

**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)**

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 an 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FINRA and the national securities exchanges (the “Participants”) and the Commission currently must rely is generally outdated and inadequate to effectively oversee a complex, dispersed and highly automated national market system.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 nature 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 suffer 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.<sup>1</sup>

Recognizing these shortcomings, on July 11, 2012, the Commission adopted Rule 613 of Regulation NMS under the Act.<sup>2</sup> 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.<sup>3</sup> On February 27, 2015, the Participants submitted the CAT NMS Plan.<sup>4</sup>

The Commission notes that when it adopted Rule 613, it discussed the burden hours associated with the development and submission of the CAT NMS Plan only.<sup>5</sup> In doing so, the Commission noted that the development and submission of the CAT NMS

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

<sup>2</sup> 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”).

<sup>3</sup> See 17 CFR 242.613(a)(1), (c)(1), (c)(7).

<sup>4</sup> 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, as well as a copy of the request for proposal issued by the Participants to solicit Bids from parties interested in serving as the Plan Processor for the consolidated audit trail. Unless the context otherwise requires, the “CAT NMS Plan” shall refer to the Amended and Restated CAT NMS Plan, as modified by the Amendment.

<sup>5</sup> See Adopting Release, *supra* note 2, at 45804. On September 25, 2015, the Commission submitted to OMB a request for approval of an extension of the collection of information related to the development and submission of the CAT NMS Plan. See Submission for OMB Review; Comment Request for Extension of Rule 613; SEC File No. 270-616, OMB Control No. 3235-0671 (September 25, 2015), 80 FR 59209 (October 1, 2015). This submission was approved by OMB on December 21, 2015.

Plan that would govern the creation, implementation and maintenance of a consolidated audit trail is a multi-step process and accordingly that the Commission was deferring its discussion of the burden hours associated with the other paperwork requirements required by Rule 613 and ongoing burdens since they would only be incurred if the Commission approves the CAT NMS Plan.<sup>6</sup>

The estimates discussed below are based on the requirements of Rule 613 and take into account the Exemption Order.<sup>7</sup> Information and estimates contained in the CAT NMS Plan that was submitted by the Participants also informed these estimates because they provide a useful, quantified point of reference regarding potential burdens and costs. The Commission acknowledges that the CAT NMS Plan filed by the Participants contains provisions in addition to those required by the Commission in Rule 613 (e.g., requiring the inclusion of OTC Equity Securities;<sup>8</sup> 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;<sup>9</sup> 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<sup>10</sup>).

On April 27, 2016, the Commission published a notice soliciting comments from the public.<sup>11</sup> On November 15, 2016, the Commission approved the CAT NMS Plan (“CAT NMS Plan Order”).<sup>12</sup>

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<sup>6</sup> See Adopting Release, *supra* note 2, at 45804.

<sup>7</sup> 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”).

<sup>8</sup> See CAT NMS Plan, *supra* note 4, at Section 1.1 (defining “Eligible Security” as all NMS securities and all OTC Equity Securities); Appendix C, Section A.1(a).

<sup>9</sup> See *id.* at Section 6.5(b)(i).

<sup>10</sup> See *id.* at Appendix C, Section A.1(a); Appendix D, Section 2.

<sup>11</sup> See Securities Exchange Act Release No. 77724 (April 27, 2016), 81 FR 30613 (May 17, 2016) (“CAT NMS Plan Notice”). The burdens associated with the CAT NMS Plan Notice have been submitted under OMB number 3235-0671 which relates to Rule 613 - Consolidated Audit Trail-Filing a National Market System Plan. Because those burdens are in addition to the existing burdens and do not seek to change the burdens associated with the submission approved by OMB on December 21, 2015, the supporting statement accompanying the submission for Rule 613 - Consolidated Audit Trail-Filing a National Market System Plan (3235-0671) which was approved by OMB on December 21, 2015, was submitted to OMB along with the CAT NMS Plan Notice supporting statement. The existing collection of information (Rule 613 - Consolidated Audit Trail-Filing a National Market System Plan) pertained to the development and

