

SUPPORTING STATEMENT
for the Paperwork Reduction Act Information Collection Submission for
the Consolidated Audit Trail NMS Plan (NMS Plan Required to be Filed under
Commission Rule 613)
(OMB Control No. 3235-0671)

A. Justification

This submission is being made pursuant to the Paperwork Reduction Act of 1995, 44 U.S.C. Section 3501 et. seq. The collection of information is in connection with a National Market System (NMS) Plan required to be filed with the Commission under Rule 613.

1. Necessity of Information Collection

The Commission believes that the regulatory data infrastructure on which FINRA and the national securities exchanges (the “Participants”) and the Commission currently must rely is generally outdated and inadequate to effectively oversee a complex, dispersed and highly automated national market system. In performing their oversight responsibilities, regulators today must attempt to cobble together disparate data from a variety of existing information systems lacking in completeness, accuracy, accessibility, and/or timeliness—a model that neither supports the efficient aggregation of data from multiple trading venues, nor yields the type of complete and accurate market activity data needed for robust market oversight.

Currently, FINRA and some of the exchanges maintain their own separate audit trail systems for certain segments of this trading activity, which vary in scope, required data elements and format. In performing their market oversight responsibilities, Participant and Commission staffs today must rely heavily on data from these various Participant audit trails. However, there are shortcomings in the completeness, accuracy, accessibility, and timeliness of these existing audit trail systems. Some of these shortcomings are a result of the disparate natures of the systems, which make it impractical, for example, to follow orders through their entire lifecycle as they may be routed, aggregated, re-routed, and disaggregated across multiple markets. The lack of key information in the audit trails that would be useful for regulatory oversight, such as the identity of the customers who originate orders, or even the fact that two sets of orders may have been originated by the same customer, is another shortcoming.

Though Participant and Commission staffs also have access to sources of market activity data other than Participant audit trails, these systems each have their own drawbacks. For example, data obtained from the electronic blue sheet system and equity cleared reports comprise only trade executions, and not orders or quotes. In addition, like data from existing audit trails, data from these sources lacks key elements important to regulators, such as the identity of the customer in the case of equity cleared reports. Furthermore, recent experience with implementing incremental improvements to the electronic blue sheet system has illustrated some of the overall limitations of the current

technologies and mechanisms used by the industry to collect, record, and make available market activity data for regulatory purposes.¹

Recognizing these shortcomings, on July 11, 2012, the Commission adopted Rule 613 of Regulation NMS under the Act.² Rule 613 required the Participants to submit an NMS plan to create, implement, and maintain the consolidated audit trail (“CAT”) that would capture customer and order event information for orders in NMS securities, across all markets, from the time of order inception through routing, cancellation, modification, or execution in a single, consolidated data source.³

On February 27, 2015, the Participants submitted the CAT NMS Plan.⁴ On April 27, 2016, the Commission published a notice soliciting comments from the public (“CAT NMS Plan Notice”).⁵ On November 15, 2016, the Commission approved the CAT NMS Plan (“CAT NMS Plan Order”), including the information collections proposed in the CAT NMS Plan Notice and certain additional information collections that were the subject of a supplemental information collections submission.⁶ The CAT NMS Plan

¹ See Securities Exchange Act Release No. 64976 (July 27, 2011), 76 FR 46960 (August 3, 2011) (“Large Trader Release”).

² See Securities Exchange Act Release No. 67457 (July 18, 2012), 77 FR 45722 (August 1, 2012) (“Adopting Release”); see also Securities Exchange Act Release No. 62174 (May 26, 2010), 75 FR 32556 (June 8, 2010) (“Proposing Release”).

³ See 17 CFR 242.613(a)(1), (c)(1), (c)(7).

⁴ See Letter from Participants to Brent J. Fields, Secretary, Commission, dated February 27, 2015. The Participants filed the CAT NMS Plan on September 30, 2014. See Letter from the Participants, to Brent J. Fields, Secretary, Commission, dated September 30, 2014. The CAT NMS Plan filed on February 27, 2015, was an amendment to and replacement of the Initial CAT NMS Plan (the “Amended and Restated CAT NMS Plan”). On December 24, 2015, the Participants submitted an Amendment to the Amended and Restated CAT NMS Plan. See Letter from Participants to Brent J. Fields, Secretary, Commission, dated December 23, 2015 (the “Amendment”). On February 9, 2016, the Participants filed with the Commission an identical, but unmarked, version of the Amended and Restated CAT NMS Plan, dated February 27, 2015, as modified by the Amendment. Unless the context otherwise requires, the “CAT NMS Plan” shall refer to the Amended and Restated CAT NMS Plan, as modified by the Amendment.

⁵ See Securities Exchange Act Release No. 77724 (April 27, 2016), 81 FR 30613 (May 17, 2016). The burdens associated with the CAT NMS Plan Notice were submitted under OMB number 3235-0671 which relates to the NMS Plan required to be filed under Rule 613.

⁶ See Securities Exchange Act Release No. 79318 (November 15, 2016), 81 FR 84696 (November 23, 2016). The supplemental information collections burdens associated with the CAT NMS Plan Order were submitted under OMB number

Order information collections that were first noticed in the CAT NMS Plan Notice were approved by OMB on March 9, 2017.⁷ The supplemental submission information collections were approved by OMB on July 10, 2017.

This instant information collections submission incorporates both the information collections that were first noticed in the CAT NMS Plan Notice and approved by OMB on March 9, 2017 with the supplemental submission information collections that were approved by OMB on July 10, 2017.

Subsequent to the two prior information collections relating to the CAT NMS Plan Notice and CAT NMS Plan Order, the Commission believes three information collection requirements have been completed. Specifically, Rule 613(i) requires the CAT NMS Plan to require the Participants to jointly provide to the Commission, within six months after the CAT NMS Plan is effective, a document outlining how the Participants could incorporate into the consolidated audit trail information regarding certain products that are not NMS securities. Section 6.6(a)(ii) of the CAT NMS Plan requires a written assessment of clock synchronization standards, including consideration of industry standards based on the type of CAT Reporter, Industry Member and type of system. Both of these information collections requirements have been met by Participants, and the relevant documents are publicly available on the CAT NMS Plan website.⁸ In addition, the Participants have submitted a coordinated surveillance report as required by Section 6.6(a)(iii) of the CAT NMS Plan, which requires the Participants to provide the Commission with a written report that discusses the Participants' assessment of implementing coordinated surveillance, whether through 17d-2 agreements, regulatory

3235-0671 which relates to the NMS Plan required to be filed under Rule 613. The Commission further acknowledged that the CAT NMS Plan filed by the Participants contains provisions in addition to those required by the Commission in Rule 613. These additional requirements include the inclusion of OTC Equity Securities, the availability of historical data for not less than six years in a manner that is directly available and searchable without manual intervention from the Plan Processor, a complete symbology database to be maintained by the Plan Processor, including the historical symbology, as well as issue symbol information and data using the listing exchange symbology format. See CAT NMS Plan, supra note 4, at Sections 1.1 and 6.5(b)(i); Appendix C, Section A.1(a); Appendix D, Section 2.

⁷ The CAT NMS Plan published for comment reflects exemptive relief granted by the Commission that provided the flexibility for the Participants to propose, in the CAT NMS Plan, alternative approaches to certain requirements of Rule 613. See Securities Exchange Act Release No. 77265 (March 1, 2016), 81 FR 11856 (March 7, 2016) (“Exemption Order”).

⁸ See “One-Time Written Assessments,” Consolidated Audit Trail, LLC at: <https://www.catnmsplan.com/one-time-written-assessments/index.html>.

services agreements, or some other approach, within 12 months of effectiveness of the Plan.

2. Purposes and Use of the Information Collection

The Commission believes that the CAT NMS Plan, once fully implemented, will improve the quality of the data available to regulators in four areas that affect the ultimate effectiveness of core regulatory efforts—completeness, accuracy, accessibility and timeliness.⁹ The improvements in these data qualities would substantially improve regulators’ ability to perform analysis and reconstruction of market events, and market analysis and research to inform policy decisions, as well as perform regulatory activities, in particular market surveillance, examinations, investigations, and other enforcement functions.

A. Central Repository

Rule 613 states that the CAT NMS Plan shall provide for the creation and maintenance of a Central Repository.¹⁰ The Central Repository is required to receive, consolidate and retain the data required to be submitted by the Participants and their broker-dealer members.¹¹ Participant and Commission staffs would have access to the data for regulatory purposes.¹²

B. Data Collection and Reporting

The Commission believes that the data collected and reported to the Central Repository pursuant to the requirements of the CAT NMS Plan (as required by Rule 613) would be used by regulators to monitor and surveil the securities markets and detect and investigate activity, whether on one market or across markets. The data collected and reported to the Central Repository would also be used by regulators for the evaluation of tips and complaints and for complex enforcement inquiries or investigations, as well as inspections and examinations. Further, the Commission believes that regulators would use the data collected and reported to the Central Repository to conduct timely and accurate analysis of market activity for reconstruction of broad-based market events in support of regulatory decisions.

⁹ See Adopting Release, supra note 2, at 45727 (discussing four “qualities” of trade and order data that impact the effectiveness of core Participant and Commission regulatory efforts: accuracy, completeness, accessibility, and timeliness).

¹⁰ See 17 CFR 242.613(e)(1).

¹¹ Id. The Commission notes that the CAT NMS Plan refers to a member of a national securities exchange or of a national securities association as an “Industry Member.” See CAT NMS Plan, supra note 4, at Section 1.1.

¹² See 17 CFR 242.613(e)(2).

C. Collection and Retention of National Best Bid and National Best Offer Information, Last Sale Data and Transaction Reports

The CAT NMS Plan must require the Central Repository to collect and retain National Best Bid and National Best Offer (“NBBO”) information, transaction reports, and Last Sale Reports in a format compatible with the order and event information collected pursuant to Rule 613(c)(7).¹³ Participant and Commission staffs could use this data to easily search across order, NBBO, and transaction databases. The Commission believes that having the NBBO information in a uniform electronic format compatible with order and event information would assist Participants in enforcing compliance with federal securities laws, rules, and regulations, as well as their own rules.¹⁴ The Commission also believes that a CAT NMS Plan requiring the Central Repository to collect and retain the transaction reports and Last Sale Reports in a format compatible with the order execution information would aid regulators in monitoring for certain market manipulations.¹⁵

D. Surveillance

The CAT NMS Plan (as required by Rule 613(f)) contains a requirement that the Participants develop and implement a surveillance system, or enhance existing surveillance systems, reasonably designed to make use of the consolidated information in

¹³ See 17 CFR 242.613(e)(7).

¹⁴ The Commission and Participants use the NBBO to, among other things, evaluate members for compliance with numerous regulatory requirements, such as the duty of best execution or Rule 611 of Regulation NMS. See 17 CFR 242.611; see also, e.g., ISE Rule Options 5, Section 2 and Phlx Rule 1084.

¹⁵ Rules 613(e)(7)(ii) and (iii) require that transaction reports reported pursuant to an effective transaction reporting plan and Last Sale Reports reported pursuant to the OPRA Plan be reported to the Central Repository. This requirement should allow regulators to evaluate certain trading activity. For example, trading patterns of reported and unreported trades may cause Participant or Commission staffs to make further inquiries into the nature of the trading to ensure that the public was receiving accurate and timely information regarding executions and that market participants were continuing to comply with trade reporting obligations under Participant rules. Similarly, patterns in the transactions that are reported and unreported to the consolidated tape could be indicia of market abuse, including failure to obtain best execution for customer orders or possible market manipulation. The Commission and the Participants would be able to review information on trades not reported to the tape to determine whether they should have been reported, whether Section 31 fees should have been paid, and/or whether the trades are part of a manipulative scheme.

the consolidated audit trail.¹⁶ This requirement is intended to position regulators to make full use of the consolidated audit trail data in order to carry out their regulatory obligations. In addition, because trading and potentially manipulative activities could take place across multiple markets, and the consolidated audit trail data would trace the entire lifecycle of an order from origination to execution or cancellation, new or enhanced surveillance systems may also enable regulators to investigate potentially illegal activity that spans multiple markets more efficiently.

E. Written Assessment of Operation of the Consolidated Audit Trail

Rule 613(b)(6) requires the CAT NMS Plan to require the Participants to provide the Commission a written assessment of the CAT's operation at least every two years, once the CAT NMS Plan is effective.¹⁷ The CAT NMS Plan states that the Chief Compliance Officer would oversee the assessment.¹⁸ These assessments would aid Participant and Commission staffs in understanding and evaluating any deficiencies in the operation of the consolidated audit trail and to propose potential improvements to the CAT NMS Plan. The Commission believes the written assessments would allow Participants and Commission staffs to periodically assess whether such potential improvements would enhance market oversight. Moreover, the Commission believes these assessments would help inform the Commission regarding the likely feasibility, costs, and impact of, and the Participants' approach to, the consolidated audit trail evolving over time. The Commission believes that the assessments will focus the Plan Processor and Participants on critical technological and other developments, and should help ensure that CAT technology is up-to-date, resilient and secure, and provides accurate CAT Data.

F. Independent Audit of Expenses Incurred Prior to Effective Date

The Commission understands that the Participants intend to recover, through CAT fees, the amounts spent on the development of the CAT to date. Section 6.6(a)(i) of the CAT NMS Plan requires the Participants to provide to the Commission, and make public, an independent audit of fees, costs and expenses incurred by the Participants on behalf of the Company, prior to the Effective Date, in connection with the creation and implementation of the CAT, at least one month prior to submitting any rule filing to establish initial fees to the Commission. To facilitate public comment and Commission

¹⁶ See CAT NMS Plan, supra note 4, at Section 6.10(a). See also 17 CFR 242.613(f).

¹⁷ 17 CFR 242.613(b)(6). As discussed in Section 12.A.e., infra, Section 6.6 of the Plan changed the frequency of the assessment contemplated by Rule 613(b)(6) from biannual to annual.

¹⁸ See CAT NMS Plan, supra note 4, at Section 6.6(a)(ii). See also id. at Section 6.6(a)(i).

review of such fee filings to ensure the fees imposed on Industry Members are reasonable, equitable and not unfairly discriminatory, the Commission believes it is appropriate for the Participants to obtain an audit of the fees, costs and expenses incurred by the Participants on behalf of the Company prior to the Effective Date.

G. Assessment of Industry Member Bulk Access to Reported Data

Section 6.6(a)(iv) of the CAT NMS Plan requires the Participants to provide a written report discussing the feasibility, benefits and risks of allowing an Industry Member to bulk download the Raw Data it submitted to the Central Repository, within 24 months of effectiveness of the Plan. Commenters expressed a desire for bulk access to their own data for surveillance and internal compliance purposes, as well as to facilitate the error correction process. While the Participants did not permit such access in the Plan, citing security and cost concerns, they did represent that they would consider allowing bulk access to the audit trail data reported by Industry Members once CAT is operational. The Commission believes it is important to consider the potential efficiencies of allowing Industry Members bulk access to their own CAT data, so long as such access does not impact the security of the CAT Data, and accordingly added this requirement.

H. Assessment of Errors in Customer Information Fields

Section 6.6(a)(v) of the CAT NMS Plan requires the Participants to submit a written assessment of the nature and extent of errors in the Customer information submitted to the Central Repository and whether the correction of certain data fields should be prioritized, within 36 months of effectiveness of the Plan. The Commission believes that requiring such an assessment, which was intended to coincide with the date all Industry Members are reporting to the CAT, could help ensure that the accuracy of CAT Data is achieved in the most prompt and efficient manner.

I. Report on Impact of Tiered Fees on Market Liquidity

Section 6.6(a)(vi) of the CAT NMS Plan requires the Participants to submit a written report on the impact of tiered-fees on market liquidity, including an analysis of the impact of the tiered-fee structure on Industry Members provision of liquidity, within 36 months of effectiveness of the Plan. To help determine whether the Plan's funding model actually achieves the Participants' stated objective, the Commission believes it is appropriate to require them to prepare such an assessment of the impact of tiered fees once the CAT becomes fully operational.

J. Assessment of Material Systems Change on Error Rate

The CAT NMS Plan requires the Participants to provide the Commission a written assessment of the projected impact of any Material Systems Change on the Maximum Error Rate, prior to the implementation of any Material Systems Change. The

Commission believes that Material Systems Changes either could result in new challenges for CAT Reporters or simplify the means for reporting data. In either case, the appropriateness of the Maximum Error Rate could be impacted, and thus warrant a change. Accordingly, the Commission believes it appropriate to require the Participants to provide the Commission an assessment of the projected impact on the Maximum Error Rate, including any recommended changes thereto, prior to the implementation of any Material Systems Change.

K. Financial Statements

Section 9.2 of the CAT NMS Plan requires that the financials of the Consolidated Audit Trail, LLC (“CAT LLC”) be (i) in compliance with GAAP, (ii) be audited by an independent public accounting firm, and (iii) be made publicly available.¹⁹ The Commission believes that this requirement will promote greater accuracy and greater transparency with respect to the Company’s financial accounting.

L. Background Checks

Section 6.1(g) of the CAT NMS Plan requires that each Participant conduct background checks for its employees and contractors that will use the CAT System. The Commission believes that this is appropriate in order to ensure that only authorized and qualified persons are using the CAT System.

3. Consideration Given to Information Technology

Several of the information collections associated with the CAT NMS Plan involve the use of electronic information collection techniques. Rule 613 states that the CAT NMS Plan shall provide for the creation and maintenance of the Central Repository,²⁰ which is required to receive, consolidate and retain the data required to be submitted electronically by the Participants and their members.²¹ The CAT NMS Plan requires CAT Reporters to report data to the Central Repository either in a uniform electronic

¹⁹ The Participants conduct the activities of the CAT through the CAT LLC, a jointly owned limited liability company formed under Delaware state law. The CAT LLC is charged with creating, implementing and maintaining the CAT. The Participants previously formed a Delaware Limited Liability company named CAT NMS, LLC for the purpose of conducting activities related to the consolidated audit trail, but formed Consolidated Audit Trail, LLC to replace and serve as the CAT NMS Plan on August 29, 2019. See Securities Exchange Act Release No. 87149 (September 27, 2019), 84 FR 52905 (October 3, 2019). The LLC through which Participants conduct the activities of CAT is referred to as “CAT LLC” in this Supporting Statement.

²⁰ See 17 CFR 242.613(e)(1).

²¹ Id.

format, or in a manner that would allow the Central Repository to convert the data to a uniform electronic format.²² The CAT NMS Plan also requires the Central Repository to collect and retain on a current and continuing basis, in a format compatible with the Participant and member data, all data including NBBO information, transaction reports, and Last Sale Reports.²³ Additionally, the CAT NMS Plan (as required by Rule 613(f)) also requires that the Participants develop and implement a surveillance system, or enhance existing surveillance systems, reasonably designed to make use of the consolidated information in the consolidated audit trail.²⁴

The Commission believes it is important to require the electronic submission of the information required by Rule 613 to ensure that the CAT can capture in a timely, accurate and accessible manner all of the information necessary to efficiently and effectively monitor cross-market trading activity in today's highly automated and dispersed markets. The Commission believes that, as part of operating their businesses, the Participants are already accustomed to handling large volumes of data and may already have in place electronic trading, routing and reporting systems. Most Participants maintain audit trails that contain the trade and order data that they obtain from their members and each equity and options exchange keeps an audit trail of orders and trades that occur on its market. To improve upon the status quo, the consolidated audit trail would need to impose electronic information collection and reporting requirements. The CAT NMS Plan states, "... each equities and options exchange is built on its own unique platform, utilizes unique entry protocols and requirements and thus creates uniquely formatted audit trails. The existence of multiple non-integrated audit trails has direct consequences on the accuracy and efficiency of regulatory oversight."²⁵ As trading venues have become more automated, and trading systems have become computerized, trading volumes have increased significantly and trading has become more dispersed across more trading centers and therefore more difficult to monitor and trace. Audit trail data for securities that are traded on multiple venues is fragmented across multiple data sources, with each regulator generally having direct access only to data generated on the trading venues it regulates. The Commission believes that the CAT NMS Plan will bring audit trail data related to trading on all venues into the Central Repository where it could be accessed by all regulators.

The Commission believes that the collection of information requirement "Background Checks" would involve the use of electronic submission and collection techniques. The Commission believes that these would be background checks using fingerprints that would be submitted either in hard copy or electronically to the Attorney General of the United States for identification and processing.

²² See CAT NMS Plan, supra note 4, at Appendix C, Section A.1(b).

²³ See id. at Section 6.5(a)(ii). See also 17 CFR 242.613(e)(7), (e)(8).

²⁴ See CAT NMS Plan, supra note 4, at Section 6.10(a). See also 17 CFR 242.613(f).

²⁵ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(ii)(A).

Commission staff does not believe that improvements in information technology would have any impact on the burdens associated with the CAT NMS Plan (in fact, improvements in information technology may reduce any burdens associated with the Plan), nor that any obstacles exist to reducing such burdens.

4. Duplication

The CAT NMS Plan requires the collection and reporting of certain information that national securities exchanges and national securities associations, as well as their members, already collect and report pursuant to both Federal Rules and the rules of those exchanges and associations. However, as required by Rule 613, the CAT NMS Plan requires the Participants to collect additional and more detailed information, and to report the information to the Central Repository in a uniform electronic format, or in a manner that would allow the Central Repository to convert the data to a uniform electronic format for consolidation and storage.

In an effort to ensure identification and avoidance of unnecessary duplicative rules and requirements, Rule 613 requires the CAT NMS Plan to discuss a plan to eliminate existing rules and systems (or components thereof) that will be rendered duplicative by the consolidated audit trail, including identification of such rules and systems (or components thereof).²⁶ To the extent that any existing rules or systems related to monitoring quotes, orders, and executions provide information that is not rendered duplicative by the consolidated audit trail, Rule 613 requires an analysis of: (A) whether the collection of such information remains appropriate;²⁷ (B) if still appropriate, whether such information should continue to be separately collected or should instead be incorporated into the consolidated audit trail;²⁸ and (C) if no longer appropriate, how the collection of such information could be efficiently terminated; the steps the plan sponsors propose to take to seek Commission approval for the elimination of such rules and systems (or components thereof); and a timetable for such elimination, including a description of how the plan sponsors propose to phase in the consolidated audit trail and phase out such existing rules and systems (or components thereof).²⁹

In accordance with Rule 613, the CAT NMS Plan provides information regarding when the Participants intend to initiate and conclude identification of: duplicative rules and systems, partially duplicative rules and systems, non-duplicative rules or systems related to monitoring quotes, orders and executions, and the timing of Participant rule and system changes due to any elimination or modification of Commission rules as a result of the implementation of CAT. Further, the Plan discusses when the Participants will file

²⁶ See Rule 613(a)(1)(ix).

²⁷ See Rule 613(a)(1)(ix)(A).

²⁸ See Rule 613(a)(1)(ix)(B).

²⁹ See Rule 613(a)(1)(ix)(C).

proposed rule changes to implement the rule modifications or deletions and elimination of the relevant rules and systems.³⁰

With the exception of the “Background Checks” information collection, the proposed collection of information requirements pertain solely to the CAT LLC or the operation of the CAT System and, is not required elsewhere. We are not aware of any collection of information requirements that conflict with or substantially duplicate the proposed collection of information requirements.

