order linkages, etc...). *Therefore, it is imperative that the CAT Technical Specification includes fulsome use cases and examples that apply to all CAT reporting requirements.* Currently, the equities examples contained in section 6 provide examples explaining the applicability of each scenario; however, the options examples do not contain diagrams specifying the reporting obligations for each enumerated reporting scenario, nor do they cover the breadth of options reporting requirements (the examples reflecting options reporting requirements are insufficient and complex). Furthermore, each scenario should be broken down into individual, granular steps that CAT Reporters can use as a guideline during the implementation and reporting process(es). Therefore, FIF requests that ThesysCAT provide several additional use cases throughout the Tech Spec. FIF will submit additional use cases that should be considered for incorporation into the final version of the Tech Spec. As a broad recommendation, at minimum, the examples covered during the "deep dive" and in-person discussions should be incorporated into the final version of the technical specifications.

Furthermore, due to the complexity of CAT reporting requirements, the SROs/ThesysCAT must ensure that sufficient interpretative guidance in the form of clear definitions (*i.e.* glossary) and reporting expectations are defined in the specification. Currently, there are several ambiguous definitions/reporting requirements that should be clarified prior to the finalization of the Tech Spec

(see attached review summaries). FIF believes that continued dialogue between the SROs, ThesysCAT, and Industry Members is required to ensure that the CAT reporting requirements are clear and implementable.

Industry Outreach and Supplemental Operations Guidance

FIF emphasizes that all expectations regarding CAT Reporting requirements be clearly and expeditiously communicated to the industry. While FIF understands that the CAT Reporting process is currently in the development stage, significant changes to perceived CAT Reporting requirements have been made over the past couple of months (*i.e.* 0-index format, feedback files submitted in JSON, etc..). Many of the current CAT reporting requirements as specified in the Tech Specs and associated Industry Member Tech Spec Working Group meetings represent a significant departure, in many cases, from the industry's previous understanding of CAT Reporting obligations and therefore, new or amended CAT Reporting expectations must be clearly communicated to the industry as clearly and expeditiously as possible (*i.e.* through additional Industry Outreach calls and external communication) so that all CAT Reporters/Vendors may adequately assess and build CAT Reporting infrastructures that comply with SEC Rule 613 and CAT NMS Plan reporting requirements.

Finally, FIF requests that in addition to the guidelines and use cases supplied within the Tech Specs, ThesysCAT also provide an "operations manual" that contains additional detailed information related directly to the operational requirements of CAT Reporters. For example, CAT Reporters require more detail on how CAT Reporters are expected to interact with the CAT Web Portal (*i.e.* the registration process for OSOs IDs, etc...). Today, FINRA provides a robust operations manual which OATS Reporters rely on to adequately and accurately report OATS reportable events. Without more detailed operations documentation in line with what is provided by OATS, CAT Reporters will struggle to meet complex CAT Reporting requirements and meet the compliance standards of Rule 613.

Incomplete Specification Features

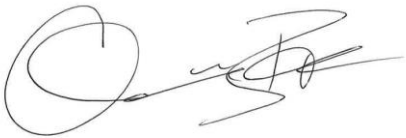
Industry Members have raised the need for much more detail within the Submission Process, Feedback and Corrections, and Testing sections of the technical specification (Sections 8-10). Currently, the specification lacks the completeness required of CAT Reporters to fully assess, respond to, and implement processes internally and externally to adequately build out a viable CAT Reporting infrastructure. Additionally, several the requirements specified in sections 8, 9, and 10 of the specification do not appear to be fully developed, which will not only require CAT Reporters to interpret various requirements, but many require substantial and costly system builds to fully conform with perceived CAT Reporting requirements. *Therefore, FIF requests additional meetings with the SROs, ThesysCAT, and Industry Members to support the development of additional material that will allow for the necessary clarity for CAT Reporters to reasonably comply with SEC Rule 613* as well as an additional opportunity for the industry to review the and provide feedback (of sections 8, 9, and 10) following the final publication of the October 30th Industry Member Technical Specification.

Summary

FIF has consistently supported and remains firmly committed to the Consolidated Audit Trail. The comments derived from FIF's in-depth reviews of V0.6 of the Industry Member Technical Specification are intended to support the SROs/ThesysCAT's undertaking of developing a complete specification that fully comports with SEC Rule 613 requirements. We believe that CAT provides the foundation for a more modern, comprehensive and consistent set of regulatory reporting requirements that should enable an improved regulatory and surveillance infrastructure as well as a well-structured and simplified reporting interface for the industry. We continue to offer our assistance in working with ThesysCAT and the SROs to deliver an implementable CAT infrastructure.

The items raised both in the tech spec review summaries and this letter address significant issues that must be addressed prior to the finalization of the October 30th CAT Industry Member Reporting Specification. Due to the constrained timelines specified in the plan, it is vital that all significant "roadblocks" to the CAT implementation process be resolved prior to the finalization of the Tech Spec. *As such, FIF is requesting a meeting with ThesysCAT/the SROs as soon as possible to more fully cover the topics contained this letter and attached summary table.*

Sincerely,



Christopher W. Bok, Esq.
Financial Information Forum

CC:

David Shillman, Associate Director, Division of Trading and Markets, SEC
David Hsu, Associate Director, Division of Trading and Markets, SEC
Mark Donohue, Senior Policy Advisor, Division of Trading and Markets, SEC

Andre Frank, President, ThesysCAT
Todd Golub, Head of Product Management, ThesysCAT
Cindy Retterer, Vice President, Nasdaq
Shelly Bohlin, Vice President, FINRA
Soniya Shrivastav, Managing Director, NYSE
Tom Busch, Director, Cboe Global Markets
Manisha Kimmel, Chief Regulatory Officer, Thomson Reuters, on behalf of the CAT NMS Plan Advisory Committee
Michael Simon, Deloitte, on behalf of the CAT NMS Plan Operating Committee