## 2. Purposes and Use of the Information Collection

The Commission believes that the CAT NMS Plan would 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.<sup>13</sup> 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.<sup>14</sup> The Central Repository is required to receive, consolidate and retain the data required to be submitted by the Participants and their broker-dealer members.<sup>15</sup> Participant and Commission staffs would have access to the data for regulatory purposes.<sup>16</sup>

### 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

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submission of an NMS plan, and such NMS plan has been developed and submitted, and published for comment in the CAT NMS Plan Notice and subsequently approved by the Commission on November 15, 2016. See note 12, infra. Therefore, the Commission deems such collection of information complete.

<sup>12</sup> See Securities Exchange Act Release No. 79318 (November 15, 2016), 81 FR 84696 (November 23, 2016).

<sup>13</sup> 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).

<sup>14</sup> See 17 CFR 242.613(e)(1).

<sup>15</sup> 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.

<sup>16</sup> See 17 CFR 242.613(e)(2).

accurate analysis of market activity for reconstruction of broad-based market events in support of regulatory decisions.

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).<sup>17</sup> 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.<sup>18</sup> 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.<sup>19</sup>

D. Surveillance

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<sup>17</sup> See 17 CFR 242.613(e)(7).

<sup>18</sup> 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 1901 and Phlx Rule 1084.

<sup>19</sup> 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 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 the consolidated audit trail.<sup>20</sup> 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.<sup>21</sup> The CAT NMS Plan states that the Chief Compliance Officer would oversee the assessment.<sup>22</sup> 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. Document on Expansion to Other Securities

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

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<sup>20</sup> See CAT NMS Plan, supra note 4, at Section 6.10(a). See also 17 CFR 242.613(f).

<sup>21</sup> 17 CFR 242.613(b)(6). As discussed in Section 12.A.e., infra, the Commission has amended Section 6.6 of the Plan to change the frequency of the assessment contemplated by Rule 613(b)(6) from biannual to annual.

<sup>22</sup> See CAT NMS Plan, supra note 4, at Section 6.6(a)(ii). See also id. at Section 6.6(a)(i).

trail information regarding certain products that are not NMS securities.<sup>23</sup> A document outlining a possible expansion of the consolidated audit trail could help inform the Commission about the Participants' strategy for potentially accomplishing such an expansion over a reasonable period of time. Moreover, such document would aid the Commission in assessing the feasibility and impact of possible future proposals by the Participants to include such additional securities and transactions in the consolidated audit trail.

### 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,<sup>24</sup> which is required to receive, consolidate and retain the data required to be submitted electronically by the Participants and their members.<sup>25</sup> The CAT NMS Plan requires CAT Reporters to report data to the Central Repository either in a uniform electronic format, or in a manner that would allow the Central Repository to convert the data to a uniform electronic format.<sup>26</sup> 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.<sup>27</sup> 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.<sup>28</sup>

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

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<sup>23</sup> See 17 CFR 242.613(i). See also *supra* note 8.

<sup>24</sup> See 17 CFR 242.613(e)(1).

<sup>25</sup> *Id.*

<sup>26</sup> See CAT NMS Plan, *supra* note 4, at Appendix C, Section A.1(b).

<sup>27</sup> See *id.* at Section 6.5(a)(ii). See also 17 CFR 242.613(e)(7), (e)(8).

<sup>28</sup> See CAT NMS Plan, *supra* note 4, at Section 6.10(a). See also 17 CFR 242.613(f).

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."<sup>29</sup> 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 would bring audit trail data related to trading on all venues into the Central Repository where it could be accessed by all regulators.

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.

#### 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).<sup>30</sup> 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;<sup>31</sup> (B) if still appropriate, whether such information should continue to be separately collected or should instead be

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<sup>29</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(ii)(A).

<sup>30</sup> See Rule 613(a)(1)(ix).

<sup>31</sup> See Rule 613(a)(1)(ix)(A).



incorporated into the consolidated audit trail;<sup>32</sup> 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).<sup>33</sup>

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 proposed rule changes to implement the rule modifications or deletions and elimination of the relevant rules and systems.<sup>34</sup>

### 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.<sup>35</sup> 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 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

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<sup>32</sup> See Rule 613(a)(1)(ix)(B).