With respect to the “Background Checks” collection of information, Section 6.1(g) of the CAT NMS Plan requires each Participant to conduct background checks of its employees and contractors that will use the CAT System. While Section 6.1(g) may result in a duplication of requirement because other rules currently require Participants to conduct fingerprint-based background checks,³¹ the Commission believes that there will be no duplication of effort because if an employee or contractor of a Participant who will be a CAT user is already subject to a Participant’s existing background check requirements, we anticipate that those requirements would satisfy the proposed background checks requirements of the CAT NMS Plan. Further, if such Participant believes that its employees and contractors should be subject to a more stringent or different background check requirement to be a CAT user than currently required by the Participant, then there will be no duplication of effort because the proposed background check requirements would be more rigorous or different and thus differ from the Participant’s existing background check requirements.

5. Effect on Small Entities

The CAT NMS Plan would have an effect on small entities. The CAT NMS Plan requires Participants to enforce compliance by their members with the provisions of Rule 613 and the Plan through self-regulatory organization (“SRO”) rules that require their members to comply with the requirements of Rule 613 and the CAT NMS Plan.³² These rules would apply to all broker-dealers—including those that are small entities. Commission rules generally define a broker-dealer as a small entity for purposes of the Exchange Act and the Regulatory Flexibility Act if the broker-dealer had a total capital of less than \$500,000 on the date in the prior fiscal year as of which its audited financial

³⁰ See CAT NMS Plan, *supra* note 4, at Appendix C, Section C.9.

³¹ See *e.g.*, 17 CFR 240.17f-2(a) (OMB Control Number 3235-0029); 17 CFR 240.17f-2(c) (OMB Control Number 3235-0034). Additionally, most Participants currently have rules that permit them to conduct fingerprint-based background checks of contractors. See *e.g.*, BOX Rule 10080; CBOE Rule 7.10; ISE Rule Options 6E, Section 8; Nasdaq Rule General 2, Section 13; NYSE Rule 28; and IEX Rule 1.180.

³² The CAT NMS Plan states that the Participants will endeavor to promulgate consistent rules requiring compliance by their members with the provisions of Rule 613 and the Plan. See *id.* at Section 3.11. See also 17 CFR 242.613(g)(2).

statements were prepared, and it is not affiliated with any person (other than a natural person that is not a small entity).

Thus, small broker-dealers would be responsible for complying with the CAT NMS Plan's requirements for regularly reporting to the Central Repository the required order and transaction data, and would need to either modify their existing order handling and trading systems to comply with the CAT NMS Plan, or rely on outside vendors to provide a functionality that would provide information to the Central Repository.

The Commission notes that some small firms currently may not have systems in place to report audit trail data as they may be exempted from reporting data to FINRA's Order Audit Trail System ("OATS") because they do not engage in activities that would incur OATS reporting obligations, or they may be excluded or exempted under FINRA's OATS reporting rules. Small firms currently excluded from OATS reporting due to their size would have CAT reporting responsibilities under the Plan because the Plan makes no provision to exempt or exclude them, as FINRA does with OATS reporting.³³

The Commission estimates, based on FOCUS filings with the Commission, that as of the third quarter of 2019, there were approximately 925 Commission-registered broker-dealers that would be considered small entities for purposes of the statute. Each of these brokers-dealers, assuming that they would be subject to CAT reporting obligations, would be required to comply with the CAT NMS Plan required under Rule 613.³⁴

To minimize the burden of complying with the collecting and reporting requirements in the CAT NMS Plan, the CAT NMS Plan provides that small broker-dealers must begin reporting data to the Central Repository within three years of approval of the CAT NMS Plan, while large broker-dealers must begin reporting such data within

³³ See FINRA Rule 7470 (Exemption to the Order Recording and Data Transmission Requirements). The Rule provides that, for good cause shown, FINRA may exempt a member from its recording and reporting requirements if: (1) the member and current control affiliates and associated persons of the member have not been subject within the last five years to any final disciplinary action, and within the last ten years to any disciplinary action involving fraud; (2) the member has annual revenues of less than \$2 million; (3) the member does not conduct any market making activities in NMS stock or OTC securities; (4) the member does not execute principal transactions with its customers; and (5) the member does not conduct clearing or carrying activities for other firms. This authority sunsets on July 11, 2020

³⁴ The Commission understands that some registered broker-dealers either trade in asset classes not currently included in the definition of Eligible Security or do not trade at all (e.g., broker-dealers for the purposes of underwriting, advising, private placements).

two years of approval.³⁵ Thus, small broker-dealers would be given additional time to ready themselves for compliance with the collection and reporting requirements in the CAT NMS Plan. The Commission notes that as of February 2020, neither large broker-dealers nor small broker-dealers have begun to report all required data to the Central Repository.

6. Consequences of Not Conducting Collections

If the Commission were to not require the collections (or were to require the collections on a less frequent basis), the Commission believes that this could impact its objective to create a comprehensive consolidated audit trail that allows regulators to efficiently and accurately track all activity throughout the U.S. markets in National Market System (NMS) securities. The Commission believes the collections would improve the completeness, accuracy, accessibility and timeliness of data available to regulators and therefore improve regulators' ability to perform regulatory activities, in particular market surveillance, examinations, investigations, and other enforcement functions, as well as analysis and reconstruction of market events, and market analysis and research to inform policy decisions. Regulators depend on data for many of these activities and the improvements in the data qualities would thus improve the efficiency and effectiveness of such regulatory activities.

If the Commission were to not require the collections (or were to require the collections on a less frequent basis), the Commission believes that this could impact the implementation of the CAT. The Commission believes that the CAT NMS Plan would improve the completeness, accuracy, accessibility and timeliness of the data available to regulators. To ensure that the Plan is implemented in accordance with these objectives, the Commission believes the audit, assessments and reports prepared by the Participants are necessary.

The Plan imposes certain information collections burdens that were not in the Plan as originally proposed by the Participants. First, the Plan requires that the Participants provide the Commission, and make public, at least one month prior to submitting any rule filing to establish initial fees for CAT Reporters, an independent audit of the fees, costs, and expenses incurred by the Participants on behalf of the Company prior to the Effective Date of the Plan. The Commission understands that the Participants intend to recover through CAT fees the amounts spent on the development of the CAT to date. Without this independent audit of expenses incurred prior to the Effective Date of the Plan, it will be difficult for the public and the Commission to accurately assess the propriety of the level of initial fees imposed in the fee filings filed by the Participants.

Second, the Plan requires the Participants to submit to the Commission a written report, within 24 months of effectiveness of the Plan, discussing the feasibility, benefits,

³⁵ See CAT NMS Plan, *supra* note 4, at Section 6.4; see also 17 CFR 242.613(a)(3)(v) and (vi).

and risks of allowing an Industry Member to bulk download the Raw Data that it has submitted to the Central Repository. Commenters on the CAT NMS Plan Notice expressed a desire to have bulk access to their own data for surveillance and internal compliance purposes, as well as to facilitate the error correction process. The Commission believes it is important to consider the potential efficiencies of allowing Industry Members bulk access to their own CAT data, so long as such access does not impact the security of the CAT Data. Without this assessment, the Commission and the Participants will not have sufficient information to consider the tradeoffs of bulk access, and therefore not be able to fully consider whether to permit Industry Members bulk access to their own CAT Data.

Third, the Plan requires the Participants to provide the Commission with a written assessment, within 36 months of effectiveness of the Plan, of the nature and extent of errors in the Customer information submitted to the Central Repository and whether the correction of certain data fields over others should be prioritized. The Commission believes that requiring such an assessment could help ensure that the accuracy of CAT Data is achieved in the most prompt and efficient manner. Without this assessment, the Commission believes that unanticipated issues concerning the accuracy of the customer information fields may go unidentified and negatively impact the overall accuracy of CAT Data.

Fourth, the Plan requires the Participants to provide the Commission with a written report, 36 months after effectiveness of the Plan, on the impact of tiered fees on market liquidity, including an analysis of the impact of the tiered-fee structure on Industry Members' provision of liquidity. One commenter on the CAT NMS Plan Notice expressed concern that use of a tiered fee structure could discourage displayed quotes and, in response, the Participants explained that one of the reasons they chose to use a tiered-fee funding model was to limit disincentives to provide liquidity. To help determine whether the Plan's funding model actually achieves the Participants' stated objective, the Commission believes it appropriate to require them to prepare such an assessment of the impact of tiered fees once the CAT becomes fully operational. Without this assessment, the Participants and the Commission could lack insight into whether the fee model affects liquidity provision and market quality, which could hamper any necessary adjustments to the Funding Model.

Fifth, the Plan requires the Participants to provide the Commission a written assessment of the projected impact of any Material Systems Change on the Maximum Error Rate, prior to the implementation of any Material Systems Change. The Commission believes that Material Systems Changes either could result in new challenges for CAT Reporters or simplify the means for reporting data. In either case, the appropriateness of the Maximum Error Rate could be impacted, and thus warrant a change. Without this assessment, the Participants and the Commission may lack a thorough understanding of how a particular Material Systems Change would impact Error Rates and whether to temporarily adjust the Error Rates around that Material Systems Change.

Sixth, the Plan requires that the CAT LLC's financials be (i) in compliance with GAAP, (ii) be audited by an independent public accounting firm, and (iii) be made publicly available. The Commission believes that this requirement will promote greater transparency with respect to the Company's financial accounting. Without this requirement, that purpose will not be achieved.

Finally, the Plan requires that each Participant conduct background checks for its employees and contractors that will use the CAT System. The Commission believes that this requirement is appropriate to ensure that only authorized and qualified persons are using the CAT System. Without this requirement, that purpose would not be achieved.

7. Inconsistencies with Guidelines in 5 CFR 1320.5(d)(2)

The information collection "Data Collection and Reporting" requires respondents to record and report information to the Central Repository information more frequently than quarterly;³⁶ specifically, certain information must be recorded contemporaneously with a Reportable Event and reported to the Central Repository by 8:00 a.m. ET on the trading day following the day such information has been recorded by a Participant or broker-dealer industry member,³⁷ and other information must be reported by 8:00 a.m. ET on the trading day following the day a broker-dealer member receives such information.³⁸

In addition, the "Data Collection and Reporting" information collection requires respondents to submit confidential information to the Central Repository, such as the terms of an order,³⁹ customer account information,⁴⁰ and information sufficient to identify a customer.⁴¹ Relatedly, the information collection requirement that the Participants develop and implement new surveillance systems, or enhance existing surveillance systems, reasonably designed to make use of consolidated audit trail information⁴² is intended to enable Participants to better monitor trading through use of

³⁶ The CAT NMS Plan did not provide an estimated frequency of reporting for Participants and broker-dealers.

³⁷ See 17 CFR 242.613(c)(3); see also CAT NMS Plan, supra note 4, at Section 6.3(b), Section 6.4(b).

³⁸ See 17 CFR 242.613(c)(4); see also CAT NMS Plan, supra note 4, at Section 6.4(b).

³⁹ See 17 CFR 242.613(c)(7); see also CAT NMS Plan, supra note 4, at Section 6.3(d), Section 6.4(d).

⁴⁰ See 17 CFR 242.613(c)(7)(viii)(B); see also CAT NMS Plan, supra note 4, at Appendix C, Section A.1(A)(iii).

⁴¹ See 17 CFR 242.613(c)(7)(viii)(A); see also CAT NMS Plan, supra note 4, at Section 6.4(ii)(A)(C).

⁴² See 17 CFR 242.613(f).

this confidential information. As described in Item 10 below, Rule 613 includes requirements that the CAT NMS Plan must contain to protect the confidentiality of this information⁴³ and these requirements are detailed in the CAT NMS Plan.⁴⁴

The Commission notes that the information collection “Written Assessment of the Operation of the Consolidated Audit Trail” would likely contain confidential information concerning any deficiencies of the Consolidated Audit Trail and a plan for improvements. The CAT NMS Plan requires the Participants to submit to the Commission the written assessment annually.⁴⁵ To the extent that the Commission receives confidential information pursuant to the CAT NMS Plan, such information will be kept confidential, subject to the provisions of applicable law.

The information collections “Assessment of Material Systems Changes on Error Rates” and “Background Checks” could potentially require the Participants to report and disclose information more frequently than quarterly.

In addition, the information collections: “Bulk Access to Reported Data”; “Errors in Customer Information”; “Impact of Tiered Fees on Market Liquidity”; and “Assessment of Material Systems Changes on Error Rates” may require the Participants to submit confidential information to the Commission. To the extent the Commission receives confidential information pursuant to the CAT NMS Plan, such information will be kept confidential, subject to the provisions of applicable law.

8. Consultations Outside the Agency

The required Federal Register notice with a 60-day comment period soliciting comments on this collection of information was published. No public comments were received.

9. Payment or Gift

Not applicable. The Commission has not provided any payment or gift to the respondents.

10. Confidentiality

The Commission believes that the CAT NMS Plan would require the collection

⁴³ See 17 CFR 242.613(a)(1)(iv), 613(b)(6), 613(e)(4)(i), 613(e)(4)(i)(A).

⁴⁴ See CAT NMS Plan, *supra* note 4, at Section 6.1(b), Section 6.2(b), Section 6.5(f)(i), Section 6.5(iv), Section 6.9, Section 6.12, Appendix D, Section 4.

⁴⁵ See CAT NMS Plan, *supra* note 4, at Section 6.6(a)(i).

and reporting of confidential information, including Personally Identifiable Information⁴⁶ (“PII”), to identify customers. The CAT NMS Plan contains several provisions that provide respondents with assurances that confidential information would be protected.

Rule 613 requires the CAT NMS Plan to contain several provisions relating to the security of the information. Specifically, Rule 613(a)(1)(iv) requires the Participants to discuss the security and confidentiality of the information reported to the Central Repository in the Plan.⁴⁷ Rule 613(b)(6) provides that the Plan must include a provision requiring the Participants to provide to the Commission, at least every two years after effectiveness of the national market system plan, a written assessment of the operation of the consolidated audit trail, which would include an evaluation of the performance of the consolidated audit trail’s system security.⁴⁸ Rule 613(e)(4)(i) also requires that the Plan include policies and procedures, including standards, to be used by the CAT Plan Processor to ensure the security and confidentiality of all information reported to the Central Repository.⁴⁹ The plan sponsors, and employees of the plan sponsors and Central Repository, would be required to agree to use appropriate safeguards to ensure the confidentiality of such data.⁵⁰ Further, Rule 613 requires that the CAT NMS Plan require that audit trail data may not be used by the Participants other than for surveillance or other regulatory purposes.⁵¹

The CAT NMS Plan provides that the CAT Plan Processor is responsible for the security and confidentiality of all CAT Data received and reported to the Central Repository, including during all communications between CAT Reporters and the Plan Processor, data extraction, data manipulation and transformation, loading to and from the Central Repository, and data maintenance by the Central Repository.⁵² The Plan Processor must, among other things, require that individuals with access to the Central Repository agree to use CAT Data only for appropriate surveillance and regulatory activities and to employ safeguards to protect the confidentiality of CAT Data.⁵³

⁴⁶ The term “Personally Identifiable Information,” as used by OMB, refers to information which can be used to distinguish or trace an individual’s identity, such as their name, social security number, biometric records, etc. alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother’s maiden name, etc. See OMB Memorandum M-07-16 (May 22, 2007).

⁴⁷ 17 CFR 242.613(a)(1)(iv).

⁴⁸ 17 CFR 242.613(b)(6).

⁴⁹ 17 CFR 242.613(e)(4)(i).

⁵⁰ 17 CFR 242.613(e)(4)(i)(A).

⁵¹ Id.

⁵² See CAT NMS Plan, supra note 4, at Section 6.5(f)(i), (iv).

⁵³ Id. at Section 6.5(f)(i).

In addition, the Plan Processor must develop a comprehensive information security program, as well as a training program that addresses the security and confidentiality of all information accessible from the consolidated audit trail and the operational risks associated with accessing the Central Repository.⁵⁴ The Plan Processor must also designate one of its employees as the Chief Information Security Officer; among other things, the Chief Information Security Officer is responsible for creating and enforcing appropriate policies, procedures, and control structures regarding data security.⁵⁵ The Technical Specifications, which the Plan Processor must publish, must include a detailed description of the data security standards for the consolidated audit trail.⁵⁶

Appendix D of the CAT NMS Plan sets forth minimum data security requirements for CAT that the Plan Processor must meet.⁵⁷ For example, Appendix D enumerates various connectivity, data transfer, and encryption requirements, such as that the CAT System must have encrypted internet connectivity, CAT Reporters must connect to CAT infrastructure using secure methods such as private lines or virtual private network connections over public lines, CAT Data must be encrypted at-rest and in-flight using industry standard best practices.⁵⁸ Additional requirements regarding data storage, data access, breach management, and PII data are also specified in Appendix D.⁵⁹ Further, the Participants must establish and enforce policies and procedures that ensure the confidentiality of the CAT Data obtained from the Central Repository, limit the use of CAT Data obtained from the Central Repository solely for surveillance and regulatory purposes,⁶⁰ implement effective information barriers between each Participant's regulatory and non-regulatory staff with regard to CAT Data, and limit access to CAT Data to designated persons.⁶¹ However, a Participant may use the Raw Data⁶² it reports

⁵⁴ Id. at Sections 6.1(m), 6.12.

⁵⁵ Id. at Section 6.2(b).

⁵⁶ Id. at Section 6.9.

⁵⁷ Id. at Appendix D, Section 4.

⁵⁸ Id. at Appendix D, Section 4.1.2.

⁵⁹ Id. at Appendix D, Section 4.1.3–4.1.6.

⁶⁰ The Commission notes that regulatory purposes includes, among other things, market surveillance, examinations, investigations, and other enforcement functions, analysis and reconstruction of market events, and market analysis and research to inform policy decisions.

⁶¹ See CAT NMS Plan, supra note 4, at Section 6.5(f)(ii), (g).

⁶² Raw data is defined as “Participant Data and Industry Member Data that has not been through any validation or otherwise checked by the CAT System.” Id. at Section 1.1.

to the Central Repository for “commercial or other” purposes if not prohibited by applicable law, rule or regulation.⁶³

The Participants will not be submitting the Background Check information to the Commission and the Commission is not collecting this information; however, if the Commission receives any confidential information pursuant to the CAT NMS Plan, such information will be kept confidential, subject to the provisions of applicable law.

To the extent that the Commission receives confidential information pursuant to the CAT NMS Plan, such information will be kept confidential, subject to the provisions of applicable law.

11. Sensitive Questions

The information collection pursuant to Rule 613 is collected by the CAT NMS Plan Processor (FINRA CAT), which is managed by self-regulatory organizations (national securities exchanges and FINRA). The information is not a collection by the SEC or on behalf of the SEC and therefore does not constitute a Privacy Act system of records. However, CAT NMS plan identifies and documents the collection of PII and sensitive PII and has implemented considerable privacy controls to safeguard the collection. The SEC will be a user of CAT data and the agency’s use of the data will be subject to a separate privacy impact assessment.

12. Burden of Information Collection

The Commission estimates that the information collection requirements of Rule 613 will apply to 1,524 respondents who will incur an average aggregate total of approximately 7,572,610 burden hours per year to comply with the requirements. The hour burden is calculated as discussed below.

Rule 613 applies to the 24 Participants (the 23 national securities exchanges and the one national securities association (FINRA)) currently registered with the Commission.⁶⁴ This is an increase of 3 Participants from the previous Paperwork

⁶³ Id. at Section 6.5(f)(i).

⁶⁴ The Participants are: 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., Investors Exchange LLC, Long-Term Stock Exchange, Inc., Miami International Securities Exchange 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. The Commission has adjusted its estimates pertaining to the Participants due to the addition of three new Participants (from

Reduction Act Analysis. The Commission also estimates that Rule 613 applies to 1,500 broker-dealers.⁶⁵

A. Burden on National Securities Exchanges and National Securities Associations

a. Central Repository

Rule 613 requires the Participants to jointly establish a Central Repository tasked with the receipt, consolidation, and retention of the reported order and execution information. The Participants previously issued a request for proposal soliciting Bids from entities to act as the consolidated audit trail's Plan Processor, and selected Thesys Technologies, LLC as the Consolidated Audit Trail Plan Processor on January 17, 2017.⁶⁶ On February 27, 2019, the Participants announced that FINRA has been selected

21 Participants in the CAT NMS Plan Order Paperwork Reduction Act analysis to 24 Participants in the instant Paperwork Reduction Act analysis).

⁶⁵ The Commission understands that there are approximately 3,734 broker-dealers, as of December 2019; however, not all broker-dealers are expected to have CAT reporting obligations. The Participants previously reported that approximately 1,800 broker-dealers currently quote or execute transactions in NMS Securities, Listed Options or OTC Equity Securities and would likely have CAT reporting obligations. The Commission believes that now, approximately 1,500 broker-dealers currently quote or execute transactions in NMS Securities, Listed Options or OTC Equity Securities, and would likely have CAT reporting obligations. The Commission believes that this is consistent with the reduced number of broker-dealers overall (from 4,138 to approximately 3,734 broker-dealers) and is making this determination based on experience and knowledge gained in discussions with Participants and the Plan Processor during the development of the consolidated audit trail. The Commission further believes that this reduction is a reduction in the number of Small OATS-Reporting Broker-Dealers, which was previously calculated by identifying all other categories of CAT reporting broker-dealers and determining that the remaining number of the estimated 1,800 broker-dealers were Small OATS-Reporting Broker-Dealers. The Commission understands that the approximately 2,234 remaining registered broker-dealers either trade in asset classes not currently included in the definition of Eligible Security or do not trade at all (e.g., broker-dealers for the purposes of underwriting, advising, private placements).

⁶⁶ See "SROs Select Thesys Technologies, LLC as Consolidated Audit Trail Plan Processor," <https://www.prnewswire.com/news-releases/sros-select-thesys-technologies-llc-as-consolidated-audit-trail-plan-processor-300392226.html>.

as Plan Processor, replacing Thesys Technologies, LLC.⁶⁷ The Plan Processor is responsible for building, operating, administering and maintaining the Central Repository.

The Plan’s Operating Committee, which consists of one voting representative of each Participant,⁶⁸ is responsible for the management of CAT LLC,⁶⁹ including the Central Repository, acting by majority or Supermajority Vote, depending on the issue. In managing the Central Repository, among other things, the Operating Committee has the responsibility to authorize the following actions of the CAT LLC: (1) interpreting the Plan;⁷⁰ (2) determining appropriate funding-related policies, procedures and practices consistent with Article XI of the CAT NMS Plan;⁷¹ (3) terminating the Plan Processor; (4) selecting a successor Plan Processor (including establishing a Plan Processor Selection Subcommittee to evaluate and review Bids and make a recommendation to the Operating Committee with respect to the selection of the successor Plan Processor);⁷² (5) entering into, modifying or terminating any Material Contract;⁷³ (6) making any Material Systems Change;⁷⁴ (7) approving the initial Technical Specifications or any Material Amendment to the Technical Specifications proposed by the Plan Processor;⁷⁵ (8) amending the Technical Specifications on its own motion;⁷⁶ (9) approving the Plan Processor’s appointment or removal of the CCO, CISO, or any Independent Auditor in accordance with Section 6.1(b) of the CAT NMS Plan;⁷⁷ (10) approving any recommendation by the CCO pursuant to Section 6.2(a)(v)(A) of the CAT NMS Plan;⁷⁸ (11) selecting the members of the Advisory Committee;⁷⁹ (12) selecting the Operating

⁶⁷ See “CAT NMS Selects FINRA as Consolidated Audit Trail Plan Processor” available at: https://www.catnmsplan.com/wp-content/uploads/2019/02/CAT_FINRA_Press_Release_FINAL.pdf.

⁶⁸ See *id.* at Section 4.2(a).

⁶⁹ See *supra* note 19.

⁷⁰ See CAT NMS Plan, *supra* note 4, at Section 4.3(a)(iii).

⁷¹ See *id.* at Section 4.3(a)(vi).

⁷² See *id.* at Section 4.3(b)(i).

⁷³ See *id.* at Section 4.3(b)(iv).

⁷⁴ See *id.* at Section 4.3(b)(v).

⁷⁵ See *id.* at Section 4.3(b)(vi).

⁷⁶ See *id.* at Section 4.3(b)(vii).

⁷⁷ See *id.* at Section 4.3(b)(iii).

⁷⁸ See *id.* at Section 4.3(a)(iv).

⁷⁹ See *id.* at Section 4.3(a)(ii).

Committee chair;⁸⁰ and (13) determining to hold an Executive Session of the Operating Committee.⁸¹

Additionally, in managing the Central Repository, the Operating Committee has the responsibility and authority, as appropriate, to: (1) direct the CAT LLC to enter into one or more agreements with the Plan Processor obligating the Plan Processor to perform the functions and duties contemplated by the Plan to be performed by the Plan Processor, as well as such other functions and duties the Operating Committee deems necessary or appropriate;⁸² (2) appoint as an Officer of the Company the individual who has direct management responsibility for the Plan Processor's performance of its obligations with respect to the CAT;⁸³ (3) approve policies, procedures, and control structures related to the CAT System that are consistent with Rule 613(e)(4), Appendix C and Appendix D of the CAT NMS Plan that have been developed and will be implemented by the Plan Processor;⁸⁴ (4) approve any policy, procedure or standard (and any material modification or amendment thereto) applicable primarily to the performance of the Plan Processor's duties as the Plan Processor;⁸⁵ (5) for both the CCO and CISO, render their annual performance reviews and review and approve their compensation;⁸⁶ (6) review the Plan Processor's performance under the Plan at least once each year, or more often than once each year upon the request of two Participants that are not Affiliated Participants;⁸⁷ (7) in conjunction with the Plan Processor, approve and regularly review (and update as necessary) SLAs governing the performance of the Central Repository;⁸⁸ (8) maintain a Compliance Subcommittee for the purpose of aiding the CCO as necessary;⁸⁹ and (9) designate by resolution one or more Subcommittees it deems necessary or desirable in furtherance of the management of the business and affairs of the Company.⁹⁰

The Commission previously estimated the initial burden over the 12-month period after the effectiveness of the CAT NMS Plan within which the Participants would be

⁸⁰ See id. at Section 4.3(a)(i).

⁸¹ See id. at Section 4.3(a)(v).

⁸² See id. at Section 6.1(a).

⁸³ See id. at Section 4.6(b).

⁸⁴ See id. at Section 6.1(c).

⁸⁵ See id. at Section 6.1(e).

⁸⁶ See id. at Section 6.2(a)(iv) and Section 6.2(b)(iv).

⁸⁷ See id. at Section 6.1(n).

⁸⁸ See id. at Section 6.1(h).

⁸⁹ See id. at Section 4.12(b).

⁹⁰ See id. at Section 4.12(a).

required to select an initial Plan Processor⁹¹ and begin reporting to the Central Repository.⁹² The Participants have subsequently selected a Plan Processor and have begun reporting to the Central Repository, so the Commission deems the initial burden of this information collection is completed.⁹³

For its ongoing time burden and cost estimates associated with the management of the Central Repository, the Commission is relying on estimates provided in the CAT NMS Plan for the development of the CAT NMS Plan, which the Participants “have accrued, and will continue to accrue,”⁹⁴ and have described in the CAT NMS Plan as “reasonably associated with creating, implementing, and maintaining the CAT upon the Commission’s adoption of the CAT NMS Plan.”⁹⁵

The Commission believes that the activities of the Operating Committee overlap with those undertaken by the Participants to develop the CAT NMS Plan. The CAT NMS Plan describes the costs incurred by the Participants to develop the CAT NMS Plan as including “staff time contributed by each Participant to, among other things, determine the technological requirements for the Central Repository, develop the RFP, evaluate Bids received, design and collect the data necessary to evaluate costs and other economic impacts, meet with Industry Members to solicit feedback, and complete the CAT NMS Plan submitted to the Commission for consideration.”⁹⁶ For the management of the Central Repository, the Operating Committee has comparable responsibilities. As part of its overall management of the Central Repository, the Operating Committee has responsibility for decisions associated with the technical requirements of the Central Repository.⁹⁷ Furthermore, the Operating Committee is required to authorize the

⁹¹ Rule 613(a)(3)(i) requires the selection of the Plan Processor within 2 months after effectiveness of the CAT NMS Plan. See 17 CFR 242.613(a)(3)(i).

⁹² Rule 613(a)(3)(iii) requires the Participants to provide to the Central Repository the data required by Rule 613(c) within one year after effectiveness of the CAT NMS Plan. See 17 CFR 242.613(a)(3)(iii). The Commission previously estimated that

⁹³ See “CAT NMS Announces Initiation of Reporting to the Consolidated Audit Trail,” CAT NMS, LLC (November 16, 2018), available at: <https://www.catnmsplan.com/wp-content/uploads/2018/11/Press-Release-CAT-Launch-final.pdf>.

⁹⁴ See id. at Appendix C, Section B.7(b)(iii).

⁹⁵ See id.

⁹⁶ See id.

⁹⁷ For example, the Operating Committee would be required to authorize the following actions of the CAT LLC: entering into, modifying or terminating any Material Contract (see id. at Section 4.3(b)(iv)); making any Material Systems Change (see id. at Section 4.3(b)(v)); amending the Technical Specifications on its own motion (see id. at Section 4.3(b)(vii)); and approving the initial Technical

selection of the members of the Advisory Committee,⁹⁸ comprising members of the Industry, to advise the Participants on the implementation, operation, and administration of the Central Repository.⁹⁹ Because the responsibilities of the Operating Committee are similar to those described in the CAT NMS Plan for the development of the CAT NMS Plan itself, the Commission believes that it is reasonable to use the CAT NMS Plan estimates as the basis for its burden and cost estimates for the ongoing management of the Central Repository.

Each Participant contributes an employee and a substitute for the employee to serve on the Operating Committee oversees the Central Repository.

The Operating Committee will continue to be responsible for the management of the Central Repository. The Commission estimates that each of the Participants would incur an average ongoing annual time burden of 600 burden hours associated with the continued management of the Central Repository, for an aggregate annual estimate of 14,400 burden hours across the Participants.¹⁰⁰ The Commission believes it is reasonable

Specifications or any Material Amendment to the Technical Specifications proposed by the Plan Processor (see id. at Section 4.3(b)(vi)). Further, the Operating Committee would be able to approve policies, procedures, and control structures related to the CAT System that are consistent with Rule 613(e)(4), Appendix C and Appendix D of the CAT NMS Plan that have been developed and will be implemented by the Plan Processor (see id. at Section 6.1(c)); and in conjunction with the Plan Processor, approve and regularly review (and update as necessary) SLAs governing the performance of the Central Repository (see id. at Section 6.1(h)).

⁹⁸ See id. at Section 4.3(a)(ii).

⁹⁹ See id. at Section 4.13(d).

¹⁰⁰ The Commission is basing this estimate on the hour burden estimate provided in the CAT NMS Plan for the development of the CAT NMS Plan. The Commission notes that the CAT NMS Plan describes the hour burden estimate for the development of the CAT NMS Plan as a burden the Participants will continue to accrue; therefore, the Commission believes that it is reasonable to use this burden estimate as the basis for its ongoing hour burden estimate for the maintenance of the Central Repository, particularly as the Commission believes the reasons for the staff time incurred for the development of the CAT NMS Plan would be comparable to those of the staff time to be incurred by the Operating Committee for the continued management of the Central Repository. See id. (stating "...the Participants have accrued, and will continue to accrue, direct costs associated with the development of the CAT NMS Plan. These costs include staff time contributed by each Participant to, among other things, determine the technological requirements for the Central Repository, develop the RFP, evaluate Bids received, design and collect the data necessary to evaluate costs and other economic impacts, meet with Industry Members to solicit feedback, and complete

to assume that the ongoing aggregate annual internal burden, across all Participants, associated with the continued management of the Central Repository does not increase or decrease with changes to the number of Participants.

b. Data Collection and Reporting

Rule 613(c)(1) requires the CAT NMS Plan to provide for an accurate, time-sequenced record of orders beginning with the receipt or origination of an order by a Participant, and further to document the life of the order through the process of routing, modification, cancellation and execution (in whole or in part) of the order.¹⁰¹ Rule 613(c) requires the CAT NMS Plan to impose requirements on Participants to record and report CAT information to the Central Repository in accordance with specified timelines.¹⁰²

Rule 613(c) requires the CAT NMS Plan to require the collection and reporting of some information that Participants already collect to operate their business and are required to maintain in compliance with Section 17(a) of the Exchange Act and Rule 17a-1 thereunder.¹⁰³ For instance, the Commission believes that the national securities exchanges keep records pursuant to Section 17(a) of the Exchange Act and Rule 17a-1 thereunder in electronic form, of the receipt of all orders entered into their systems, as well as records of the routing, modification, cancellation, and execution of those orders. However, Rule 613 requires the CAT NMS Plan to require the Participants to collect and report additional and more detailed information, and to report the information to the Central Repository in a uniform electronic format, or in a manner that would allow the Central Repository to convert the data to a uniform electronic format for consolidation and storage.

The CAT NMS Plan provides estimated costs for hardware, software, third-party providers, and Participants' full-time employees ("FTE's) to be incurred by the

the CAT NMS Plan submitted to the Commission for consideration. The Participants estimate that they have collectively contributed 20 FTEs in the first 30 months of the CAT NMS Plan development process"). (20 FTEs / 30 months) = 2/3 FTEs per month for all of the Participants to continue management of the Central Repository. Converting this into burden hours, (2/3 FTEs) x (12 months) x (1,800 burden hours per year) = 14,400.72 ongoing annual burden hours for all of the Participants to continue management of the Central Repository. (14,400 ongoing annual burden hours for all Participants / 24 Participants) = 600 ongoing annual burden hours for each Participant to continue management of the Central Repository.

¹⁰¹ 17 CFR 242.613(c)(1). See also CAT NMS Plan, supra note 4, at Section 6.3.

¹⁰² 17 CFR 242.613(c). See also CAT NMS Plan, supra note 4, at Section 6.3.

¹⁰³ 15 U.S.C. 78q(a); 17 CFR 240.17a-1.

Participants to report CAT Data.¹⁰⁴ For these estimates, the Commission is relying on the estimates provided by the Participants because it believes that the Plan's estimates for Participants to report CAT Data are reliable since all of the Participants provided estimates, and most Participants have experience collecting audit trail data, as well as knowledge of both the requirements of Rule 613 as well as their current business practices. The Commission notes that the Participants provided these numbers based on a study (the "Participants Study") that was distributed to 19 Participants on August 11, 2014. The Commission has divided certain numbers provided by the Participants Study by 19 in order to calculate estimates of burdens and/or costs per Participant, where appropriate, and further adjusted calculations to account for the increased number of Participants (24).¹⁰⁵

The Commission notes that throughout this Paperwork Reduction Act analysis, it is categorizing the FTE cost estimates for the Participants, as well as the broker-dealer respondents, that were provided in the CAT NMS Plan as an internal compliance cost not an actual Item 13 cost. The Commission: (1) divided the FTE cost estimates by a divisor of \$424,350, which is the Commission's estimated average salary for a full-time equivalent employee in the securities industry in a job category associated with regulatory data reporting;¹⁰⁶ and then (2) multiplied the quotient by 1,800 (the number of

¹⁰⁴ Third-party provider costs are generally legal and consulting costs, but may include other outsourcing. The template used by respondents is available at <http://catnmsplan.com/PastEvents/> under the Section titled "6/23/14" at the "Cost Study Working Template" link.

¹⁰⁵ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(i)(A)(1). Specifically, estimates relating to Data Collection and Reporting (Participants) and Surveillance, as described below, have been modified based on this approach.

¹⁰⁶ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(ii)(C), at n.192. The Participants represented that the cost per FTE is \$401,440. The \$401,440 figure used in the CAT NMS plan was based on a Programmer Analyst's salary (\$193 per hour) from SIFMA's *Management & Professional Earnings in the Securities Industry 2008*, multiplied by 40 hours per week, then multiplied by 52 weeks per year. The Commission has updated this number to include recent salary data for other job categories associated with regulatory data reporting in the securities industry, using the hour and multiple methodology used by the Commission in its paperwork burden analyses. The Commission is using \$424,350 as its annual cost per FTE for purposes of its cost estimates. The \$424,350 FTE cost = 25% Compliance Manager + 75% Programmer Analyst (0.25) x (\$283 per hour x 1,800 working hours per year) + (0.75) x (\$220 per hour x 1,800 working hours per year). The \$283 per hour figure for a Compliance Manager and the \$220 per hour figure for a Programmer Analyst are from SIFMA's *Management & Professional Earnings in the Securities Industry 2013*, modified by the Commission to account for an 1,800-hour work-year and

hours a full-time equivalent employee is estimated to work per year). The Commission believes it is appropriate to use the same calculation now because the Commission continues to rely on estimated costs and figures provided by the Plan Participants in the CAT NMS Plan.

The Commission previously estimated initial burden hours to develop and implement the needed systems changes to capture the required information and transmit it to the Central Repository in compliance with the Rule for each Participant. As noted above, the Participants have begun reporting to the consolidated audit trail and thus the Commission believes that this information collections requirement is complete for most Participants.¹⁰⁷

However, the Commission estimates that Rule 613 would impose on each Participant ongoing annual burdens associated with, among other things, personnel time to monitor each Participant's reporting of the required data and the maintenance of the systems to report the required data; and implementing changes to trading systems that might result in additional reports to the Central Repository. The CAT NMS Plan provides the following average aggregate FTE internal compliance cost that the Participants would expect to incur to maintain data reporting systems to be in compliance with Rule 613: \$7,300,000 in anticipated annual FTE costs for operational, technical/development, and compliance functions related to data reporting.¹⁰⁸ Based on this estimate provided in the CAT NMS Plan, the Commission believes that it would take each Participant 1,629 ongoing burden hours per year¹⁰⁹ to continue compliance with Rule 613. Therefore, the Commission estimates that the estimated aggregate ongoing burden for all Participants would be approximately 39,096 hours.¹¹⁰

The Commission estimates that it would take the Participants approximately 39,096 burden hours per year to maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(1,629 ongoing burden hours) x (24 Participants)]. This estimated burden has changed because the Commission is now applying this estimation to 24 Participants, and because the Commission has adjusted the method in which it estimates the per-Participant burden, by using the estimation provided

multiplied by 5.35 to account for bonuses, firm size, employee benefits and overhead.

¹⁰⁷ See, supra, note 93.

¹⁰⁸ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

¹⁰⁹ $(\$7,300,000 \text{ in anticipated Participant annual FTE costs}) / (19 \text{ Participants}) = \$384,210.53 \text{ in anticipated per Participant annual FTE costs. } (\$384,210.53 \text{ in anticipated per Participant FTE costs}) / (\$424,350 \text{ FTE cost per Participant}) = 0.905 \text{ anticipated FTEs per Participant. } (0.905 \text{ FTEs}) \times (1,800 \text{ working hours per year}) = 1,629 \text{ burden hours per Participant to maintain CAT Data reporting.}$

¹¹⁰ $39,096 \text{ annual burden hours} = (24 \text{ Participants}) \times (1,629 \text{ annual burden hours}).$

in the Participants Study, adjusted by the number of Participants that contributed to the relevant CAT NMS Plan estimate (19).¹¹¹

c. Collection and Retention of NBBO, Last Sale Data and Transaction Reports

Rule 613(e)(7) provides that the CAT NMS Plan must require the Central Repository to collect and retain on a current and continuous basis NBBO information for each NMS security, transaction reports reported pursuant to an effective transaction reporting plan, and Last Sale Reports reported pursuant to the Options Price Reporting Authority (“OPRA”) Plan.¹¹²

Additionally, the CAT NMS Plan must require the Central Repository to maintain this data in a format compatible with the order and event information consolidated and stored pursuant to Rule 613(c)(7).¹¹³ Further, the CAT NMS Plan must require the Central Repository to retain the information collected pursuant to paragraphs (c)(7) and (e)(7) of Rule 613 for a period of not less than five years in a convenient and usable uniform electronic format that is directly available and searchable electronically without any manual intervention.¹¹⁴ The Commission notes that the CAT NMS Plan includes these data as “SIP Data” to be collected by the Central Repository.¹¹⁵ The Commission believes the burden associated with SIP Data is included in the burden to the Participants associated with the implementation and maintenance of the Central Repository.

d. Surveillance

Rule 613(f) provides that the CAT NMS Plan must require that every national securities exchange and national securities association develop and implement a surveillance system, or enhance existing surveillance systems, reasonably designed to make use of the consolidated information contained in the consolidated audit trail. Rule 613(a)(3)(iv) provides that the CAT NMS Plan must require that the surveillance systems be implemented within fourteen months after effectiveness of the CAT NMS Plan.

The CAT NMS Plan states that the estimated total initial FTE internal compliance cost to the Participants to implement surveillance programs within the Central Repository

¹¹¹ See supra notes 104 and 105, and accompanying text.

¹¹² See 17 CFR 242.613(e)(7).

¹¹³ Id.

¹¹⁴ See 17 CFR 242.613(e)(8).

¹¹⁵ See CAT NMS Plan, supra note 4, at Section 6.5(a)(ii).

is \$17,500,000 for operational, technical/development, and compliance staff to be engaged in the creation of surveillance programs.¹¹⁶

Based on the estimates provided in the CAT NMS Plan, the Commission estimates that the initial internal hour burden to implement new or enhanced surveillance systems reasonably designed to make use of the consolidated audit trail data for each Participant would be approximately 3,906 burden hours,¹¹⁷ for an aggregate initial burden of 93,744 burden hours.¹¹⁸ Annualized over three years, this would be an average annual burden of 1,302 hours per Participant or 31,248 hours for all Participants. This estimated aggregate one-time burden has changed because the Commission is now applying this estimation to 24 Participants, and because the Commission has adjusted the method in which it estimates the per-Participant burden, by using the estimation provided in the Participants' Study, adjusted by the number of Participants that contributed to the relevant CAT NMS Plan estimation (19).¹¹⁹

The CAT NMS Plan states that the estimated total annual FTE internal compliance cost associated with the ongoing maintenance of surveillance programs for the Participants is \$66,700,000 for internal operational, technical/development, and compliance staff to be engaged in the maintenance of surveillance programs.¹²⁰ Based on the estimates provided in the CAT NMS Plan, the Commission estimates that the ongoing annual internal hour burden to maintain the new or enhanced surveillance systems reasonably designed to make use of the consolidated audit trail data for each Participant would be approximately 14,891.4 hours,¹²¹ for an aggregate annual burden of 357,393.6

¹¹⁶ See id. at Appendix C, Section B.7(b)(iii)(B)(2).

¹¹⁷ $(\$17,500,000 \text{ in anticipated initial FTE costs}) / (19 \text{ Participants}) = \$921,052.63 \text{ in anticipated FTE costs per Participant. } (\$921,052.63 \text{ in anticipated initial FTE costs per Participant}) / (\$424,350 \text{ FTE cost per Participant}) = 2.17 \text{ anticipated initial FTEs per Participant. } (2.17 \text{ FTEs}) \times (1,800 \text{ working hours per year}) = 3,906 \text{ initial burden hours per Participant to implement new or enhanced surveillance systems.}$

¹¹⁸ $(3,906 \text{ initial burden hours per Participant to implement new or enhanced surveillance systems}) \times (24 \text{ Participants}) = 93,744 \text{ aggregate initial burden hours.}$

¹¹⁹ See supra notes 104 and 105, and accompanying text.

¹²⁰ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

¹²¹ $(\$66,700,000 \text{ in anticipated ongoing FTE costs}) / (19 \text{ Participants}) = \$3,510,526.31 \text{ in anticipated ongoing FTE costs per Participant. } (\$3,510,526.31 \text{ in anticipated ongoing FTE costs per Participant}) / (\$424,350 \text{ FTE cost per Participant}) = 8.273 \text{ anticipated FTEs per Participant. } (8.273 \text{ FTEs}) \times (1,800 \text{ working hours per year}) = 14,891.4 \text{ ongoing burden hours per Participant to maintain the new or enhanced surveillance systems.}$

burden hours.¹²² This estimated burden has changed because the Commission is now applying this estimation to 24 Participants, and because the Commission has adjusted the method in which it estimates the per-Participant burden, by using the estimation provided in the Participants Study, adjusted by the number of Participants that contributed to the relevant CAT NMS Plan estimation (19).¹²³

The Commission thus estimates that, in the aggregate, it would take the 24 Participants an average of approximately 388,642 burden hours per year to develop, implement (or enhance existing) surveillance systems reasonably designed to make use of the consolidated information contained in the consolidated audit trail, and to maintain such systems [(3,906 initial burden hours amortized over three years) + (14,891.4 ongoing burden hours) x (24 Participants) = 388,641.6 rounded up to 388,642].

e. Written Assessment of Operation of the Consolidated Audit Trail

Rule 613(b)(6) provides that the CAT NMS Plan must require the Participants to provide the Commission a written assessment of the consolidated audit trail's operation at least every two years, once the CAT NMS Plan is effective.¹²⁴ The assessment must address, at a minimum, with respect to the consolidated audit trail: (i) an evaluation of its performance; (ii) a detailed plan for any potential improvements to its performance; (iii) an estimate of the costs associated with any such potential improvements; and (iv) an estimated implementation timeline for any such potential improvements, if applicable.¹²⁵ Thus, the Participants must, among other things, undertake an analysis of the consolidated audit trail's technological and computer system performance.

Section 6.6 of the CAT NMS Plan, as approved by the Commission, requires the assessment contemplated by Rule 613(b)(6) to be submitted on an annual basis. Section 6.6 of the Plan also requires the Participants to provide an estimate of the costs associated with any potential improvements to the performance of the CAT, including an assessment of the potential impact on competition, efficiency and capital formation. Section 6.6 of the Plan also requires the annual assessment to consider the benefits of potential improvements to the CAT, including to investor protection.¹²⁶

¹²² (14,891.4 annual burden hours per Participant to maintain new or enhanced surveillance systems) x (24 Participants) = 357,393.6 aggregate annual burden hours.

¹²³ See supra notes 104 and 105, and accompanying text.

¹²⁴ 17 CFR 242.613(b)(6).

¹²⁵ Id.

¹²⁶ The Participants' annual written assessment must also include: (1) an evaluation of the information security program of the CAT to ensure that the program is consistent with the highest industry standards for protection of data; (2) an evaluation of potential technological upgrades based upon a review of

The CAT NMS Plan also states that the CCO will oversee the assessment required by Rule 613(b)(6), and would allow the Participants to review and comment on the assessment before it is submitted to the Commission.¹²⁷ The CCO is an employee of the Plan Processor and would be compensated by the Plan Processor.¹²⁸ The Commission assumes that the overall cost and associated burden on the Participants to implement and maintain the Central Repository includes both the compensation for the Plan Processor as well as its employees for the implementation and maintenance of the Central Repository.