<sup>33</sup> See Rule 613(a)(1)(ix)(C).

<sup>34</sup> See CAT NMS Plan, *supra* note 4, at Appendix C, Section C.9.

<sup>35</sup> 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).

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.<sup>36</sup>

The Commission estimates that as of December 2015, there were approximately 1,234 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.<sup>37</sup>

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 two years of approval.<sup>38</sup> 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.

#### 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

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<sup>36</sup> 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 10, 2019. Approximately 799 firms that are excluded or exempt from OATS would incur CAT reporting obligations under the Plan. See CAT NMS Plan Order, supra note 12, at Section V.F.1.c.(2)B.

<sup>37</sup> 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).

<sup>38</sup> See CAT NMS Plan, supra note 4, at Section 6.4; see also 17 CFR 242.613(a)(3)(v) and (vi).

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.

#### Inconsistencies with Guidelines in 5 CFR 1320.5(d)(2)

The information collection "Data Collection and Reporting" would require respondents to record and report information to the Central Repository information more frequently than quarterly;<sup>39</sup> 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,<sup>40</sup> 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.<sup>41</sup>

In addition, the "Data Collection and Reporting" information collection would require respondents to submit confidential information to the Central Repository, such as the terms of an order,<sup>42</sup> customer account information,<sup>43</sup> and information sufficient to identify a customer.<sup>44</sup> 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 information<sup>45</sup> is intended to enable Participants to better monitor trading through use of

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<sup>39</sup> The CAT NMS Plan did not provide an estimated frequency of reporting for Participants and broker-dealers.

<sup>40</sup> See 17 CFR 242.613(c)(3); see also CAT NMS Plan, supra note 4, at Section 6.3(b), Section 6.4(b).

<sup>41</sup> See 17 CFR 242.613(c)(4); see also CAT NMS Plan, supra note 4, at Section 6.4(b).

<sup>42</sup> See 17 CFR 242.613(c)(7); see also CAT NMS Plan, supra note 4, at Section 6.3(d), Section 6.4(d).

<sup>43</sup> 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).

<sup>44</sup> See 17 CFR 242.613(c)(7)(viii)(A); see also CAT NMS Plan, supra note 4, at Section 6.4(ii)(A)(C).

<sup>45</sup> 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 information<sup>46</sup> and these requirements are detailed in the CAT NMS Plan.<sup>47</sup>

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. Rule 613(b)(6) provides that the CAT NMS Plan must require the Participants to submit to the Commission the written assessment at least every two years once the Plan is effective.<sup>48</sup> As discussed below,<sup>49</sup> the Commission has amended this requirement in the CAT NMS Plan to change the frequency of the assessment contemplated by Rule 613(b)(6) from biannual to annual. 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.

### Consultations Outside the Agency

The Commission requested comment on the collection of information requirements in the CAT NMS Plan Notice in April 2016.<sup>50</sup> The Commission received a number of comments on the costs associated with the information collections required by Rule 613.<sup>51</sup>

#### A. Costs to Participants –Central Repository

One commenter provided an alternate estimate for Central Repository ongoing costs of \$28 million to \$36 million.<sup>52</sup> The commenter did not provide additional information or analysis to support this estimate, but the Commission notes that the commenter cited a study of the costs of the Volcker Rule in support of estimates for costs

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<sup>46</sup> See 17 CFR 242.613(a)(1)(iv), 613(b)(6), 613(e)(4)(i), 613(e)(4)(i)(A).

<sup>47</sup> 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.

<sup>48</sup> See 17 CFR 242.613(b)(6); *see also* CAT NMS Plan, *supra* note 4, at Section 6.6(a)(i).

<sup>49</sup> See Section 12.A.e., *infra*.

<sup>50</sup> See Securities Exchange Act Release No. 77724 (April 27, 2016), 81 FR 30613 (May 17, 2016). The public comments received on the CAT NMS Plan Notice have been posted to the Commission’s public website and available at <https://www.sec.gov/comments/4-698/4-698.shtml>.