The Commission estimates that it would take each Participant approximately 150 annual burden hours of internal legal, compliance, business operations, and information technology staff time to review and comment on the assessment prepared by the CCO of the operation of the CAT.¹²⁹ Therefore, the Commission estimates that the ongoing annual burden of submitting a written assessment each year would be 150 ongoing burden hours per Participant, for an estimated aggregate annual ongoing burden of 3,600

technological developments over the preceding year, drawing on necessary technological expertise, whether internal or external; (3) an assessment of efforts to reduce the time to restore and recover CAT Data at a back-up site; (4) an assessment of how the Plan Processor and SROs are monitoring Error Rates and addresses the application of Error Rates based on product, data element or other criteria; (5) a copy of the evaluation required by Section 6.8(c) of the Plan as to whether industry standards have evolved such that: (i) the clock synchronization standard in Section 6.8(a) should be shortened; or (ii) the required timestamp in Section 6.8(b) should be in finer increments; and (6) an assessment of whether any data elements should be added, deleted or changed. See CAT NMS Plan Order, supra note 6, at Section IV.H.

¹²⁷ See CAT NMS Plan, supra note 4, at Section 6.6.

¹²⁸ Id. at Section 6.2(a).

¹²⁹ The Commission is basing this estimate on the internal burden provided in the CAT NMS Plan related to the development of the CAT NMS Plan. See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii) (stating “[t]he Participants estimate that they have collectively contributed 20 FTEs in the first 30 months of the CAT NMS Plan development process”). Because the required written assessment is much more limited in scope than the CAT NMS Plan, the Commission is applying the CAT NMS Plan development internal burden over a 6-month period, divided by half. $0.667 \text{ FTEs required for all Participants per month to develop the CAT NMS Plan} = (20 \text{ FTEs} / 30 \text{ months})$. $0.667 \text{ FTEs} \times 6 \text{ months} = 4 \text{ FTEs}$. $4 \text{ FTEs} / 2 = 2 \text{ FTEs}$ needed for all of the Participants to create and submit the document. $2 \text{ FTEs} \times 1,800 \text{ working hours per year} = 3,600 \text{ burden hours}$. $3,600 \text{ burden hours} / 24 \text{ Participants} = 150 \text{ burden hours per Participant to create and file the document}$.

hours.¹³⁰ The individual burden for each Participant has fallen because of the increased number of Participants (24 instead of 21), and because the Commission believes that the aggregate annual ongoing burden of the written assessment should not change based on an increase or decrease in the number of Participants.

The Commission estimates that it would take the Participants a total of approximately 3,600 hours per year to review, comment on, and submit the written assessment to the Commission [(150 ongoing burden hours) x (24 Participants)].

f. Assessment of Industry Member Bulk Access to Reported Data

Section 6.6(a)(iv) of the CAT NMS Plan requires the Participants to provide a written report discussing the feasibility, benefits, and risks of allowing an Industry Member to bulk download the Raw Data it submitted to the Central Repository, within 24 months of effectiveness of the Plan.

The Commission estimates that it would take each Participant approximately 15 initial, one-time burden hours of internal legal, compliance, business operations, and information technology staff time to prepare and submit the assessment.¹³¹ Therefore, the Commission estimates that the initial one-time burden of submitting a written assessment would be 15 initial burden hours per Participant, for an estimated aggregate initial burden of approximately 360 hours.¹³² Annualized over three years, this would be an average annual burden of 5 hours per Participant or 120 hours for all Participants.

The Commission estimates that it would take the Participants an aggregate average of approximately 120 hours per year to submit a written report detailing the Participants' consideration of bulk access by Industry Members (15 initial, one-time burden hours amortized over three years) x (24 Participants). This burden has changed because of the increased number of Participants (24 Participants instead of 21 Participants).

g. Assessment of Errors in Customer Information Fields

¹³⁰ 3,600 ongoing annual burden hours = (150 ongoing annual burden hours) x (24 Participants).

¹³¹ The Commission estimates that 15 internal burden hours = (Computer Operations Department Manager at 2 hours) + (Senior Database Administrator at 5 hours) + (Senior Systems Analyst at 2 hours) + (Systems Analyst at 2 hours) + (Attorney at 2 hours) + (Assistant General Counsel at 2 hours).

¹³² 360 initial one-time internal burden hours = (15 initial, one-time burden hours per Participant) x (24 Participants).

Section 6.6(a)(v) of the CAT NMS Plan requires the Participants to submit a written assessment of errors in the customer information submitted to the Central Repository and whether to prioritize the correction of certain data fields over others, within 36 months of effectiveness of the Plan.

The Commission estimates that it would take each Participant approximately 24 initial, one-time burden hours of internal legal, compliance, and information technology staff time to prepare and submit the assessment of errors.¹³³ Therefore, the Commission estimates that the initial, one-time burden of preparing and submitting a written assessment would be 24 initial, one-time burden hours per Participant (8 hours per Participant when annualized over three years), for an estimated aggregate initial, one-time burden of approximately 576 hours.¹³⁴

When annualized over three years, the average aggregate burden on Participants is approximately 192 hours per year to submit the written assessment of errors in the customer information fields (24 initial, one-time burden hours amortized over three years) x (24 Participants). This burden has changed because of the increased number of Participants (24 Participants instead of 21 Participants).

h. Report on Impact of Tiered Fees on Market Liquidity

Section 6.6(a)(vi) of the CAT NMS Plan requires the Participants to submit a written report to study the impact of tiered-fees on market liquidity, including an analysis of the impact of the tiered-fee structure on Industry Members provision of liquidity, within 36 months of effectiveness of the Plan.

¹³³ The Commission estimates that 24 internal burden hours = (Computer Operations Department Manager at 3 hours) + (Senior Database Administrator at 4 hours) + (Senior Systems Analyst at 2 hours) + (Systems Analyst at 2 hours) + (Compliance Attorney at 5 hours) + (Attorney at 4 hours) + (Assistant General Counsel at 4 hours). The Commission believes that the assessment of the errors in the customer information submitted to the Central Repository and the prioritization of the correction of certain data fields over others would require the time of certain information technology staff and their managers. A Database Administrator would be involved in analyzing the errors in the customer information submitted to the Central Repository and in suggesting any changes to the Central Repository, and Systems Analysts would assess the impact of any proposed changes to the Central Repository on other systems. Further, the Commission believes that the prioritization of the correction of data fields would require the input of compliance and legal staff, and that legal staff would need to review the assessment before it is submitted.

¹³⁴ 576 initial, one-time burden hours = (24 initial, one-time burden hours per Participant) x (24 Participants).

The Commission estimates that it would take each Participant approximately 18.75 initial, one-time burden hours of internal legal and business operations staff time to prepare and submit the report studying the impact of tiered fees on market liquidity.¹³⁵ Therefore, the Commission estimates that the initial, one-time burden of preparing and submitting the report studying the impact of tiered fees on market liquidity would be 18.75 initial, one-time burden hours per Participant (6.25 hours per year when annualized over three years), for an estimated aggregate initial, one-time burden of approximately 450 hours (150 hours per year when annualized over three years).¹³⁶

The Commission thus estimates that it would take the Participants an aggregate average of approximately 150 hours per year to prepare and submit the report studying the impact of tiered fees on market liquidity (18.75 initial, one-time burden hours amortized over three years) x (24 Participants). This burden has changed because of the increased number of Participants (24 Participants instead of 21 Participants).

i. Assessment of Material Systems Change on Error Rate

Section 6.6(a)(vii) of the CAT NMS Plan requires a written assessment of the projected impact of any Material Systems Change on the Maximum Error Rate, prior to the implementation of any Material Systems Change.

The Commission estimates that the CAT may have four Material Systems Changes per year. Based on this estimate, the Commission estimates that each

¹³⁵ The Commission previously calculated the total estimated burden hours based on a similar formulation used for calculating the total estimated burden hours of Rule 613(i)'s requirement for a document addressing expansion of the CAT to other securities. The Commission assumed that the preparation of the assessment would be approximately one-eighth as burdensome as the document required by Rule 613(i). To estimate the Rule 613(i) burden, the Commission applied the internal burden estimate provided in the CAT NMS Plan for Plan development over a 6-month period, and divided the result in half. See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii). 0.667 FTEs required for all Participants per month to develop the CAT NMS Plan = (20 FTEs / 30 months). 0.667 FTEs x 6 months = 4 FTEs. 4 FTEs / 2 = 2 FTEs needed for all of the Participants to create and submit the Rule 613(i) document. (2 FTEs) x (1/8) = 0.25 FTE to prepare and submit the report studying the impact of tiered fees on market liquidity. (0.25 FTE x 1,800 working hours per year) = 450 initial, one-time burden hours for all of the Participants to review and comment on the written assessment. (450 burden hours / 24 Participants) = 18.75 initial, one-time burden hours per Participant to prepare and submit the report.

¹³⁶ 450 initial, one-time burden hours = (18.75 initial, one-time burden hours) x (24 Participants).

Participant would incur approximately 5.21¹³⁷ burden hours to prepare and submit each assessment, or approximately 20.84 annual burden hours per year,¹³⁸ for an aggregate, ongoing estimate of 125 burden hours per report,¹³⁹ or an aggregate ongoing estimate of approximately 500 burden hours per year.¹⁴⁰

The Commission estimates that it would take the Participants approximately 500 burden hours to prepare and submit each assessment (approximately 20.84 annual burden hours per year) x (24 Participants). The individual burden for each Participant has fallen because of the increased number of Participants (24 instead of 21), and because the Commission believes that the aggregate annual ongoing burden of preparing and submit each assessment should not change based on an increase or decrease in the number of Participants.

j. Background Checks

Section 6.1(g) of the CAT NMS Plan requires each Participant to conduct background checks of its employees and contractors that will use the CAT System. The Commission estimates that this requirement will impact approximately 1,700 users.¹⁴¹ The Commission estimates that each Participant would need to have background checks

¹³⁷ This estimate is based on the quarterly material system change reports required under Rule 1003(a)(1) of Regulation SCI. The Commission estimated that each SCI entity would incur a burden of 125 hours to comply with the quarterly report on material changes to SCI systems required under Rule 1003(a)(1) (7.5 hours by an Attorney, 7.5 hours by a Compliance Manager, 5 hours by a Chief Compliance Officer, 30 hours by a Senior Business Analyst, and 75 hours by a Senior Systems Analyst). See Regulation Systems Compliance and Integrity, Securities Exchange Act Release No. 73639 (December 5, 2014), 79 FR 72251, at 72390, n.1656. Because the CAT is an SCI System of the Participants, the Commission is assuming for its estimates that each Participant would incur an equal portion of the 125 burden hours per report. (125 burden hours / 24 Participants = approximately 5.21 burden hours per Participant).

¹³⁸ The Commission estimates that there would be four Material System Changes per year. (5.21 burden hours per report) x (4 reports per year) = 20.84 annual burden hours per year.

¹³⁹ (5.21 burden hours per report) x 24 Participants = 125.04 burden hours per report rounded down to 125.

¹⁴⁰ (125 burden hours) x (4 reports per year) = 500 annual burden hours.

¹⁴¹ Previously, the Commission estimated that approximately 1,500 users would be impacted, based on conversations with Participants, when there were only 21 Participants in the CAT NMS Plan. The Commission is revising this estimate to account for 3 additional Participants.

of approximately 71 users.¹⁴² For its estimates, the Commission is assuming that these would be background checks using fingerprints submitted to the Attorney General of the United States for identification and processing.¹⁴³ The Commission estimates that it would take approximately 15 minutes¹⁴⁴ to create and submit each fingerprint card.¹⁴⁵ The total reporting burden per Participant is therefore estimated to be 17.75 initial, one-time burden hours (approximately 5.92 hours when annualized over three years),¹⁴⁶ for an aggregate, initial burden of approximately 426 hours (approximately 142 hours when annualized over three years).¹⁴⁷

The Commission estimates that the ongoing internal burden hours for each Participant would be approximately 4.23 annual burden hours,¹⁴⁸ for an aggregate annual burden hour amount of approximately 101.52 burden hours.¹⁴⁹

The Commission thus estimates that it would take the Participants an aggregate average of approximately 244 (243.6 rounded up to 244) hours to conduct a background check [((17.75 initial, one-time burden hours amortized over three years) + (4.23 annual burden hours)) x (24 Participants)]. This burden has changed because of the increased number of Participants (24 Participants instead of 21 Participants).

¹⁴² 70.83 users per Participant = (1,700 users) / (24 Participants).

¹⁴³ The Commission is basing this assumption on the requirements of Section 17(f)(2). 15 U.S.C. 78q(f)(2).

¹⁴⁴ This is based on the per respondent burden in Extension of Rule 17f-2, SEC File No. 270-35, OMB Control No. 3235-0029, 79 FR 42563 (July 22, 2014).

¹⁴⁵ The Commission is assuming that this would be a burden of 15 minutes for a Compliance Manager per fingerprint card.

¹⁴⁶ 17.75 burden hours = (Compliance Manager at 15 minutes) x (71 users).

¹⁴⁷ 426 = (17.75 initial one-time burden hours) x (24 Participants).

¹⁴⁸ The Commission assumes that the finance industry has a rate of 23.87% turnover per year, based on a monthly rate for both employment separations and hires of 1.8% for the finance and insurance industry in September 2016. See <http://www.bls.gov/news.release/pdf/jolts.pdf> (news release from the Bureau of Labor Statistics, dated November 8, 2016). The Commission estimates that the Participants will have to annually conduct background checks of 23.87% of the 1,700 users, or 405.79 users per year. (405.79 users) / (24 Participants) = 16.90 users that will need to be subject to background checks on an annual basis. Based on this estimate, the Commission estimates that each Participant would incur a burden of 4.23 ongoing annual burden hours = (Compliance Manager at 15 minutes) x (16.90 users).

¹⁴⁹ 101.52 annual ongoing burden hours = (4.23 ongoing annual burden hours per Participant) x (24 Participants).

B. Burden on Broker-Dealer Members

a. Data Collection and Reporting

Rule 613(c)(1) requires the CAT NMS Plan to provide for an accurate, time-sequenced record of orders beginning with the receipt or origination of an order by a broker-dealer member of a Participant, and further documenting the life of the order through the process of routing, modification, cancellation and execution (in whole or in part) of the order. Rule 613(c) requires the CAT NMS Plan to impose requirements on broker-dealer members to record and report CAT information to the Central Repository in accordance with specified timelines.

The Commission's estimates delineate broker-dealer firms by whether they insource or outsource, or are likely to insource or outsource, CAT Data reporting obligations. The Commission believes that firms that report high numbers of OATS Reportable Order Events ("ROEs")¹⁵⁰ strategically would decide to either self-report their CAT Data or outsource their CAT Data reporting functions, while the firms with the lowest levels of activity would be unlikely to have the infrastructure and specialized employees necessary to insource CAT Data reporting and would almost certainly outsource their CAT Data reporting functions. The Commission recognizes that some active firms that will likely be CAT Reporters and insource regulatory data reporting functions may not have current OATS reporting obligations because they either are not FINRA members, or because they do not trade in NMS equity securities.¹⁵¹

The Commission estimates that there are 126 OATS-reporting Insourcers and 45 non-OATS reporting Insourcers.¹⁵² The Commission's estimation categorizes the

¹⁵⁰ The Commission uses for its estimates the number of OATS ROEs reported by firms that report to OATS. The Commission believes that because OATS reportable events, such as order originations, routes, and executions are also CAT Reportable Events, these two measures are likely to be highly correlated, making the number of OATS records a proxy for the anticipated level of CAT reporting. The Commission believes that the higher the number of OATS ROEs reported, the higher the anticipated number of CAT records to report. As noted below, however, the Commission anticipates that the number of CAT records would exceed the number of OATS ROEs.

¹⁵¹ The Commission also recognizes as discussed above that some broker-dealer firms may strategically choose to outsource despite the Plan's working assumption that these broker-dealers would insource their regulatory data reporting functions.

¹⁵² These are 126 OATS reporters that reported more than 350,000 OATS ROEs per month; 31 Options Market Making firms; and 14 electronic liquidity providers ("ELPs").

remaining 1,329 broker-dealers that the Plan anticipates would have CAT Data reporting obligations as Outsourcers.¹⁵³

The Commission notes that while the CAT NMS Plan currently implements reporting deadlines that have already past, the Commission understands that the consolidated audit trail is not fully operational and that broker-dealers have not yet had the ability to or begun to report the data required by the CAT NMS Plan as of January 2020. The Commission believes that it is appropriate to continue to estimate the initial one-time burdens of development required from broker-dealers.

(1) Insourcers

A. Large Non-OATS-Reporting Broker-Dealers

The Commission relies on the Plan's large broker-dealer FTE estimates in estimating burden hours for large broker-dealers that can practicably decide between insourcing or outsourcing their regulatory data reporting functions.¹⁵⁴ The Commission estimates that there are 14 large broker-dealers that are not OATS reporters currently in the business of electronic liquidity provision ("ELP Firms") that would be classified as Insourcer firms.¹⁵⁵

Additionally, the Commission estimates that there are 31 Options Market Maker broker-dealers ("OMM Firms") that may transact in options but not in equities that can be classified as Insourcer firms.¹⁵⁶ These firms may have customer orders and other activity off-exchange that would cause them to incur a CAT reporting obligation. The Commission assumes the 31 OMM Firms and 14 ELP Firms would be typical of the Plan's large non-OATS-reporting firms; for these firms, the Commission relies on the

¹⁵³ These broker-dealers are assumed to already outsource data reporting services.

¹⁵⁴ See CAT NMS Plan, supra note 4, at Appendix C, Section A.6(c).

¹⁵⁵ These broker-dealers are not FINRA members and thus have no regular OATS reporting obligations. The category of Insourcers that do not currently report OATS data includes firms that have multiple SRO memberships that exclude FINRA. This category includes Options Market Makers and at least 14 ELPs; these are firms that carry no customer accounts and directly route proprietary orders to Alternative Trading Systems.

¹⁵⁶ The Commission previously identified 39 CBOE-member broker-dealers that are not FINRA members, but are members of multiple SROs; eight of these broker-dealers were previously identified as ELPs, leaving 31 firms with multiple SRO memberships that are unlikely to be CBOE floor brokers. These 31 firms are likely to include some ELPs. This methodology implicitly assumes that there are no Options Market Makers that are not members of the CBOE.

burden hour estimates provided under Approach 1¹⁵⁷ for large non-OATS-reporting firms in the CAT NMS Plan.

The CAT NMS Plan provides the following average initial FTE count figure that a large non-OATS reporting broker-dealer would expect to incur to adopt the systems changes needed to comply with the data reporting requirements of Rule 613 under Approach 1: 8.05 internal FTEs.¹⁵⁸ Based on this information, the Commission estimates that the average initial burden associated with implementing regulatory data reporting to capture the required information and transmit it to the Central Repository in compliance with the Rule for each large, non-OATS reporting broker-dealer would be approximately 14,490 initial burden hours (approximately 4,830 hours per year when annualized over three years),¹⁵⁹ for an estimated aggregate initial burden of approximately 652,050 hours (approximately 217,350 per year when annualized over three years).¹⁶⁰

Once a large non-OATS reporting broker-dealer has established the appropriate systems and processes required for collection and transmission of the required information to the Central Repository, the Commission believes that the Rule would impose ongoing annual burdens associated with, among other things, personnel time to monitor each large non-OATS reporting broker-dealer's reporting of the required data

¹⁵⁷ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(i)(A)(2). Approach 1 assumes CAT Reporters would submit CAT Data using their choice of industry protocols. Approach 2 assumes CAT Reporters would submit data using a pre-specified format. Approach 1's aggregate costs are higher than those for Approach 2 for all market participants except in one case where service bureaus have lower Approach 1 costs. For purposes of this Paperwork Reduction Act analysis, the Commission is not relying on the estimates for Approach 2 because overall the Approach 1 aggregate estimates represent the higher of the proposed approaches. The Commission believes it would be more comprehensive to use the higher of the two estimates for its Paperwork Reduction Act analysis estimates.

¹⁵⁸ Approach 1 also provided \$3,200,000 in initial internal FTE costs. The Commission believes the \$3,200,000 in internal FTE costs is the Participants' estimated cost of the 8.05 FTEs. (8.05 FTEs) x (\$401,440 Participants' assumed annual cost per FTE provided in the CAT NMS Plan) = \$3,231,592. See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(ii)(C), at n. 192. See also supra note 106.

¹⁵⁹ 14,490 initial burden hours = (8.05 FTEs for implementing CAT Data reporting systems) x (1,800 working hours per year).

¹⁶⁰ The Commission estimates that 45 large non-OATS reporting broker-dealers would be impacted by this information collection. (45 large non-OATS reporting broker-dealers) x (14,490 burden hours) = 652,050 initial burden hours to implement data reporting systems.

and the maintenance of the systems to report the required data; and implementing changes to trading systems that might result in additional reports to the Central Repository. The CAT NMS Plan provides the following average ongoing internal FTE count figure that a large non-OATS reporting broker-dealer would expect to incur to maintain data reporting systems to be in compliance with Rule 613: 7.41 internal FTEs.¹⁶¹ Based on this information, the Commission believes that it would take a large non-OATS reporting broker-dealer approximately 13,338 burden hours per year¹⁶² to continue to comply with the Rule, for an estimated aggregate ongoing burden of 600,210 hours.¹⁶³

The Commission thus estimates that it would take large non-OATS reporting broker-dealers an aggregate average of approximately 817,560 burden hours per year to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(14,490 initial burden hours amortized over three years = 4,830) + (13,338 ongoing burden hours) x (45 large non-OATS reporting broker-dealers)]. 254,352 of the hours (18,168 x 14) are attributable to the 14 ELP Firms and 563,208 of the hours (18,168 x 31) are attributable to the 31 OMM Firms.

B. Large OATS-Reporting Broker-Dealers

The Commission estimates that 126 broker-dealers, which reported more than 350,000 OATS ROEs between June 15 and July 10, 2015, would strategically decide to either self-report CAT Data or outsource their CAT data reporting functions.¹⁶⁴ To

¹⁶¹ Approach 1 also provided \$3,000,000 in internal FTE costs related to maintenance. The Commission believes the \$3,000,000 in ongoing internal FTE costs is the Participants' estimated cost of the 7.41 FTEs. (7.41 FTEs) x (\$401,440 Participants' assumed annual cost per FTE provided in the CAT NMS Plan) = \$2,974,670. See CAT NMS Plan, *supra* note 4, at n.192. See also *supra* note 106.

¹⁶² 13,338 ongoing burden hours = (7.41 ongoing FTEs to maintain CAT data reporting systems) x (1,800 working hours per year).

¹⁶³ The Commission estimates that 45 large non-OATS reporting broker-dealers would be impacted by this information collection. (45 large non-OATS reporting broker-dealers) x (13,338 burden hours) = 600,210 aggregate ongoing burden hours.

¹⁶⁴ The Commission believes this decision is strategic and discretionary because FINRA data reveals that while many broker-dealers at these activity levels self-report most or all of their regulatory data, other broker-dealers outsource most or all of their regulatory reporting at these activity levels. At lower activity levels, most, but not all, broker-dealers outsource most if not all of their regulatory data reporting. The Commission is cognizant that some broker-dealers reporting fewer than 350,000 OATS ROEs per month can and do opt to self-report their regulatory data. However, based on conversations with broker-dealers, the

conduct its Paperwork Burden Analysis for the 126 broker-dealers, the Commission is relying on the estimates used by the CAT NMS Plan of the expected FTE count that a large OATS-reporting broker-dealer would incur as a result of the implementation of the consolidated audit trail under Approach 1.¹⁶⁵

The CAT NMS Plan provides the following average initial internal FTE count figures that a large OATS-reporting broker-dealer would expect to incur as a result of the implementation of the consolidated audit trail under Approach 1: 14.92 internal FTEs.¹⁶⁶ Based on this information the Commission estimates that the average initial burden to develop and implement the needed systems changes to capture the required information and transmit it to the Central Repository in compliance with the Rule for large OATS-reporting broker-dealers would be approximately 26,856 internal burden hours,¹⁶⁷ for an estimated aggregate initial burden of 3,383,856 hours.¹⁶⁸ Annualized over three years, this would be an average of approximately 8,952 hours per year for each broker-dealer and 1,127,952 per year for all 126 broker-dealers.

Once a large OATS-reporting broker-dealer has established the appropriate systems and processes required for collection and transmission of the required information to the Central Repository, the Commission estimates that the Rule would impose on each broker-dealer ongoing annual burdens associated with, among other things, personnel time to monitor each broker-dealer's reporting of the required data and the maintenance of the systems to report the required data; and implementing changes to trading systems which might result in additional reports to the Central Repository.

Commission believes that most broker-dealers at these activity levels do not have the infrastructure and specialized staff that would be required to report directly to the Central Repository, and electing to self-report would be cost-prohibitive in most but not all cases.

¹⁶⁵ See supra note 157.

¹⁶⁶ Approach 1 also provided \$6,000,000 in initial internal FTE costs. The Commission believes the \$6,000,000 in initial internal FTE costs is the Participants' estimated cost of the 14.92 FTEs. (14.92 FTEs) x (\$401,440 Participants' assumed annual cost per FTE provided in the CAT NMS Plan) = \$5,989,485. See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(ii)(C), at n. 192. See also supra note 106.

¹⁶⁷ 26,856 initial burden hours per large OATS-reporting broker-dealer = (14.92 FTEs for implementation of CAT data reporting systems) x (1,800 working hours per year).

¹⁶⁸ The Commission estimates that 126 large OATS-reporting broker-dealers would be impacted by this information collection. 126 large OATS-reporting broker-dealers x 26,856 burden hours = 3,383,856 initial burden hours to implement data reporting systems.

The CAT NMS Plan provides the following average ongoing internal FTE count figures that a large OATS-reporting broker-dealer would expect to incur to maintain data reporting systems to be in compliance with Rule 613: 10.03 internal FTEs.¹⁶⁹ Based on this information the Commission believes that it would take a large OATS-reporting broker-dealer approximately 18,054 ongoing burden hours per year¹⁷⁰ to continue compliance with the Rule. Therefore, the Commission estimates that the average ongoing annual burden per large OATS-reporting broker-dealer would be approximately 18,054 burden hours, for an estimated aggregate burden of 2,274,804 hours.¹⁷¹

Thus, the Commission estimates that it would take large OATS reporting broker-dealers an average of approximately 3,402,756 burden hours per year to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(26,856 initial burden hours amortized over three years) + (18,054 ongoing burden hours) x (126 large OATS reporting broker-dealers)].

(2) Outsourcing Firms

A. Small OATS-Reporting Broker-Dealers

The Commission estimates that there are 806 broker-dealers that report fewer than 350,000 OATS ROEs monthly. The Commission believes that these broker-dealers generally outsource their regulatory reporting obligations because during the period June 15 – July 10, 2015, approximately 88.9% of their 350,000 OATS ROEs were reported through service bureaus, with 730 of these broker-dealers reporting more than 99% of their OATS ROEs through one or more service bureaus.¹⁷²

Firms that outsource their regulatory data reporting still face internal staffing burdens associated with this activity. These employees perform activities such as answering inquiries from their service bureaus, and investigating reporting exceptions.

¹⁶⁹ Approach 1 also provided \$4,000,000 in internal FTE costs related to maintenance. The Commission believes the \$4,000,000 in ongoing internal FTE costs is the Participants' estimated cost of the 10.03 FTEs. (10.03 FTEs) x (\$401,440 Participants' assumed annual cost per FTE provided in the CAT NMS Plan) = \$4,026,443. See CAT NMS Plan, *supra* note 4, at Appendix C, Section B.7(b)(ii)(C), at n. 192. See also *supra* note 106.

¹⁷⁰ 18,054 ongoing burden hours = (10.03 ongoing FTEs for maintenance of CAT data reporting systems) x (1,800 working hours per year).

¹⁷¹ The Commission estimates that 126 large OATS-reporting broker-dealers would be impacted by this information collection. (126 large OATS-reporting broker-dealers) x (18,054 burden hours) = 2,274,804 aggregate ongoing burden hours.

¹⁷² Because of the extensive use of service bureaus in these categories of broker-dealers, the Commission assumes that these broker-dealers are likely to use service bureaus to accomplish their CAT data reporting. See *supra* note 164.

Based on conversations with market participants, the Commission estimates that these firms currently have 0.5 full-time employees devoted to these activities. The Commission estimates that these firms would need to hire one additional full-time employee for one year to implement CAT reporting requirements.

Based on this information, the Commission estimates that the average initial burden to implement the needed systems changes to capture the required information and transmit it to the Central Repository in compliance with the CAT NMS Plan for small OATS-reporting broker-dealers would be approximately 1,800 burden hours.¹⁷³ The Commission believes the burden hours would be associated with work performed by internal technology, compliance and legal staff in connection with the implementation of CAT Data reporting. Therefore, the Commission estimates that the average one-time initial burden per small OATS-reporting broker-dealer would be 1,800 burden hours, for an estimated aggregate initial burden of 1,450,800 hours.¹⁷⁴ Annualized over three years, this would be an average burden of approximately 600 hours per year for each broker-dealer and 483,000 for all broker-dealers.

Small OATS-reporting broker-dealers that outsource their regulatory data reporting would likely face internal staffing burdens and external costs associated with ongoing activity, such as maintaining any systems that transmit data to their service providers. The Commission estimates these firms would need 0.75 FTEs on an ongoing basis to maintain CAT reporting.

Based on this information, the Commission believes that it would take a small OATS-reporting broker-dealer approximately 1,350 ongoing burden hours per year¹⁷⁵ to continue compliance with the Rule. The Commission believes the burden hours would be associated with work performed by internal technology, compliance and legal staff in connection with the ongoing operation of CAT Data reporting. Therefore, the Commission estimates that the average ongoing annual burden per small OATS-reporting

¹⁷³ This estimate assumes that, based on the expected FTE count provided, a small OATS-reporting broker-dealer would have to hire 1 new FTE for implementation. The salary attributed to the 1 FTE would be $(1 \times \$463,050 \text{ FTE cost}) = \$463,050$ per year. To determine the number of burden hours to be incurred by the current 0.5 FTE for implementation, multiply 0.5 FTE by 1,800 hours per year = 900 initial burden hours.

¹⁷⁴ The Commission estimates that 806 small OATS-reporting broker-dealers would be impacted by this information collection. $(806 \text{ small OATS-reporting broker-dealers} \times 1,800 \text{ burden hours}) = 1,450,800$ aggregate initial burden hours.

¹⁷⁵ $1,350$ ongoing burden hours = $(0.75 \text{ FTE for maintenance of CAT Data reporting systems}) \times (1,800 \text{ working hours per year})$.

broker-dealer would be approximately 1,350 hours, for an estimated aggregate ongoing burden of 1,088,100 hours.¹⁷⁶

The Commission thus estimates that it would take small OATS-reporting broker-dealers an average total of approximately 1,571,700 burden hours per year to implement the needed systems changes to capture the required information and transmit it to the Central Repository and to continue compliance with Rule 613 [(1,800 initial burden hours amortized over three years) + (1,350 ongoing burden hours) x (806 small OATS-reporting broker-dealers)].

B. Small Non-OATS-Reporting Broker-Dealers

In addition to firms that currently report to OATS, the Commission estimates there are 499 broker-dealers that are currently exempt from OATS reporting rules due to firm size, or excluded because all of their order flow is routed to a single OATS reporter, such as a clearing firm, that would incur CAT reporting obligations.¹⁷⁷ As noted above, this is a reduction of 300 broker-dealers based on the reduction of the overall number of broker-dealers with CAT reporting obligations and Commission information and belief.¹⁷⁸ A further 24 broker-dealers have Participant memberships only with one Participant;¹⁷⁹ the Commission believes this group is comprised mostly of floor brokers and further believes these firms would experience CAT implementation and ongoing reporting costs similar in magnitude to small equity broker-dealers that currently have no OATS reporting responsibilities.

The Commission assumes these broker-dealers would have very low levels of CAT reporting, similar to those of the lowest activity firms that currently report to OATS. Because these firms have more limited data reporting requirements than other firms, the

¹⁷⁶ The Commission estimates that 806 small OATS-reporting broker-dealers would be impacted by this information collection. (806 small OATS-reporting broker-dealers x 1,350 burden hours) = 1,088,100 aggregate ongoing burden hours to ensure ongoing compliance with Rule 613.

¹⁷⁷ The Commission notes that Rule 613 does not exclude from data reporting obligations Participant members that quote or execute transactions in NMS Securities and Listed Options that route to a single market participant. See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(ii)(B)(2).

¹⁷⁸ See supra note 65.

¹⁷⁹ This group comprises 24 broker-dealers that have SRO memberships only with CBOE; the Commission believes this group is comprised primarily of CBOE floor brokers and, further, believes these firms would incur CAT implementation and ongoing reporting costs similar in magnitude to small equity broker-dealers that currently have no OATS reporting responsibilities because they would face similar tasks to implement and maintain CAT reporting.

Commission assumes these firms currently have only 0.1 full-time employees currently dedicated to regulatory data reporting activities. The Commission assumes these firms would require 2 full-time employees for one year to implement CAT.

Based on this information, the Commission estimates that the average initial burden to develop and implement the needed systems changes to capture the required information and transmit it to the Central Repository in compliance with the Rule for small, non-OATS-reporting broker-dealers would be approximately 3,600 initial burden hours per broker-dealer.¹⁸⁰ The Commission believes the burden hours would be associated with work performed by internal technology, compliance and legal staff in connection with the implementation of CAT Data reporting. Therefore, the Commission estimates that the average one-time initial burden per small non-OATS-reporting broker-dealer would be 3,600 burden hours, for an estimated aggregate initial burden of 1,882,800 hours.¹⁸¹ Annualized over three years, this would be an average burden of 1,200 hours per year for each broker-dealer and 627,600 per year hours for all broker-dealers. The estimated aggregate initial burden has fallen because of the reduced number of estimated small non-OATS reporting broker-dealers (from 823 to 523).

Small non-OATS-reporting broker-dealers that outsource their regulatory data reporting would likely face internal staffing burdens associated with ongoing activity, such as maintaining any systems that transmit data to their service providers. Based on conversations with market participants, the Commission estimates these firms would need 0.75 full-time employees annually to maintain CAT reporting.

Based on this information the Commission believes that it would take a small non-OATS-reporting broker-dealer 1,350 ongoing burden hours per year¹⁸² to continue compliance with the Rule. Therefore, the Commission estimates that the average ongoing annual burden per small non-OATS-reporting broker-dealer would be approximately 1,350 hours, for an estimated aggregate ongoing burden of 706,050 hours.¹⁸³ The estimated aggregate ongoing burden has fallen because of the reduced number of estimated small non-OATS reporting broker-dealers (523 from 823).

¹⁸⁰ 3,600 initial burden hours = (2 FTEs for implementation of CAT Data reporting systems) x (1,800 working hours per year).

¹⁸¹ The Commission estimates that 523 small non-OATS-reporting broker-dealers would be impacted by this information collection. (523 small non-OATS-reporting broker-dealers x 3,600 burden hours) = 1,882,800 aggregate initial burden hours.

¹⁸² 1,350 ongoing burden hours = (0.75 FTEs for maintenance of CAT data reporting systems) x (1,800 working hours per year).

¹⁸³ The Commission estimates that 523 small non-OATS-reporting broker-dealers would be impacted by this information collection. (523 small non-OATS-reporting broker-dealers x 1,350 burden hours) = 706,050 aggregate ongoing burden hours to ensure ongoing compliance with Rule 613.

The Commission thus estimates that it would take small non-OATS-reporting broker-dealers an aggregate average of approximately 1,333,650 burden hours per year to implement the needed systems changes to capture the required information and transmit it to the Central Repository and to continue compliance with Rule 613 [(3,600 initial burden hours amortized over three years) + (1,350 ongoing burden hours) x (523 small non-OATS- reporting broker-dealers)]. The Commission notes that there is a decrease in the overall estimated burden due to the decrease in the estimated number of small non-OATS-reporting broker-dealers (523 from 823).

C. Completed Information Collections Requirements

As discussed above,¹⁸⁴ the Commission believes that three information collections requirements have been satisfied, specifically (1) a document outlining how the Participants could incorporate into the consolidated audit trail information regarding certain products that are not NMS securities;¹⁸⁵ (2) a one-time assessment of the clock synchronization standards in the Plan before reporting begins for Industry Members, which assessment shall take into account the diversity of CAT Reporters and systems;¹⁸⁶ and (3) a one-time report that discusses the Participants’ assessment of implementing coordinated surveillance.¹⁸⁷ These one-time information collections have been completed by the Participants, so the Commission believes that the annual burden for each of the information collections is 0 hours.

Summary of Hourly Burdens										
Name of Information Collection	Type of Burden	[A.] Number of Entities Impacted	[B.] Annual Responses per Entity	[C.] Initial Burden per Entity per Response	[D.] Initial Burden Annualized per Entity per Response [= C * 3 years]	[E.] Ongoing Burden per Entity per Response	[F.] Annual Burden Per Entity per Response [= D + E]	[G.] Total Annual Burden Per Entity [= (D + E) * B]	[H.] Total Industry Burden [= G * A]	Small Business Entities Affected
Central Repository	Recordkeeping	24	1	0	0	600	600	600	14,400	0
Data Collection and Reporting (Participants)	Third Party Disclosure	24	1	0	0	1,629	1,629	1,629	39,096	0
Surveillance	Recordkeeping	24	1	3906	1302	14,891.4	16,193.4	16,193.4	388,642	0

¹⁸⁴ See supra Section I.A.

¹⁸⁵ See 17 CFR 242.613(i). See also “One-Time Written Assessments,” Consolidated Audit Trail, LLC at: <https://www.catnmsplan.com/one-time-written-assessments/index.html>.

¹⁸⁶ See CAT NMS Plan Order, supra note 6, at 84940.

¹⁸⁷ Id. at 84940–84941.

Name of Information Collection	Type of Burden	[A.] Number of Entities Impacted	[B.] Annual Responses per Entity	[C.] Initial Burden per Entity per Response	[D.] Initial Burden Annualized per Entity per Response [= C ÷ 3 years]	[E.] Ongoing Burden per Entity per Response	[F.] Annual Burden Per Entity per Response [= D + E]	[G.] Total Annual Burden Per Entity [= (D + E) * B]	[H.] Total Industry Burden [= G * A]	Small Business Entities Affected
Written Assessment of Operation of CAT	Reporting	24	1	0	0	150	150	150	3600	0
Assessment of Industry Member Bulk Access to Reporter Data	Reporting	24	1	15	5	0	5	5	120	0
Assessment of Errors in Customer Information Fields	Reporting	24	1	24	8	0	8	8	192	0
Report on Impact of Tiered Fees on Market Liquidity	Reporting	24	1	18.75	6.25	0	6.25	6.25	150	0
Assessment of Material Systems Change on Error Rate	Reporting	24	4	0	0	5.21	5.21	20.84	500	0
Background Checks	Disclosure	24	1	17.75	5.92	4.23	10.15	10.15	244	0
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers) - ELPs	Third Party Disclosure	14	1	14,490	4,830	13,338	18,168	18,168	254,352	0
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers) – Options Market Makers	Third Party Disclosure	31	1	14,490	4,830	13,338	18,168	18,168	563,208	0
Data Collection and Reporting (Large OATS Reporting Broker-Dealers)	Third Party Disclosure	126	1	26,856	8,952	18,054	27,006	27,006	3,402,756	0
Data Collection and Reporting (Small OATS Reporting Broker-Dealers)	Third Party Disclosure	806	1	1,800	600	1,350	1,950	1,950	1,571,700	Estimated 402 ¹⁸⁸

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The Commission believes that the 925 Commission-registered broker-dealers (as of 2019) that are considered “small entities” could be impacted by two categories of information collection: “data collection and reporting (small OATS-reporting broker-dealers)” and “data collection and reporting (non-OATS reporting broker-dealers).” The Commission estimates that the 523 respondents affected by the “data collection and reporting (non-OATS reporting broker-dealers)” would all be

Name of Information Collection	Type of Burden	[A.] Number of Entities Impacted	[B.] Annual Responses per Entity	[C.] Initial Burden per Entity per Response	[D.] Initial Burden Annualized per Entity per Response [= C + 3 years]	[E.] Ongoing Burden per Entity per Response	[F.] Annual Burden Per Entity per Response [= D + E]	[G.] Total Annual Burden Per Entity [= (D + E) * B]	[H.] Total Industry Burden [= G * A]	Small Business Entities Affected
Data Collection and Reporting (Small Non-OATS Reporting Broker-Dealers)	Third Party Disclosure	523	1	3,600	1,200	1,350	2,550	2,550	1,333,650	Estimated 523 ¹⁸⁹
Review of Clock Synchronization Standards	Reporting	24	0	0	0	0	0	0	0	0
Coordinated Surveillance Report	Reporting	24	0	0	0	0	0	0	0	0
Document on Expansion to Other Securities	Reporting	24	0	0	0	0	0	0	0	0
TOTAL HOURLY BURDEN FOR ALL RESPONDENTS									7,572,610	

13. Costs to Respondents

The Commission estimates that the information collection requirements of Rule 613 will apply to 1,524 respondents who will incur an average aggregate of approximately \$463,322,593 in costs per year to comply with the requirements. The cost burden is calculated as discussed below.

A. Costs to National Securities Exchanges and National Securities Associations

considered small entities as these firms are currently exempt from OATS reporting rules due to firm size, or are excluded because all of their order flow is routed to a single OATS reporter, or are floor brokers with an SRO membership with a single Participant. The Commission believes these broker-dealers would have very low levels of CAT reporting and would outsource CAT data collection and reporting to a third party, such as a service bureau. The Commission estimates that the remaining 402 broker-dealers (of the estimated 925 small entity broker-dealers) would be impacted by the information collection “data collection and reporting (small OATS-reporting broker-dealers).” These firms would not be small enough to be exempt from OATS reporting, and the Commission believes that they would have low levels of OATS reporting and would likely outsource CAT data collection and reporting to a service bureau.

¹⁸⁹ See, supra note 188.

a. Central Repository

The Commission previously estimated what the Participants would collectively spend on external public relations, legal and consulting costs associated with the building of the Central Repository and the selection of the Plan Processor for the Central Repository. In addition, the Commission previously estimated the Participants collective costs over the 12-month period after the effectiveness of the CAT NMS Plan within which the Participants were required to select an initial Plan Processor and begin reporting to the Central Repository. However, as noted above, the Participants have selected a Plan Processor and begun reporting to the consolidated audit trail. The Commission believes it is appropriate to now only consider the ongoing costs associated with ongoing costs for operating and maintaining the Central Repository.

The Commission believes that there will be ongoing costs for operating and maintaining the Central Repository, including the cost of systems and connectivity upgrades or changes necessary to receive, consolidate, and store the reported order and execution information from Participants and their members; the costs to store data, and make it available to regulators, in a uniform electronic format, and in a form in which all events pertaining to the same originating order are linked together in a manner that ensures timely and accurate retrieval of the information; the cost, including storage costs, of collecting and maintaining the NBBO and transaction data in a format compatible with the order and event information collected pursuant to the Rule; the cost of monitoring the required validation parameters, which would allow the Central Repository to automatically check the accuracy and completeness of the data submitted and reject data not conforming to these parameters consistent with the requirements of the Rule; and the cost of compensating the CCO. The CAT NMS Plan provides that the Plan Processor would be responsible for the ongoing operations of the Central Repository.¹⁹⁰ In addition, the CAT NMS Plan states that the Participants would incur costs for public relations, legal, and consulting costs associated with maintaining the CAT upon approval of the CAT NMS Plan.¹⁹¹ The Commission estimates that the Participants will collectively spend \$800,000 annually on external public relations, legal and consulting costs associated with the continued management of the Central Repository, or \$33,333.33 per Participant.¹⁹²

¹⁹⁰ See CAT NMS Plan, supra note 4, at Section 6.1.

¹⁹¹ See id. at Appendix C, Section B.7(b)(iii).

¹⁹² The Commission is basing this external cost estimate on the public relations, legal and consulting external cost estimate provided in the CAT NMS Plan associated with the preparation of the CAT NMS Plan (which the Participants consider “reasonably associated with creating, implementing, and maintaining the CAT upon the Commission’s adoption of the CAT NMS Plan”). See id. (stating “the Participants have incurred public relations, legal and consulting costs in preparation of the CAT NMS Plan. The Participants estimate the costs of these services to be \$8,800,000”). \$2,400,000 for all Participants over 12 months = (\$8,800,000/44 months between the adoption of Rule 613 and the filing of the

While the CAT NMS Plan includes estimates from six bidders for the annual ongoing costs to the Participants to operate the Central Repository,¹⁹³ the Participants provided updated cost estimates to reflect the estimates of three final shortlisted bidders which were attempting to be the Plan Processor.¹⁹⁴ Using the revised estimates, the Commission estimates that the annual ongoing cost to the Participants to compensate the Plan Processor for building, operating and maintaining the Central Repository would be an aggregate ongoing external cost of approximately \$55 million,¹⁹⁵ or \$2,291,666.67 per Participant.¹⁹⁶ Therefore, the Commission estimates that each Participant would incur ongoing annual external costs of approximately \$2,325,000¹⁹⁷ to maintain the Central

CAT NMS Plan) x (12 months). Because the Central Repository will have already been created, the Commission believes it is reasonable to assume that the Participants will have a lesser need for public relations, legal and consulting services. The Commission is estimating that the Participants will incur one-third of the external cost associated with development and implementation of the Central Repository to maintain the Central Repository. $\$800,000 = (0.333) \times (\$2,400,000)$. $(\$800,000 / 24 \text{ Participants}) = \$33,333.33$ per Participant over 12 months.

¹⁹³ See id. at Appendix C, Section B.7(b)(i)(B).

¹⁹⁴ See Letter to Brent J. Fields, Secretary, Commission, from Participants, dated October 7, 2016, at 14–15.

¹⁹⁵ Id.