<sup>51</sup> The Commission notes that the Commission’s cost estimates are discussed in detail in Section V.F. of the CAT NMS Plan Order. See CAT NMS Plan Order, *supra* note 12, at Section V.F.

<sup>52</sup> Data Boiler Letter at 15.

to broker-dealers.<sup>53</sup> If the commenter is basing its estimates on the costs expected from the Volcker Rule, the Commission notes that the requirements of Rule 613 are significantly different than the requirements of the Volcker Rule. The Commission is not changing its Central Repository cost estimates in response to this commenter. The Commission also notes that the estimates provided in the CAT NMS Plan Notice (and updated in the Participants' Response Letter III, discussed below) are the result of a competitive bidding process specific to the CAT and the Commission deems them credible. The Participants' Response Letter III contains estimates that differ from those discussed in the CAT NMS Plan Notice to reflect the fact that Participants have narrowed the number of Bidders down to the final three and the range of potential cost estimates is therefore narrower as well.<sup>54</sup> Based on this updated information, the Commission now believes that the costs to build the Central Repository range from \$37.5 million to \$65 million and annual operating costs range from \$36.5 million to \$55 million.<sup>55</sup>

#### B. Costs to Participants – Data Collection and Reporting

One commenter believed that estimates of current data reporting costs to Participants were “grossly underestimated,”<sup>56</sup> and stated that the implementation cost estimate of \$17.9 million for Participants was “not too far off,” but felt the Participants' estimated costs for legal and consulting services and additional employees were not reliable. The Commission has considered the comment and continues to believe that the Participant cost estimates presented in the Plan are credible and is thus not changing its cost estimates of Participants' Data Recording and Reporting in response to the commenter. All 19 Participants responded to the Participants Study<sup>57</sup> that served as the basis of the estimates, and most Participants have experience collecting audit trail data as well as expertise in the requirements of the CAT and in their business practices. The commenter did not provide an explanation for why the Participants were unable to reasonably estimate their own current data reporting costs.

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<sup>53</sup> Data Boiler Letter at 15.

<sup>54</sup> Response Letter III at 14–15. The Commission notes that the Participants submitted three letters responding to commenters. See Letters from Participants to Brent J. Fields, Secretary, Commission, dated September 2, 2016 (“Response Letter I”), September 23, 2016 (“Response Letter II”) and October 7, 2016 (“Response Letter III”).

<sup>55</sup> The Commission uses the upper end of cost ranges for its estimates of aggregate costs to the industry. See CAT NMS Plan Order, supra note 12, at Section V.F.2.a.

<sup>56</sup> Data Boiler Letter at 35.

<sup>57</sup> There were 19 Participants at the time the Participants conducted the study. The study collected information from the Participants about current audit trail reporting costs under the existing regulatory reporting framework and the potential costs of reporting to the Central Repository (the “Participants Study”). See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(i)(A)(1).

### C. Costs to Participants – Surveillance

One commenter implied that savings on surveillance were unlikely, and stated that the lack of an analytical framework did not facilitate the identification of suspicious activities.<sup>58</sup> Another commenter noted that uncertainties in the manner in which regulators will access data in the Central Repository create significant cost uncertainties, especially if the Participants must use bulk extraction to create copies of CAT Data for analysis within their own infrastructure.<sup>59</sup> On the other hand, the commenter asserted that the CAT could permit more efficient market surveillance activity by the Participants, which would allow for cost savings.<sup>60</sup> The Commission has considered these comments and continues to believe that the Participant cost estimates presented in the Plan are credible and is not changing its surveillance cost estimates in response to commenters. As noted above, all 19 Participants<sup>61</sup> responded to the Participants Study, and most Participants have experience collecting audit trail data as well as expertise in the requirements of CAT as well as in their business practices. Regarding the comment about the inclusion of an analytical framework in surveillance cost estimates in the Plan, the Plan does incorporate analytical framework;<sup>62</sup> therefore, the Commission believes that Participant cost estimates already account for such a framework.