¹⁹⁶ The Participants provided a range of Bidder estimates. See id. For purposes of this Paperwork Burden Act analysis, the Commission is using the maximum operation and maintenance cost estimate. $\$2,291,666.67 = \$55,000,000 / 24$ Participants. The Commission previously noted several uncertainties that may affect the Central Repository cost estimates, including (1) that the Participants had not yet selected a Plan Processor and the shortlisted bidders have submitted a wide range of cost estimates for building and operating the Central Repository; (2) the bids submitted by the shortlisted bidders may not be final because they may be revised before the final selection of the CAT Processor; and (3) neither the bidders nor the Commission can anticipate the evolution of technology and market activity with precision, as improvements in available technology may allow the Central Repository to be built and operated at a lower cost than is currently anticipated, but if levels of anticipated market activity are materially underestimated, the capacity of the Central Repository may need to be increased, resulting in an increase in costs. The Commission believes that using the maximum operation and maintenance cost estimate is appropriate even though the CAT NMS Plan Processor has been selected, because the Participants have not publicly disclosed the actual ongoing costs of operating and maintaining the CAT NMS Plan Processor.

¹⁹⁷ $\$2,325,000$ for each Participant to maintain the Central Repository = $(\$2,291,666.67 \text{ per Participant in ongoing annual costs to maintain the Central$

Repository, or aggregate ongoing annual external costs across all Participants of \$55,800,000.¹⁹⁸

b. Data Collection and Reporting

The CAT NMS Plan provides estimated costs for hardware and software, FTE costs, and third-party providers to be incurred by the Participants to report CAT Data.¹⁹⁹ For these estimates, the Commission is relying on the cost data provided by the Participants because it believes that the Plan’s estimates for Participants to report CAT Data are reliable since all of the Participants provided cost estimates, and most Participants have experience collecting audit trail data, as well as knowledge of both the requirements of Rule 613 as well as their current business practices. As noted above, the Participants have begun reporting CAT Data and thus the Commission believes it is appropriate to only consider ongoing costs related to data collection and reporting.

Because the Participants have established the appropriate systems and processes required for collection and transmission of the required information to the Central Repository, the Commission estimates that Rule 613 would impose on each Participant ongoing annual burdens associated with, among other things, personnel time to monitor each Participant’s reporting of the required data and the maintenance of the systems to report the required data; and implementing changes to trading systems that might result in additional reports to the Central Repository. The CAT NMS Plan provides the following average aggregate costs that the Participants would expect to incur to maintain data reporting systems to be in compliance with Rule 613: \$720,000 in annual third-party legal, consulting, and other costs²⁰⁰ and \$14,700,000 total annual costs.²⁰¹

Repository) + (\$33,333.33 per Participant in ongoing annual public relations, legal and consulting costs associated with the maintenance of the Central Repository).

¹⁹⁸ \$55,800,000 for all of the Participants to maintain the Central Repository = (\$2,325,000 per Participant to compensate the Plan Processor and for external public relations, legal and consulting costs associated with the maintenance of the Central Repository) x (24 Participants).

¹⁹⁹ Third-party provider costs are generally legal and consulting costs, but may include other outsourcing. The template used by respondents is available at <http://catnmsplan.com/PastEvents/> under the Section titled “6/23/14” at the “Cost Study Working Template” link.

²⁰⁰ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2). The CAT NMS Plan did not identify the other costs.

²⁰¹ Of the \$14,700,000 in aggregate total annual costs, \$8,020,000 is identified (subtotal of FTE costs and outsourcing), but the remaining \$6,680,000 is not identified in the CAT NMS Plan. The Commission believes that this amount may be attributed to hardware costs because the Participants have not provided any hardware costs associated with data reporting elsewhere and the Commission

Based on estimates provided in the CAT NMS Plan, the Commission estimates that it would cost, on average, approximately \$37,894.74 per Participant in ongoing third-party legal and consulting and other costs²⁰² and \$389,473.68 per Participant in total ongoing external costs.²⁰³ Therefore, the Commission estimates that the annual aggregate ongoing external cost for all Participants would be approximately \$9,347,368.32.²⁰⁴

The Commission estimates that the Participants would incur an aggregate, annual external cost of approximately \$9,347,368 to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(\$389,473.68 in annual, ongoing external costs) x (24 Participants) = \$9,347,368.32 rounded down to \$9,347,368]. This estimate has changed because of the increased number of Participants and because the initial costs have been completed.

c. Collection and Retention of NBBO, Last Sale Data and Transaction Reports

Rule 613(e)(7) provides that the CAT NMS Plan must require the Central Repository to collect and retain on a current and continuous basis NBBO information for each NMS security, transaction reports reported pursuant to an effective transaction reporting plan, and Last Sale Reports reported pursuant to the OPRA Plan.²⁰⁵ Additionally, the CAT NMS Plan must require the Central Repository to maintain this data in a format compatible with the order and event information consolidated and stored

believes that the Participants will likely incur costs to upgrade their hardware to report data to the Central Repository.

²⁰² (\$720,000 in annual third party costs) / (19 Participants) = \$37,894.73 per Participant in anticipated annual third party costs.

²⁰³ To determine the total external annual cost per Participant, the Commission subtracted the anticipated annual FTE internal compliance cost estimates for the Participants as provided in the Plan (see notes 104 through 106 and accompanying text) from the total aggregate annual costs and divided the remainder by 19 Participants, which is the number of Participants included in the initial cost estimates provided by Participants. (\$14,700,000 total aggregate annual cost to Participants) – (\$7,300,000 annual FTE cost to Participants) = \$7,400,000 (which includes the \$720,000 in total anticipated annual third party costs). (\$7,400,000) / 19 Participants = \$389,473.68 in annual external costs per Participant. See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(1) for the Participants' anticipated maintenance costs associated with regulatory reporting to the Central Repository.

²⁰⁴ \$9,347,368.32 = (\$389,473.68 in total annual external costs) x (24 Participants).

²⁰⁵ See 17 CFR 242.613(e)(7).

pursuant to Rule 613(c)(7).²⁰⁶ Further, the CAT NMS Plan must require the Central Repository to retain the information collected pursuant to paragraphs (c)(7) and (e)(7) of Rule 613 for a period of not less than five years in a convenient and usable uniform electronic format that is directly available and searchable electronically without any manual intervention.²⁰⁷ The Commission notes that the CAT NMS Plan includes these data as “SIP Data” to be collected by the Central Repository.²⁰⁸ The Commission believes the burden associated with SIP Data is included in the burden to the Participants associated with the implementation and maintenance of the Central Repository.

d. Surveillance

Rule 613(f) provides that the CAT NMS Plan must require that every national securities exchange and national securities association develop and implement a surveillance system, or enhance existing surveillance systems, reasonably designed to make use of the consolidated information contained in the consolidated audit trail. Rule 613(a)(3)(iv) provides that the CAT NMS Plan must require that the surveillance systems be implemented within fourteen months after effectiveness of the CAT NMS Plan.

The CAT NMS Plan states that the estimated total cost to the Participants to implement surveillance programs within the Central Repository is \$23,200,000.²⁰⁹ This amount includes legal, consulting, and other costs of \$560,000, as well as \$17,500,000 in FTE internal compliance costs for operational, technical/development, and compliance staff to be engaged in the creation of surveillance programs.²¹⁰

Based on the estimates provided in the CAT NMS Plan, the Commission estimates that each Participant would, on average, incur an initial one time external cost

²⁰⁶ Id.

²⁰⁷ See 17 CFR 242.613(e)(8).

²⁰⁸ See CAT NMS Plan, supra note 4, at Section 6.5(a)(ii).

²⁰⁹ See id. at Appendix C, Section B.7(b)(iii)(B)(2).

²¹⁰ Id. For purposes of the Paperwork Reduction Act analysis, the Commission is treating the FTE cost as an internal compliance burden. See text accompanying notes 116–118, supra. The Commission also notes that based upon the data provided by the Participants, the source of the remaining \$5,140,000 in initial costs to implement new or enhanced surveillance systems is unspecified. The Commission believes that this amount may be attributed to hardware costs because the Participants have not provided any hardware costs associated with surveillance elsewhere and the Commission believes that the Participants will likely incur costs to implement new or enhanced surveillance systems reasonably designed to make use of the consolidated audit trail data.

of approximately \$29,473.68²¹¹ for outsourced legal, consulting and other costs in order to implement new or enhanced surveillance systems, and a total of \$300,000 in all one time initial external costs,²¹² for an aggregate one-time initial external cost of \$7,200,000 across the 24 Participants to implement new or enhanced surveillance systems.²¹³ Annualized over three years this would be an average burden of approximately \$100,000 per year for each Participant and \$2,400,000 per year for all Participants.

The CAT NMS Plan states that the estimated total ongoing annual cost associated with the maintenance of surveillance programs for the Participants is \$87,700,000.²¹⁴ This amount includes annual legal, consulting, and other costs of \$1,000,000, as well as \$66,700,000 in annual FTE internal compliance costs for internal operational, technical/development, and compliance staff to be engaged in the maintenance of surveillance programs.²¹⁵ Based on the estimates provided in the CAT NMS Plan,²¹⁶ the Commission estimates that each Participant would, on average, incur an annual ongoing external cost of approximately \$52,631.58²¹⁷ for outsourced legal, consulting and other costs in order to maintain the new or enhanced surveillance systems, and a total estimated

²¹¹ $\$29,473.68 = \$560,000 / 19$ Participants (the number of Participants in Participants Study).

²¹² $(\$23,200,000$ in total initial surveillance costs - $\$17,500,000$ in FTE costs) = $\$5.7$ million in aggregate one-time initial external costs (which includes the $\$560,000$ in initial external third party costs). $\$5.7$ million / (19 Participants, the number of Participants in the Participants Study) = $\$300,000$.

²¹³ $\$7,200,000 = \$300,000 \times 24$ Participants.

²¹⁴ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

²¹⁵ Id. For purposes of the Paperwork Reduction Act analysis, the Commission is treating the FTE cost as an internal burden. See text accompanying notes 120–122, supra. The Commission also notes that based upon the data provided by the Participants, the source of the remaining $\$20,000,000$ in ongoing costs to maintain the new or enhanced surveillance systems is unspecified. The Commission believes that this amount may be attributed to hardware costs because the Participants have not provided any hardware costs associated with surveillance elsewhere and the Commission believes that the Participants would likely incur costs associated with maintaining the new or enhanced surveillance systems.

²¹⁶ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

²¹⁷ $\$52,631.58 = \$1,000,000$ for ongoing legal, consulting and other costs associated with maintenance of surveillance programs / 19 Participants (the number of Participants in Participants Study).

ongoing external cost of \$1,105,263.16,²¹⁸ for an estimated aggregate ongoing external cost of \$26,526,315.84 across the 24 Participants to maintain the surveillance systems.²¹⁹

The Commission estimates that the Participants would, therefore, incur an average aggregate, annual external cost of approximately \$28,926,316 to develop, implement (or enhance existing) surveillance systems reasonably designed to make use of the consolidated information contained in the consolidated audit trail, and to maintain such systems [(\$300,000 in initial external costs amortized over three years = \$100,000 per year) + (\$1,105,263.16 in annual, ongoing external costs) x (24 Participants) = \$28,526,315.84 rounded up to \$28,526,316.]. This burden has changed due to the increased number of Participants (24 Participants instead of 21).

e. Written Assessment of Operation of the Consolidated Audit Trail

Rule 613(b)(6) provides that the CAT NMS Plan must require the Participants to provide the Commission a written assessment of the CAT's operation at least every two years, once the CAT NMS Plan is effective.²²⁰ The assessment must address, at a minimum, with respect to the consolidated audit trail: (i) an evaluation of its performance; (ii) a detailed plan for any potential improvements to its performance; (iii) an estimate of the costs associated with any such potential improvements; and (iv) an estimated implementation timeline for any such potential improvements, if applicable.²²¹ Thus, the Participants must, among other things, undertake an analysis of the consolidated audit trail's technological and computer system performance.

The CAT NMS Plan states that the CCO would oversee the assessment required by Rule 613(b)(6), and would allow the Participants to review and comment on the assessment before it is submitted to the Commission.²²² The CCO would be an employee of the Plan Processor and would be compensated by the Plan Processor.²²³ The Commission assumes that the overall cost to the Participants to implement and maintain the Central Repository includes both the compensation for the Plan Processor as well as its employees for the implementation and maintenance of the Central Repository.

²¹⁸ (\$87,700,000 in total ongoing surveillance costs - \$66,700,000 in ongoing FTE costs) = \$21,000,000 in total ongoing external costs (which includes \$1,000,000 in total ongoing external third party costs). \$21,000,000 / 19 Participants (the number of Participants in Participants Study) = \$1,105,263.16.

²¹⁹ \$26,526,315.84 = \$1,105,263.16 x 24 Participants.

²²⁰ 17 CFR 242.613(b)(6).

²²¹ Id.

²²² See CAT NMS Plan, supra note 4, at Section 6.6.

²²³ Id. at Section 6.2(a).

In addition, Section 6.6 of the Plan changes the frequency of the assessment contemplated by Rule 613(b)(6) from biannual to annual and provides further detail regarding elements of the written assessment to be conducted by the Participants.²²⁴ Section 6.6 of the Plan as filed also requires the Participants to provide an estimate of the costs associated with any potential improvements to the performance of the CAT, including an assessment of the potential impact on competition, efficiency and capital formation. Section 6.6 of the Plan also requires the annual assessment to consider the benefits of potential improvements to the CAT, including to investor protection.²²⁵

The Commission estimates that on average, each Participant would outsource 2.5 hours of legal time annually to assist in the review of the assessment, for an ongoing annual external cost of approximately \$1,000.²²⁶ Therefore, the Commission estimates that the ongoing annual external cost for outsourced legal counsel would be \$1,000 per Participant per year, for an estimated aggregate annual external cost of \$24,000.²²⁷

The Commission estimates that the Participants would incur an aggregate, annualized external cost of approximately \$24,000 to review the written assessment [(\$1,000 in annual, ongoing external costs) x (24 Participants)]. This has increased due to the increased number of Plan Participants (24 Participants instead of 21 Participants).

e. Independent Audit of Expenses Incurred Prior to Effective Date

²²⁴ Specifically, Section 6.6 of the Plan states that the Participants' annual written assessment must also include: (1) an evaluation of the information security program of the CAT to ensure that the program is consistent with the highest industry standards for protection of data; (2) an evaluation of potential technological upgrades based upon a review of technological developments over the preceding year, drawing on necessary technological expertise, whether internal or external; (3) an assessment of efforts to reduce the time to restore and recover CAT Data at a back-up site; (4) an assessment of how the Plan Processor and SROs are monitoring Error Rates and addresses the application of Error Rates based on product, data element or other criteria; (5) a copy of the evaluation required by Section 6.8(c) of the Plan as to whether industry standards have evolved such that: (i) the clock synchronization standard in Section 6.8(a) should be shortened; or (ii) the required timestamp in Section 6.8(b) should be in finer increments; and (6) an assessment of whether any data elements should be added, deleted or changed. See CAT NMS Plan Order, supra note 6, at Section IV.H.

²²⁵ Id.

²²⁶ \$1,000 = (\$400 per hour rate for outside legal services) x (2.5 hours).

²²⁷ \$24,000 = 24 Participants x (\$400 per hour rate for outside legal services) x (2.5 hours).

Section 6.6(a)(i) of the CAT NMS Plan requires the Participants to provide to the Commission an independent one-time audit of fees, costs and expenses incurred by the Participants on behalf of the Company, prior to the Effective Date, in connection with the creation and implementation of the CAT, at least one month prior to submitting any rule filing to establish initial fees to the Commission.

The Commission estimates that each Participant would incur an initial, one-time external cost for the audit of \$208.33.²²⁸ The Commission estimates that the aggregate initial, one-time external cost of the audit for all Participants would be approximately \$5,000.²²⁹ Annualized over three years, the burden would be approximately \$69.44 per year for each Participant and approximately \$1,666.56 per year for all Participants.

The Commission thus estimates that the Participants would incur an average aggregate, external cost of approximately \$1,667 per year to provide to the Commission the independent audit of fees, costs and expenses incurred by the Participants on behalf of the Company, prior to the Effective Date, in connection with the creation and implementation of the CAT [(\$208.33 in initial external costs amortized over three years) x (24 Participants) = \$1,666.56 rounded up to \$1,667]. The individual Participant costs have increased because the number of Participants have increased (from 21 to 24 Participants) while the estimated aggregate one-time external cost has remained the same (\$5,000).

f. Assessment of Industry Member Bulk Access to Reported Data

Section 6.6(a)(iv) of the CAT NMS Plan requires the Participants to provide a written report discussing the feasibility, benefits, and risks of allowing an Industry Member to bulk download the Raw Data it submitted to the Central Repository, within 24 months of effectiveness of the Plan.

The Commission estimates that on average, each Participant would outsource five hours of legal time to assist in the preparation and review of the assessment, for an initial,

²²⁸ The Commission estimates that the cost of the audit would be an aggregate, external cost of \$5,000. The CAT NMS Plan Order states that to arrive at this estimate, the Commission relied on an industry source for the costs of an audit per dollar of revenue, and assumed that the audit cost per unit of revenue would be comparable to the audit cost per unit of development costs, which were approximately \$8.8 million. The Commission used an industry estimate of \$479 in audit costs per \$1 million in revenue. $(\$8,800,000 / \$1,000,000) = \$8.80$ per \$1 million in revenue. $(\$8.80) \times (\$479 \text{ in audit costs}) = \$4,215$ for the audit. In the CAT NMS Plan Order, the Commission rounded this amount up to \$5,000. See CAT NMS Plan Order, supra note 6, at 84856, n.2494. $\$5,000 / 24 \text{ Participants} = \208.33 per Participant for the independent audit.

²²⁹ Id.

one-time external cost of approximately \$2,000.²³⁰ Therefore, the Commission estimates that each Participant would incur an initial one-time external cost of \$2,000 for outsourced legal counsel per Participant (or approximately \$666.67 a year per Participant when annualized over three years), for an estimated aggregate initial external cost of \$48,000 for all Participants (or approximately \$16,000 per year for all Participants when annualized over three years).²³¹

The Commission estimates that the Participants would incur an aggregate, annualized external cost of approximately \$16,000 to submit the written report [(\$2,000 in initial external costs amortized over three years) x (24 Participants) = \$16,000.08 rounded down to \$16,000]. This estimated cost has increased due to the increased number of Participants (24 Participants instead of 21 Participants).

g. Assessment of Errors in Customer Information Fields

Section 6.6(a)(v) of the CAT NMS Plan requires the Participants to submit a written assessment of errors in the customer information submitted to the Central Repository and whether to prioritize the correction of certain data fields over others, within 36 months of effectiveness of the Plan.

The Commission estimates that on average, each Participant would outsource 1.25 hours of legal time to assist in the review of the assessment, for an initial, one-time external cost of approximately \$500.²³² Therefore, the Commission estimates that each Participant would incur \$500 of initial, one-time external costs for outsourced legal counsel per Participant (approximately \$166.67 a year per Participant when annualized over three years), for an estimated aggregate initial, one-time external cost of

²³⁰ \$2,000 = (\$400 per hour rate for outside legal services) x (5 hours).

²³¹ \$48,000 = (24 Participants) x (\$400 per hour rate for outside legal services) x (5 hours). \$48,000 ÷ 3 = \$16,000.

²³² The Commission calculated the total estimated external cost based on the revised burden hour estimate for the written assessment of the operation of the CAT. See CAT NMS Plan Order, supra note 6, at 84925. The Commission assumes that the preparation and submission of the error assessment would cost approximately half as much as the revised written assessment. The revised written assessment estimate provides that each Participant would outsource 2.5 hours of legal time to assist in the review of the assessment, for an external cost of approximately \$1,000. The Commission estimates that each Participant would outsource approximately 1.25 hours of legal time, for an initial, one-time external cost of \$500 (1.25 hours x \$400 per hour rate for outside legal services) to assist in drafting the error assessment.

approximately \$12,000 a year for all Participants (or approximately \$4,000 per year when annualized over three years).²³³

The Commission estimates that the Participants would incur an aggregate, annual external cost of approximately \$4,000 to submit the written assessment of errors in the customer information provide to the Commission [(\$500 in initial external costs amortized over three years) x (24 Participants)]. This estimated cost has increased due to the increased number of Participants (24 Participants instead of 21 Participants).

h. Report on Impact of Tiered Fees on Market Liquidity

Section 6.6(a)(vi) of the CAT NMS Plan requires the Participants to submit a written report to study the impact of tiered-fees on market liquidity, including an analysis of the impact of the tiered-fee structure on Industry Members provision of liquidity, within 36 months of effectiveness of the Plan.

The Commission estimates that on average, each Participant would outsource 0.5 hours of legal time to assist in drafting the report, for an initial, one-time external cost of approximately \$200.²³⁴ Therefore, the Commission estimates that each Participant would incur \$200 of initial, one-time external costs for outsourced legal counsel per Participant, for an estimated aggregate initial, one-time external cost of \$4,800.²³⁵

When this one-time cost is annualized over three years, the Participants would incur an average aggregate external cost of approximately \$1,600.00 per year to provide to the Commission the written report to study the impact of tiered-fees on market liquidity (\$200 in initial external costs amortized over three years) x (24 Participants). This estimated cost has increased due to the increased number of Participants (24 Participants instead of 21 Participants).

i. Financial Statements

Section 9.2 of the CAT NMS Plan requires that the CAT LLC financials be (i) in compliance with GAAP, (ii) be audited by an independent public accounting firm, and (iii) be made publicly available. The Commission estimates that each Participant would

²³³ \$12,000 = (24 Participants) x (\$400 per hour rate for outside legal services) x (1.25 hours).

²³⁴ \$200 = (\$400 per hour rate for outside legal services) x (0.5 hours).

²³⁵ \$4,800 = (24 Participants) x (\$400 per hour rate for outside legal services) x (0.5 hours).

incur an annual external cost of \$2,708.33²³⁶ associated with this requirement, for an aggregate annual, ongoing external cost of \$65,000 to the Participants.²³⁷

The Commission estimates that the Participants would incur an aggregate, external cost of approximately \$65,000 to have the CAT LLC financials be (i) in compliance with GAAP, (ii) be audited by an independent public accounting firm, and (iii) be made publicly available [(\$2,708.33 in annual, ongoing external costs) x (24 Participants)]. The cost per individual Participant has decreased because the number of Participants has increased (from 21 to 24 Participants) while the estimated aggregate external cost has remained the same (\$65,000).

j. Background Checks

Section 6.1(g) of the CAT NMS Plan requires each Participant to conduct background checks of its employees and contractors that will use the CAT System. The Commission estimates that this requirement will impact approximately 1,700 users.²³⁸ The Commission estimates that each Participant would need to have background checks

²³⁶ In the CAT NMS Plan Order, the Commission estimated that the aggregate cost of this requirement for the Participants is \$65,000. To estimate this number, the Commission drew from a Commission adopting release and an industry report. Specifically, the Commission’s Crowdfunding Adopting Release estimated that the audit costs for affected issuers would be \$2,500 to \$30,000. See Securities Act Release No. 9974 (October 30, 2015), 80 FR 71499 (November 16, 2015). The Commission believes this estimate could be reasonable if the Company’s financials are of the same level of complexity as the larger issuers affected by the Crowdfunding rule, which is realistic because the Company is not publicly traded, is organized as a “business league”, and has a limited and predictable revenue stream. As an alternative estimate, the Commission estimated an audit cost of approximately \$65,000 using an industry estimate of \$479 in audit costs per \$1 million in revenue, using the assumption that Company revenue will just offset expected costs of \$139 million. See Audit Analytics report “Audit Fees and Non-Audit Fees: A Twelve Year Trend,” October 9, 2014, available at <http://www.auditanalytics.com/blog/audit-fees-and-non-audit-fees-a-twelve-year-trend/>. $\$479 \times \$139 = \$64,665 \sim \$65,000$. The Commission incorporates the higher estimate from the two methodologies (\$65,000) into its cost estimates. See CAT NMS Plan Order, supra note 6, at 84856, n.2503. $(\$65,000 \text{ annual, external cost}) / (24 \text{ Participants}) = \$2,708.33 \text{ per Participant}$.

²³⁷ Id.

²³⁸ Previously, the Commission estimated that approximately 1,500 users would be impacted, based on conversations with Participants, when there were only 21 Participants in the CAT NMS Plan. The Commission is revising this estimate to account for 3 additional Participants.

of approximately 71 users.²³⁹ For its estimates, the Commission is assuming that these would be background checks using fingerprints submitted to the Attorney General of the United States for identification and processing.²⁴⁰ The Commission estimates that the total initial external cost per Participant would be \$2,596.76,²⁴¹ for an aggregate, initial external cost of \$62,322.24.²⁴² Annualized over three years, the cost would be approximately \$865.59 per year for each Participant and approximately \$20,774 per year for all Participants.

The Commission estimates that the ongoing external cost to be incurred by each Participant would be approximately \$619.98,²⁴³ for an aggregate annual external cost of \$14,879.52.²⁴⁴

The Commission thus estimates that the Participants would incur an aggregate, average annual external cost of approximately \$35,654 to conduct background checks of its employees and contractors that will use the CAT System [(\$2,596.76 in initial external costs amortized over three years) + (\$619.98 in annual, ongoing external costs) x (24 Participants) = \$35,653.60 rounded up to \$35,654.00]. This estimated cost has increased due to the increased number of estimated users (1,700 instead of 1,500) to account for the increased number of Participants (24 Participants instead of 21 Participants).

²³⁹ 70.83 users per Participant = (1,700 users) / (24 Participants).

²⁴⁰ The Commission is basing this assumption on the requirements of Section 17(f)(2). 15 U.S.C. 78q(f)(2).

²⁴¹ 70.83 x 45% hard copy fingerprinting = 31.87 users. 70.83 x 55% electronic fingerprinting = 38.96 users. (31.87 hard copy fingerprinting users) x (\$44.50 per hard copy fingerprint) = \$1,418.22 for hard copy fingerprinting users per Participant. (38.96 electronic fingerprinting users) x (\$30.25 per electronic fingerprint) = \$1,178.54 for electronic fingerprint users per Participant. \$1,418.22 + \$1,178.54 = \$2,596.76 per Participant in initial external costs for fingerprinting.

²⁴² \$62,322.24 = (\$2,596.76 per Participant) x (24 Participants).

²⁴³ See *supra* note 148. Based on the Commission's estimate that 16.90 users will need to be subject to background checks annually, the Commission estimates that 45% of the 16.90 users would submit hard copy fingerprints and 55% of the 16.90 users would submit electronic fingerprints to conduct their background checks. 45% of 16.90 = 7.61 users that would submit hard copy fingerprints. 55% of 16.90 = 9.30 users that would submit electronic fingerprints. (7.61 hard copy fingerprinting users) x (\$44.50 per hard copy fingerprint) = \$338.65 for hard copy fingerprinting users per Participant. (9.30 electronic fingerprinting users) x (\$30.25 per electronic fingerprint) = \$281.33 for electronic fingerprint users per Participant. \$338.65 + \$281.33 = \$619.98 per Participant in initial external costs for fingerprinting.

²⁴⁴ (\$619.98 per Participant in annual, ongoing external costs) x (24 Participants) = \$14,879.52 to conduct a fingerprint-based background check of the users.

B. Costs to Broker-Dealer Members

a. Data Collection and Reporting

Rule 613(c)(1) requires the CAT NMS Plan to provide for an accurate, time-sequenced record of orders beginning with the receipt or origination of an order by a broker-dealer member of a Participant, and further documenting the life of the order through the process of routing, modification, cancellation and execution (in whole or in part) of the order. Rule 613(c) requires the CAT NMS Plan to impose requirements on broker-dealer members to record and report CAT information to the Central Repository in accordance with specified timelines.

The Commission's estimates delineate broker-dealer firms by whether they insource or outsource, or are likely to insource or outsource, CAT Data reporting obligations. The Commission believes that firms that currently report high numbers of OATS ROEs²⁴⁵ strategically would decide to either self-report their CAT Data or outsource their CAT Data reporting functions, while the firms with the lowest levels of activity would be unlikely to have the infrastructure and specialized employees necessary to insource CAT Data reporting and would almost certainly outsource their CAT Data reporting functions. The Commission recognizes that more active firms that will likely be CAT Reporters and insource regulatory data reporting functions may not have current OATS reporting obligations because they either are not FINRA members, or because they do not trade in NMS equity securities.²⁴⁶

As noted above, the Commission estimates that there are 126 OATS-reporting Insourcers and 45 non-OATS reporting Insourcers.²⁴⁷ The Commission's estimation categorizes the remaining 1,329 broker-dealers that the Plan anticipates would have CAT Data reporting obligations as Outsourcers.²⁴⁸

(1) Insourcers

A. Large Non-OATS Reporting Broker-Dealers

The Commission relies on the Plan's large broker-dealer cost estimates in estimating costs for large broker-dealers that can practicably decide between insourcing

²⁴⁵ See supra note 150.

²⁴⁶ The Commission also recognizes as discussed above that some broker-dealer firms may strategically choose to outsource despite the Plan's working assumption that these broker-dealers would insource their regulatory data reporting functions.

²⁴⁷ See supra note 152.

²⁴⁸ See supra note 153.

or outsourcing their regulatory data reporting functions.²⁴⁹ The Commission estimates that there are 14 large broker-dealers that are not OATS reporters currently in the business of electronic liquidity provision (“ELP Firms”) that would be classified as Insourcer firms.²⁵⁰

Additionally, the Commission estimates that there are 31 broker-dealers that may transact in options but not in equities that can be classified as Insourcer firms (“OMM Firms”).²⁵¹ These firms may have customer orders and other activity off-exchange that would cause them to incur a CAT reporting obligation.

The Commission assumes the 31 OMM Firms and 14 ELP Firms would be typical of the Plan’s large, non-OATS reporting firms; for these firms, the Commission relies on the cost estimates provided under Approach 1²⁵² for large, non-OATS reporting firms in the CAT NMS Plan.

The CAT NMS Plan provides the following average initial external cost figures that a large non-OATS reporting broker-dealer would expect to incur to adopt the systems changes needed to comply with the data reporting requirements of Rule 613 under Approach 1: \$450,000 in external hardware and software costs, and \$9,500 in external third party/outsourcing costs.²⁵³ Based on this information, the Commission estimates that these broker-dealers would, on average, incur approximately \$450,000 in initial costs for hardware and software to implement the systems changes needed to capture the required information and transmit it to the Central Repository, and an additional \$9,500 in initial third party/outsourcing costs.

Based on a comment to the CAT NMS Plan Notice that provided estimates for a modified allocation timestamp requirement,²⁵⁴ the Commission is adding the cost of the

²⁴⁹ See CAT NMS Plan, supra note 4, at Appendix C, Section A.6(c).

²⁵⁰ See supra note 155.

²⁵¹ See supra note 156.

²⁵² See supra note 157.

²⁵³ See CAT NMS Plan, supra note 4, at Section B.7(b)(iii)(c)(2)(a). The Commission believes that the third party/outsourcing costs may be attributed to the use of service bureaus (potentially), technology consulting, and legal services.

²⁵⁴ Letter to Brent J. Fields, Secretary, Commission, from Mary Lou Von Kaenel, Managing Director, Financial Information Forum, dated July 18, 2016, at 88, Table 6 (“FIF Letter”). The commenter based its implementation and ongoing estimates on a survey it conducted of broker-dealers to estimate the costs associated with the allocation report timestamp requirement. The commenter noted that the estimates do not account for all Insourcers (the cost estimates cover the 126 large OATS-reporting broker-dealer Insourcers, but not the 14 ELPs or 31 Options Market Makers), nor do they cover Outsourcing broker-dealers. The Commission believes those categories may not have been included in the

allocation timestamp requirement to the external costs to be incurred by large non-OATS-reporting broker-dealers. The Commission estimates that the initial cost to an ELP Firm and an OMM Firm to implement the modified allocation timestamp requirement would be \$250,000.²⁵⁵

Based on this information, the Commission estimates that the average initial external cost per ELP Firm would be \$709,500,²⁵⁶ for an estimated aggregate initial external cost of \$9,933,000.²⁵⁷ When annualized over three years, the average cost per ELP Firm would be approximately \$236,500 per year and the aggregate average cost for all ELP Firms would be approximately \$3,311,000 per year.

The Commission also is adding a cost estimate for the requirement that an OMM Firm submit a Quote Sent Time to an exchange.²⁵⁸ In the CAT NMS Plan Notice, the Commission estimated that the requirement that Options Market Makers submit quote sent times to the exchanges would cost between \$36.9 million and \$76.8 million over five

estimates due to a lack of participation by such broker-dealers in the survey. The Commission is assuming, for its Paperwork Reduction Act cost estimates, that the portion of the estimates attributed by the commenter to service bureaus will be passed-through to their Outsourcing broker-dealer clients that rely on service bureaus to perform their regulatory data reporting. The Commission is thus applying the portion of the commenter's cost estimates attributed to the 126 Insourcers to all 171 Insourcers, as well as the portion of the cost estimates attributed to the 13 service bureaus across the 1,329 broker-dealers that are categorized as Outsourcing broker-dealers.

²⁵⁵ The commenter stated that this requirement would cost the industry \$44,050,000 in initial implementation costs. The commenter attributed \$42,750,000 of the implementation cost estimate to 126 Insourcers. For purposes of this Paperwork Reduction Act analysis, the Commission is applying the portion of the cost estimates attributed to the 126 Insourcers to all 171 Insourcers. $\$42,750,000 / 171 \text{ Insourcers} = \$250,000$ in initial costs to implement the modified allocation timestamp requirement per Insourcer. The Commission believes that this cost would be an external hardware and software cost related to adding this functionality to servers.

²⁵⁶ $(\$450,000 \text{ in external hardware and software costs}) + (\$250,000 \text{ to implement the modified allocation timestamp requirement}) + (\$9,500 \text{ initial third party/outsourcing costs}) = \$709,500$ in initial external costs to implement data reporting systems.

²⁵⁷ $(\$700,000 \text{ in initial hardware and software costs}) + (\$9,500 \text{ initial third party/outsourcing costs}) \times 14 \text{ ELPs} = \$9,933,000$ in initial external costs to implement data reporting systems for ELPs.

²⁵⁸ FIF Letter at 65.

years.²⁵⁹ The Commission is using the maximum 5-year cost estimate and has divided it into \$17,400,000 in aggregate implementation external costs, and \$11,880,000 in aggregate ongoing external costs.²⁶⁰ The Commission estimates that this requirement will impose an additional initial hardware and software cost per OMM Firm of \$561,290.32.²⁶¹

Based on this information, the Commission estimates that the initial external cost per OMM Firm would be \$1,270,790.32,²⁶² for an estimated aggregate initial external cost of \$39,394,499.92.²⁶³ When annualized over three years, the average cost per OMM Firm would be approximately \$423,596.77 per year and the aggregate average cost for all OMM Firms would be approximately \$13,131,500 per year.

Once a large non-OATS reporting broker-dealer has established the appropriate systems and processes required for collection and transmission of the required

²⁵⁹ See FIF, SIFMA, and Security Traders Association, Cost Survey Report on CAT Reporting of Options Quotes by Market Makers (November 5, 2013), available at <http://www.catnmsplan.com/industryfeedback/p601771.pdf>; see also CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iv)(B).

²⁶⁰ The Commission notes that the Quote Sent Time cost estimate was not included in the cost estimates of the CAT NMS Plan Notice, because the Commission concluded that this requirement did not represent a significant source of costs. However, the Commission received a comment stating that the estimated 5-year cost to Options Market Makers for adding a timestamp to the quote times was between the range of \$39.9 million and \$76.8 million, and the commenter further stated that this is “not a trivial cost for providing one data element to the consolidated audit trail.” See FIF Letter at 65. In response to the comment, the Commission agrees that the costs of quote sent time are significant, and adds this cost to its estimates for Options Market data collection and reporting. See also CAT NMS Plan Order, supra note 6, at Section V.F.3.a(6). The Commission is using the maximum 5-year cost estimate to Options Market Makers provided by the commenter (\$76.8 million) and has divided it into \$17,400,000 in aggregate implementation external costs, and \$11,880,000 in aggregate ongoing external costs.

²⁶¹ $(\$17,400,000 \text{ in implementation costs}) / (31 \text{ Options Market Makers}) = \$561,290.32$ in initial external costs to implement the Quote Sent Time requirement per Options Market Maker.

²⁶² $(\$450,000 \text{ in external hardware and software costs}) + (\$250,000 \text{ to implement the modified allocation timestamp requirement}) + (\$9,500 \text{ initial third party/outsourcing costs}) + \$561,290.32 \text{ to implement the Quote Sent Time requirement}) = \$1,270,790.32$ in initial external costs per Options Market Maker.

²⁶³ $(\$1,270,790.32 \text{ in initial hardware and software costs}) \times (31 \text{ Options Market Makers}) = \$39,394,499.92$ in initial external costs to implement data reporting systems.

information to the Central Repository, the Commission believes that the Rule would impose ongoing annual burdens associated with, among other things, personnel time to monitor each large non-OATS reporting broker-dealer's reporting of the required data and the maintenance of the systems to report the required data; and implementing changes to trading systems that might result in additional reports to the Central Repository. The CAT NMS Plan provides the following average ongoing external costs that a large non-OATS reporting broker-dealer would expect to incur to maintain data reporting systems to be in compliance with Rule 613: \$80,000 in external hardware and software costs, and \$1,300 in external third party/outsourcing costs.²⁶⁴ Based on this information, the Commission estimates that it would cost, on average, approximately \$80,000 per year per large non-OATS reporting broker-dealer to maintain systems connectivity to the Central Repository and purchase any necessary hardware, software, and other materials, and an additional \$1,300 in third party/outsourcing costs.²⁶⁵

Additionally, the Commission estimates that the ongoing cost to an ELP Firm and an OMM Firm to maintain the modified allocation timestamp requirement would be \$29,166.67 per year.²⁶⁶

The Commission estimates that the total average ongoing external cost per ELP Firm would be \$110,466.68²⁶⁷ per year to maintain the systems necessary to collect and transmit information to the Central Repository, for an estimated aggregate ongoing external cost for the ELP Firms of \$1,546,533.52 per year.²⁶⁸

The Commission also believes there is an ongoing external cost for the requirement that an OMM Firm submit a Quote Sent Time to an exchange. The

²⁶⁴ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(C)(2)(b). The CAT NMS Plan did not break down these third party costs into categories.

²⁶⁵ Id.

²⁶⁶ See supra note 254. The commenter stated that this requirement would cost the industry \$5,035,833 in ongoing costs. The commenter attributed \$4,987,500 of the ongoing cost estimate to 126 Insourcers. For purposes of this Paperwork Reduction Act analysis, the Commission is applying the portion of the cost estimates attributed to the 126 Insourcers to all 171 Insourcers. $\$4,987,500/171$ Insourcers = \$29,166.67 in ongoing costs to maintain the modified allocation timestamp requirement per Insourcer. The Commission believes that this cost would be an external hardware and software cost related to maintenance of the modified allocation timestamp.

²⁶⁷ $(\$80,000 \text{ in external hardware and software costs}) + (\$29,166.67 \text{ to maintain the modified allocation timestamp requirement}) + (\$1,300 \text{ ongoing external third party/outsourcing costs}) = \$110,466.68$ in ongoing external costs per ELP.

²⁶⁸ $(\$110,466.68 \text{ in ongoing external costs per ELP}) \times (14 \text{ ELPs}) = \$1,546,533.52$ in aggregate ongoing external costs.

Commission estimates that this requirement will impose an additional ongoing hardware and software cost per OMM Firm of \$383,225.81 per year.²⁶⁹

Based on this information, the Commission estimates that the total ongoing external cost per OMM Firm would be \$493,692.48 per year.²⁷⁰ to maintain the systems necessary to collect and transmit information to the Central Repository, for an estimated aggregate ongoing external cost to OMM Firms of \$15,304,466.88 per year.²⁷¹

The Commission thus estimates that ELP Firms would incur an aggregate, average external cost of approximately \$4,857,534 per year to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(\$709,500 in initial external costs amortized over three years) + (\$110,466.68 in annual, ongoing external costs) x (14 ELPs) = \$4,857,533.52 rounded up to \$4,857,534].

The Commission thus estimates that OMM Firms would incur an aggregate, average external cost of approximately \$28,435,967 per year to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(\$1,270,790.32 in initial external costs amortized over three years) + (\$493,692.48 in annual, ongoing external costs) x (31 options firms) = \$28,435,966.75 rounded up to \$28,435,967]. This figure has changed slightly since the prior submission due to the correction of a minor computational error in the ongoing external costs to maintain the Quote Sent Time requirement per Options Market Maker.

B. Large OATS-Reporting Broker-Dealers

The Commission estimates that 126 broker-dealers, which reported more than 350,000 OATS ROEs between June 15 and July 10, 2015, would strategically decide to either self-report CAT Data or outsource their CAT data reporting functions.²⁷² To

²⁶⁹ The Commission estimates that the ongoing cost of the Quote Sent Time requirement is approximately \$11,880,000. See supra note 260 and accompanying text. $(\$11,880,000 \text{ in ongoing costs}) / (31 \text{ Options Market Maker}) = \$383,225.81$ in ongoing external costs to maintain the Quote Sent Time requirement per Options Market Maker. This figure has changed slightly since the prior submission due to the correction of a minor computational error.

²⁷⁰ $(\$80,000 \text{ in external hardware and software costs}) + (\$1,300 \text{ in external third party/outsourcing costs}) + (\$29,166.67 \text{ in ongoing costs to maintain the modified allocation timestamp requirement}) + (\$383,225.81 \text{ in ongoing external costs to maintain the Quote Sent Time requirement}) = \$493,692.48$ in ongoing external costs per Options Market Maker.

²⁷¹ $(\$493,692.48 \text{ in ongoing external costs per Options Market Maker}) \times (31 \text{ options firms}) = \$15,304,466.88$ in aggregate ongoing external costs.

²⁷² See supra note 164.

conduct its Paperwork Burden Analysis for the 126 broker-dealers, the Commission is relying on the estimates used by the CAT NMS Plan of expected costs that a large OATS-reporting broker-dealer would incur as a result of the implementation of the consolidated audit trail under Approach 1.²⁷³

The CAT NMS Plan provides the following average initial external cost figures that a large OATS-reporting broker-dealer would expect to incur as a result of the implementation of the consolidated audit trail under Approach 1: \$750,000 in hardware and software costs, and \$150,000 in external third party/outsourcing costs.²⁷⁴

Based on the comment that provided estimates for a modified allocation timestamp requirement,²⁷⁵ the Commission is estimating that the initial cost to a large OATS-reporting broker-dealer to implement the modified allocation timestamp requirement would be \$250,000.²⁷⁶

Based on this information, the Commission estimates that a large OATS-reporting broker-dealer would incur approximately \$750,000 in initial external costs for hardware and software to implement the systems changes needed to capture the required information and transmit it to the Central Repository, an additional \$150,000 in initial external third party/outsourcing costs,²⁷⁷ and \$250,000 to implement the modified allocation timestamp requirement. Therefore, the Commission estimates that the average one-time initial external cost per large OATS-reporting broker-dealer would be \$1,150,000 to implement CAT data reporting systems,²⁷⁸ for an estimated aggregate

²⁷³ See supra note 157.

²⁷⁴ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(C)(2)(a). The CAT NMS Plan did not break down these third party costs into categories. The Commission believes that these costs may be attributed to the use of service bureaus, technology consulting, and legal services.

²⁷⁵ See supra note 254.

²⁷⁶ See supra note 255. $\$42,750,000 / 171 \text{ Insourcers} = \$250,000$ in initial costs to implement the modified allocation timestamp requirement per Insourcer.

²⁷⁷ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(C)(2)(a). The CAT NMS Plan did not break down these third party costs into categories. The Commission believes that these costs may be attributed to the use of service bureaus, technology consulting, and legal services.

²⁷⁸ $(\$750,000 \text{ in initial external hardware and software costs}) + (\$150,000 \text{ initial external third party/outsourcing costs}) + (\$250,000 \text{ modified allocation timestamp initial external cost}) = \$1,150,000$ in initial external costs per large OATS-reporting broker-dealer to implement CAT data reporting systems. The Commission notes that due to a computational error, the Commission previously estimated this cost to be \$1,250,000.

initial external cost of \$144,900,000.²⁷⁹ When annualized over three years, the average cost per broker-dealer would be approximately \$383,333.33 per year and the aggregate average cost for all broker-dealers would be approximately \$48,300,000 per year.

Once a large OATS-reporting broker-dealer has established the appropriate systems and processes required for collection and transmission of the required information to the Central Repository, such broker-dealers would be subject to ongoing external costs associated with, among other things, personnel time to monitor each broker-dealer's reporting of the required data and the maintenance of the systems to report the required data; and implementing changes to trading systems which might result in additional reports to the Central Repository. The CAT NMS Plan provides the following average ongoing external cost figures that a large OATS-reporting broker-dealer would expect to incur to maintain data reporting systems to be in compliance with Rule 613: \$380,000 in ongoing external hardware and software costs, and \$120,000 in ongoing external third party/outsourcing costs.²⁸⁰ Based on this information the Commission believes that it would cost, on average, approximately \$380,000 per year per large OATS-reporting broker-dealer to maintain systems connectivity to the Central Repository and purchase any necessary hardware, software, and other materials, and an additional \$120,000 in external ongoing third party/outsourcing costs.²⁸¹ Therefore, the Commission estimates that the average ongoing annual external cost per large OATS-reporting broker-dealer would be approximately \$500,000²⁸² to maintain the systems necessary to collect and transmit information to the Central Repository.

Additionally, the Commission estimates that the ongoing cost to a large OATS-reporting broker-dealer to maintain the modified allocation timestamp requirement would be \$29,166.67.²⁸³

²⁷⁹ $(\$750,000 \text{ in initial external hardware and software costs}) + (\$150,000 \text{ in external third party/outsourcing costs}) + (\$250,000 \text{ modified allocation timestamp external cost}) \times (126 \text{ large OATS-reporting broker-dealers}) = \$144,900,000$ in initial external costs to implement data reporting systems. This number has been reduced since the prior submission because of a computational error.

²⁸⁰ See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(C)(2)(b). The CAT NMS Plan did not categorize these third party costs. The Commission believes that these costs may be attributed to the use of service bureaus, technology consulting, and legal services.

²⁸¹ See id.

²⁸² $(\$380,000 \text{ in ongoing external hardware and software costs} + \$120,000 \text{ in ongoing external third party/outsourcing costs}) = \$500,000$ in ongoing external costs per large OATS-reporting broker-dealer.

²⁸³ See supra note 266. $\$4,987,500 / 171 \text{ Insourcers} = \$29,166.67$ in ongoing costs to maintain the modified allocation timestamp requirement per Insourcer.

Based on this information, the Commission believes that the average ongoing annual external cost per large OATS-reporting broker-dealer would be approximately \$529,166.67²⁸⁴ to maintain the systems necessary to collect and transmit information to the Central Repository, for an estimated aggregate ongoing external cost of \$66,675,000.42.²⁸⁵

The Commission thus estimates that large OATS reporting broker-dealers would incur an aggregate, average external cost of approximately \$114,975,000 per year to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(\$1,150,000 initial external costs amortized over three years) + (\$529,166.67 ongoing annual, external costs) x (126 large OATS reporting broker-dealers)]. The estimated cost has been reduced by approximately \$4,200,001 due to correction of a computational error.²⁸⁶

(2) Outsourcing Firms

A. Small OATS-Reporting Broker-Dealers

The Commission estimates that there are 806 broker-dealers that report fewer than 350,000 OATS ROEs monthly. The Commission believes that these broker-dealers generally outsource their regulatory reporting obligations because during the period June 15 – July 10, 2015, approximately 88.9% of their 350,000 OATS ROEs were reported through service bureaus, with 730 of these broker-dealers reporting more than 99% of their OATS ROEs through one or more service bureaus.²⁸⁷ The Commission estimates that these firms currently spend an aggregate of \$100.2 million on annual outsourcing costs.²⁸⁸ The Commission estimates these 806 broker-dealers would spend \$100.2 million in the aggregate to outsource their regulatory data reporting to service bureaus to

²⁸⁴ (\$380,000 in ongoing external hardware and software costs) + (\$29,166.67 to maintain the modified allocation timestamp requirement) + (\$120,000 in ongoing external third party/outsourcing costs) = \$529,166.67 in ongoing external costs per large OATS-reporting broker-dealer.

²⁸⁵ (\$380,000 in ongoing external hardware and software costs) + (\$29,166.67 to maintain the modified allocation timestamp requirement) + (\$120,000 in ongoing external third party/outsourcing costs) x (126 large OATS-reporting broker-dealers) = \$66,675,000.42 in aggregate ongoing external costs.

²⁸⁶ See supra note 279.

²⁸⁷ See supra note 164.

²⁸⁸ The average broker-dealer in this category reported 15,185 OATS ROEs from June 15-July 10, 2015; the median reported 1,251 OATS ROEs. Of these broker-dealers, 39 reported more than 100,000 OATS ROEs during the sample period.

report in accordance with Rule 613,²⁸⁹ or \$124,317.62 per broker-dealer.²⁹⁰ Therefore, the Commission estimates that each small OATS-reporting broker-dealer would incur approximately \$124,317.62 in initial external costs.

Additionally, based on the comment that provided estimates for a modified allocation timestamp requirement,²⁹¹ the Commission estimates that the initial cost to a small OATS-reporting broker-dealer to implement this requirement would be \$978.18.²⁹² Therefore, the Commission estimates that each small OATS-reporting broker-dealer would incur approximately \$125,295.80 in initial external costs,²⁹³ for an estimated aggregate initial external cost of \$100,988,414.80.²⁹⁴ When annualized over three years, the average cost per broker-dealer would be approximately \$41,765.27 per year and the average cost for all broker-dealers would be approximately \$33,662,808 per year.

The Commission estimates that it would cost small OATS-reporting broker-dealers, on average, approximately \$124,317.62 in ongoing external outsourcing costs²⁹⁵ to ensure ongoing compliance with Rule 613. Additionally, the Commission estimates

²⁸⁹ See CAT NMS Plan Order, *supra* note 6, at Section V.F.1.c.(2)(B).

²⁹⁰ $\$124,317.62 = \$100,200,000/806$ broker-dealers. This amount is the average estimated annual outsourcing cost to firms that currently report fewer than 350,000 OATS ROEs per month. *Id.* This number is reduced from the prior information collections submissions due to a computational error in the earlier submissions, which calculated this figure as \$124,373 per broker-dealer.

²⁹¹ See *supra* note 254.

²⁹² See *supra* note 255. The commenter attributed \$1,300,000 of the implementation cost estimate to 13 service bureaus. For purposes of this Paperwork Reduction Act analysis, the Commission is assuming that the portion of the estimates attributed by the commenter to service bureaus will be passed-through to their Outsourcing broker-dealer clients that rely on service bureaus to perform their regulatory data reporting. The Commission is thus applying the portion of the commenter's cost estimates attributed to the 13 service bureaus across the 1,329 broker-dealers that are categorized as Outsourcing broker-dealers. $\$1,300,000 / 1,329$ Outsourcing broker-dealers = \$978.18 in initial costs to implement the modified allocation timestamp requirement per Outsourcing broker-dealer.

²⁹³ $\$125,295.80 = (\$124,317.62 \text{ in initial outsourcing costs}) + (\$978.18 \text{ to implement the allocation timestamp})$.

²⁹⁴ $(\$124,317.62 \text{ in initial outsourcing costs}) + (\$978.18 \text{ to implement the allocation timestamp}) \times (806 \text{ small OATS-reporting broker-dealers}) = \$100,988,414.80$ in aggregate initial external costs.

²⁹⁵ See *supra* note 290.

that the ongoing cost to a small OATS-reporting broker-dealer to maintain the modified allocation timestamp requirement would be \$81.51.²⁹⁶

Therefore, the Commission estimates that the average ongoing external cost per small OATS-reporting broker-dealer would be approximately \$124,399.13 per year,²⁹⁷ for an estimated aggregate ongoing external cost of approximately \$100,265,698.78 per year for all such broker-dealers.²⁹⁸

The Commission thus estimates that small OATS-reporting broker-dealers would incur an aggregate, average external cost of approximately \$133,928,506 per year to outsource their regulatory data reporting to service bureaus and to ensure ongoing compliance with Rule 613 [(\$125,295.80 in initial external costs amortized over three years) + (\$124,399.13 in annual, ongoing external costs) x (806 small OATS-reporting broker-dealers)]. This estimated cost has changed because the Commission believes that the cost of implementing and maintaining the modified allocation timestamp would be a cost shared between all 1,329 Outsourcing broker-dealers (specifically, small OATS reporting broker-dealers and small non-OATS reporting broker-dealers), and because of a computational error in the prior submission.²⁹⁹

B. Small Non-OATS-Reporting Broker-Dealers

In addition to firms that currently report to OATS, the Commission estimates there are 499 broker-dealers that are currently exempt from OATS reporting rules due to firm size, or excluded because all of their order flow is routed to a single OATS reporter, such as a clearing firm, that would incur CAT reporting obligations.³⁰⁰ A further 24

²⁹⁶ See supra note 266. The commenter attributed \$108,333 of the ongoing cost estimate to 13 service bureaus. For purposes of this Paperwork Reduction Act analysis, the Commission is assuming that the portion of the estimates attributed by the commenter to service bureaus will be passed-through to their Outsourcing broker-dealer clients that rely on service bureaus to perform their regulatory data reporting. The Commission is thus applying the portion of the commenter's cost estimates attributed to the 13 service bureaus across the 1,329 broker-dealers that are categorized as Outsourcing broker-dealers. $\$108,333 / 1,329$ Outsourcing broker-dealers = \$81.51 in ongoing costs to maintain the modified allocation timestamp requirement per Outsourcing broker-dealer.

²⁹⁷ $\$124,399.13 = (\$124,317.62 \text{ in ongoing outsourcing costs}) + (\$81.51 \text{ to maintain the allocation timestamp})$

²⁹⁸ $\$100,265,698.78 = (\$124,317.62 \text{ in ongoing outsourcing costs}) + (\$81.51 \text{ to maintain the allocation timestamp}) \times (806 \text{ broker-dealers})$.

²⁹⁹ See supra note 290.

³⁰⁰ See supra note 177.

broker-dealers have Participant memberships only with one Participant;³⁰¹ the Commission believes this group is comprised mostly of floor brokers and further believes these firms would experience CAT implementation and ongoing reporting costs similar in magnitude to small equity broker-dealers that currently have no OATS reporting responsibilities.³⁰²

The Commission assumes these broker-dealers would have very low levels of CAT reporting, similar to those of the lowest activity firms that currently report to OATS. For these firms, the Commission assumes that under CAT they would incur the average estimated service bureau cost of broker-dealers that currently report fewer than 350,000 OATS ROEs per month, which is \$124,317.62 annually.³⁰³

Additionally, based on the comment that provided estimates for a modified allocation timestamp requirement,³⁰⁴ the Commission estimates that the initial cost to a small non-OATS-reporting broker-dealer would be \$978.18.³⁰⁵

Based on this information, the Commission estimates that each small non-OATS-reporting broker-dealer would incur approximately \$125,295.80 in initial external costs.³⁰⁶ Therefore, the Commission estimates that the average one-time initial external cost per small non-OATS-reporting broker-dealer would be \$125,295.80, for an estimated aggregate initial external cost of \$65,529,703.40.³⁰⁷ When annualized over three years, the average cost per broker-dealer would be approximately \$41,765.27 per year and the average cost for all such broker-dealers would be approximately \$21,843,236 per year.

The Commission estimates that it would cost, on average, approximately \$124,317.62 in ongoing external outsourcing costs³⁰⁸ to ensure ongoing compliance with

³⁰¹ See supra note 179.

³⁰² Id.

³⁰³ See supra note 290.

³⁰⁴ See supra note 254.

³⁰⁵ See supra note 292. $\$1,300,000 / 1,329$ Outsourcing broker-dealers = \$978.18 in initial costs to implement the modified allocation timestamp requirement per Outsourcing broker-dealer.

³⁰⁶ $\$125,295.80 = (\$124,317.62 \text{ in initial outsourcing costs}) + (\$978.18 \text{ to implement the allocation timestamp})$.

³⁰⁷ $\$65,529,703.40 = (\$124,317.62 \text{ in initial outsourcing costs}) + (\$978.18 \text{ to implement the allocation timestamp}) \times (523 \text{ small non-OATS-reporting broker-dealers})$.

³⁰⁸ The Commission assumes these firms would have very low levels of CAT reporting, similar to those of the lowest activity firms that currently report to OATS. For these firms, the Commission assumes that under CAT they would

Rule 613. Additionally, the Commission estimates that the ongoing cost to a small non-OATS-reporting broker-dealer to maintain the modified allocation timestamp requirement would be \$81.51.³⁰⁹ Therefore, the Commission estimates that the average ongoing external cost per small non-OATS-reporting broker-dealer would be approximately \$124,399.13,³¹⁰ for an estimated aggregate ongoing external cost of \$65,060,744.99.³¹¹

The Commission thus estimates that small non-OATS-reporting broker-dealers would incur aggregate, average external costs of approximately \$86,903,981 to outsource data collection and reporting and to ensure ongoing compliance with Rule 613 [(\$125,295.80 in initial external costs amortized over three years) + \$124,399.13 in annual, ongoing external costs) x (523 small non-OATS-reporting broker-dealers) = \$86,903,981.20 rounded down to \$86,903,981].

This estimated cost has changed due to the decreased number of estimated small non-OATS-reporting broker-dealers (from 823 to 523). This estimated cost has also changed because the Commission believes that the cost of implementing and maintaining the modified allocation timestamp would be a cost shared between all 1,329 Outsourcing broker-dealers (specifically, small OATS reporting broker-dealers and small non-OATS reporting broker-dealers). This estimated cost has also changed from the prior information collections submission because of a computational error in the prior submission.³¹²

C. Completed Information Collections Requirements

As discussed above,³¹³ the Commission believes that three information collections requirements have been satisfied, specifically (1) a document outlining how the Participants could incorporate into the consolidated audit trail information regarding certain products that are not NMS securities;³¹⁴ (2) a one-time assessment of the clock

incur the average estimated service bureau cost of firms that currently OATS report fewer than 350,000 OATS ROEs per month of \$124,373 annually.

³⁰⁹ See supra note 296.

³¹⁰ \$124,399.13= (\$124,317.62 in ongoing outsourcing costs) + (\$81.51 to maintain the allocation timestamp)

³¹¹ (\$124,317.62 in ongoing outsourcing costs) + (\$81.51 to maintain the allocation timestamp) x (523 small non-OATS reporting broker-dealers) = \$65,060,744.99 in aggregate ongoing external costs to ensure ongoing compliance with Rule 613.

³¹² See supra note 290.

³¹³ See supra Section I.A.

³¹⁴ See 17 CFR 242.613(i). See also “One-Time Written Assessments,” Consolidated Audit Trail, LLC at: <https://www.catnmsplan.com/one-time-written-assessments/index.html>.

synchronization standards in the Plan before reporting begins for Industry Members, which assessment shall take into account the diversity of CAT Reporters and systems;³¹⁵ and (3) a one-time report that discusses the Participants' assessment of implementing coordinated surveillance.³¹⁶ These one-time information collections have been completed by the Participants, so the Commission believes that the annual dollar cost for each of the information collections is \$0.

Summary of Dollar Costs										
Name of Information Collection	Type of Burden	[A.] Number of Entities Impacted	[B.] Annual Responses per Entity	[C.] Initial Cost per Entity per Response	[D.] Initial Cost Annualized per Entity per Response [= C ÷ 3 years]	[E.] Ongoing Cost per Entity per Response	[F.] Annual Cost Per Entity per Response [= D + E]	[G.] Total Annual Cost Per Entity [= (D + E) * B]	[H.] Total Industry Cost [= G * A]	Small Business Entities Affected
Central Repository	Recordkeeping	24	1	\$0	\$0	\$2,325,000	\$2,325,000	\$2,325,000	\$55,800,000	0
Data Collection and Reporting (Participants)	Third Party Disclosure	24	1	0	0	\$389,473.68	\$389,473.68	\$389,473.68	\$9,347,368	0
Surveillance	Recordkeeping	24	1	\$300,000	\$100,000	\$1,105,263.16	\$1,205,263.16	\$1,205,263.16	\$28,926,316	0
Written Assessment of Operation of CAT	Reporting	24	1	\$0	\$0	\$1,000	\$1,000	\$1,000	\$24,000	0
Independent Audit of Expenses Incurred Prior to the Effective Date	Disclosure	24	1	\$208.33	\$69.44	\$0	\$69.44	\$69.44	\$1,667	0
Assessment of Industry Member Bulk Access to Reporter Data	Reporting	24	1	\$2,000	\$666.67	\$0	\$666.67	\$666.67	\$16,000	0
Assessment of Errors in Customer Information Fields	Reporting	24	1	\$500	\$166.67	\$0	\$166.67	\$166.67	\$4,000	0
Report on Impact of Tiered Fees on Market Liquidity	Reporting	24	1	\$200	\$66.67	\$0	\$66.67	\$66.67	\$1,600	0

³¹⁵ See CAT NMS Plan Order, supra note 6, at 84940.

³¹⁶ Id. at 84940–84941.

Name of Information Collection	Type of Burden	[A.] Number of Entities Impacted	[B.] Annual Responses per Entity	[C.] Initial Cost per Entity per Response	[D.] Initial Cost Annualized per Entity per Response [= C ÷ 3 years]	[E.] Ongoing Cost per Entity per Response	[F.] Annual Cost Per Entity per Response [= D + E]	[G.] Total Annual Cost Per Entity [= (D + E) * B]	[H.] Total Industry Cost [= G * A]	Small Business Entities Affected
Financial Statements	Disclosure	24	1	0	0	\$2,708.30	\$2,708.30	\$2,708.30	\$65,000	0
Background Checks	Disclosure	24	1	\$2,596.76	\$865.59	\$619.98	\$1,485.57	\$1,485.57	\$35,654	0
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers - ELPs)	Third Party Disclosure	14	1	\$709,500	\$236,500	\$110,466.68	\$346,966.68	\$346,966.68	\$4,857,534	0
Data Collection and Reporting (Large, Non-OATS Reporting Broker-dealers – Options Market Makers)	Third Party Disclosure	31	1	\$1,270,790.32	\$423,596.77	\$493,692.48	\$917,289.25	\$917,289.25	\$28,435,967	0
Data Collection and Reporting (Large OATS Reporting Broker-Dealers)	Third Party Disclosure	126	1	\$1,150,000	\$383,333.33	\$529,166.67	\$912,500	\$912,500	\$114,975,000	0
Data Collection and Reporting (Small OATS Reporting Broker-Dealers)	Third Party Disclosure	806	1	\$125,295.80	\$41,765.27	\$124,399.13	\$166,164.40	\$166,164.40	\$133,928,506	Estimated 402 ³¹⁷
Data Collection and Reporting (Small Non-OATS Reporting Broker-Dealers)	Third Party Disclosure	523	1	\$125,295.80	\$41,765.27	\$124,399.13	\$166,164.40	\$166,164.40	\$86,903,981	Estimated 523 ³¹⁸
Review of Clock Synchronization Standards	Reporting	24	0	\$0	\$0	\$0	\$0	\$0	\$0	0
Coordinated Surveillance Report	Reporting	24	0	\$0	\$0	\$0	\$0	\$0	\$0	0
Document on Expansion to Other Securities	Reporting	24	0	\$0	\$0	\$0	\$0	\$0	\$0	0
TOTAL COST FOR ALL RESPONDENTS									\$ 463,322,593	

317 See supra note 188.

318 Id.

14. Costs to Federal Government

There will be no additional costs to the Federal Government.

15. Changes in Burden

The aggregate time burden has decreased by 697,136 hours (from 8,269,746 hours to 7,572,610 hours) and the aggregate cost burden has decreased by \$71,142,974 (from \$534,465,567 to \$463,322,593).

The changes in burden have occurred because, as discussed above, while the number of Participants subject to the Plan has increased (from 21 Participants to 24 Participants), certain information collection requirements have been completed, the number of overall broker-dealers subject to the CAT reporting requirements has decreased (from 1,800 broker-dealers to 1,500 broker-dealers), and certain calculations have been adjusted.

The Commission believes that certain information collection requirements have been satisfied, as described above, including the initial burdens and costs associated with the development of the consolidated audit trail and data collection and reporting for Participants.

The Commission notes that the number of Participants has increased from 21 Participants to 24 Participants. The estimated burdens and costs for Participants have also been impacted by a change in calculation relating to the Participants Study. Specifically, some burden and cost calculations relating to Participants have been adjusted to more accurately represent the information presented by Participants in the CAT NMS Plan in the Participants Study. The Commission is relying on aggregate estimates provided by Participants in the CAT NMS Plan, based on a survey of 19 Participants, but previously assumed that all of these aggregate estimates applied equally to 21 Participants. The Commission is now adjusting certain aggregate estimates provided by Participants to account for the fact that those numbers are based on 19 Participants, where appropriate. For collectively shared burdens and costs the Commission did not adjust the Participants Study numbers in a similar fashion.

In addition, the Commission has reduced the estimated number of broker-dealers subject to CAT reporting from 1,800 to 1,500, resulting in a reduction in the estimated number of small non-OATS-reporting broker-dealers from 823 to 523. This has resulted in a number of changed estimated burdens and costs, including a substantial decrease in the overall burdens and costs estimated for small non-OATS-reporting broker-dealers in the aggregate, as well as slight changes to the estimated costs for small non-OATS-reporting broker-dealers because of the way the cost of implementing and maintaining the modified timestamp is estimated to be shared between small OATS Reporting Broker-Dealers and small non-OATS-reporting broker-dealers. In addition, the costs for data collection and reporting for small OATS reporting broker-dealers and small non-OATS

reporting broker-dealers has changed due to the correction of a computational error.³¹⁹ Separately, the Commission has also corrected minor computational errors in calculating the dollar costs associated with Data Collection and Reporting (Large Non-OATS-Broker-Dealers – Options Market Makers)³²⁰ and Data Collection and Reporting (Large OATS Reporting Broker-Dealers).³²¹ The chart below identifies the Information Collections whose burdens have changed and summarizes the amount of the changes and the primary reason(s) for the changes.

Summary of Annual Burden Changes (rounded to the nearest hour or dollar):

Name of Information Collection	Change in Hours	Change in Cost	Reason for Change
Central Repository	(4,815)	(\$22,466,667)	Elimination of one-time initial burdens and costs.
Data Collection and Reporting (Participants)	(6,428)	(\$585,965)	Elimination of one-time initial burdens and costs, increase in number of respondents from 21 to 24, and change to calculation based on Participants Study. <u>See supra</u> note 105, and accompanying text.
Surveillance	80,971	\$6,026,316	Increase in number of respondents (Participants) from 21 to 24 and change to calculation based on Participants Study. <u>See supra</u> note 105, and accompanying text.
Written Assessment of Operation of CAT	No change.	\$3,000	Increase in number of respondents (Participants) from 21 to 24.
Independent Audit of Expenses Incurred Prior to the Effective Date	n/a	No change.	No change.
Assessment of Industry Member Bulk Access to Reporter Data	15	\$2000	Increase in number of respondents (Participants) from 21 to 24.
Assessment of Errors in Customer Information Fields	24	\$500	Increase in in number of respondents (Participants) from 21 to 24.

³¹⁹ See supra note 290.

³²⁰ See supra note 269.

³²¹ See supra note 279.

Name of Information Collection	Change in Hours	Change in Cost	Reason for Change
Report on Impact of Tiered Fees on Market Liquidity	No change.	\$200	Increase in number of respondents (Participants) from 21 to 24.
Assessment of Material Systems Change on Error Rate	No change.	n/a	No change.
Background Checks	30	\$4,306	Increase in number of respondents (Participants) from 21 to 24.
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers) - ELPs	No change.	No change.	No change.
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers) – Options Market Makers	No change.	(\$930)	Correction of minor computational error in costs. <u>See supra</u> note 269.
Data Collection and Reporting (Large OATS Reporting Broker-Dealers)	No change.	(\$4,200,001)	Correction of computational error. <u>See supra</u> note 279.
Data Collection and Reporting (Small OATS Reporting Broker-Dealers)	No change.	\$983	Correction of minor computational error. <u>See supra</u> note 290.
Data Collection and Reporting (Small Non-OATS Reporting Broker-Dealers)	(765,000)	(\$49,848,316)	Reduction in number of estimated small-non-OATS Reporting Broker-Dealers, from 823 to 523, and correction of minor computational error. <u>See supra</u> note 290.
Review of Clock Synchronization Standards	(133)	(\$1,400)	Elimination of one-time burdens because information collections requirement has been completed.

Name of Information Collection	Change in Hours	Change in Cost	Reason for Change
Coordinated Surveillance Report	(600)	(\$7,000)	Elimination of one-time burdens because information collections requirement has been completed.
Document on Expansion to Other Securities	(1,200)	(\$70,000)	Elimination of one-time burdens because information collections requirement has been completed.
Total Change	(697,136)	(\$71,142,974)	

16. Information Collection Planned for Statistical Purposes

Not applicable. The information collection is not used for statistical purposes.

17. Approval to Omit the OMB Expiration Date

The Commission is not seeking approval to omit the OMB expiration date.

18. Exceptions to Certification

This collection complies with the requirements in 5 CFR 1320.9.

B. Collections of Information Employing Statistical Methods

This information collection does not involve statistical methods.