### D. Costs to Broker-Dealers – Data Collection and Reporting

The Commission received comments on the reliability of its Outsourcing Cost Model for small broker-dealers and its re-estimation of costs.<sup>63</sup> One commenter believed that the Commission's estimates of service bureau charges for a small firm were reasonable.<sup>64</sup> Another commenter noted that Outsourcers must expend internal resources even when relying on their service providers to accomplish current data reporting.<sup>65</sup> A third commenter stated that broker-dealers that clear for others may have higher

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<sup>58</sup> Data Boiler Letter at 35.

<sup>59</sup> Securities Industry and Financial Markets Association (“SIFMA”) Letter at 33.

<sup>60</sup> SIFMA Letter at 18.

<sup>61</sup> See supra note 57.

<sup>62</sup> See CAT NMS Plan Order, supra note 12, at Section V.E.2.c(1).

<sup>63</sup> See CAT NMS Plan Notice, supra note 11, at Section IV.F.1.c.(2)B.ii., for a discussion of the Commission's Outsourcing Cost model.

<sup>64</sup> Data Boiler Letter at 36.

<sup>65</sup> Financial Information Forum (“FIF”) Letter at 34. This commenter references electronic blue sheet (“EBS”) reporting, but indicates that broker-dealers sometimes must also be involved in preparing EBS request responses.

implementation costs since they may have to support more broker-dealers as a result of the CAT.<sup>66</sup>

With respect to the comment that the Outsourcing Cost Model does not account for internal expenses, the Commission notes that its cost estimates explicitly assume that Outsourcers have employee expenses that cover these activities.<sup>67</sup> In response to the commenters concerned that the Commission's estimates do not account for an increase in costs for broker-dealers that clear for other broker-dealers or provide support to introducing broker-dealers, the Commission continues to believe in the reliability of the analysis of broker-dealers implementation costs presented in the CAT NMS Plan Notice, and notes that the Reporters Study estimates for large broker-dealers are likely to include these expenses because respondents are likely to include broker-dealers that provide these services. The Commission acknowledges, however, that there are some broker-dealers that would be classified as Outsourcers or new reporters and the additional implementation costs that these firms face due to clearing for other broker-dealers or supporting introducing broker-dealers are not captured by the Outsourcing Cost Model. The Commission cannot estimate the number of broker-dealers that would bear these costs because the Commission lacks data on the number of broker-dealers that clear for other broker-dealers that would be classified as new reporters or Outsourcers. Furthermore, the Commission lacks data to estimate the magnitude of these costs because the Plan does not provide this data and the Commission is unaware of any data available to it that it could use to estimate these costs.

The Commission also received several comments on uncertainties in the cost estimates for broker-dealers arising from not knowing the choice of Plan Processor,<sup>68</sup> not having technical specifications,<sup>69</sup> differences in Bids preventing broker-dealers from providing more definitive cost estimates,<sup>70</sup> and a lack of detail in the CAT NMS Plan.<sup>71</sup>

In response to comment letters that identified these sources of uncertainties related to the costs broker-dealers will incur, the Commission acknowledges that such costs depend on the technical specifications, which are likely to remain unknown until the Plan Processor is selected. The Commission also notes that final Bids will not be submitted until after the Plan is approved, so the Commission is unable to quantify the degree of variation in broker-dealer implementation costs across Bids.

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<sup>66</sup> Thomson Reuters Letter, at 3–4.

<sup>67</sup> See CAT NMS Plan Notice, supra note 11, at 30723.

<sup>68</sup> Thomson Reuters Letter at 4; Financial Services Institute (“FSI”) Letter at 6.

<sup>69</sup> See, e.g., Financial Services Roundtable (“FSR”) Letter at 10; and Fidelity Letter at 6.

<sup>70</sup> FSI Letter at 6.

<sup>71</sup> SIFMA Letter at 42 and FSI Letter at 6.

Additionally, the Commission received a number of comments relating to the costs of the individual components comprising the broker-dealer data collection and reporting requirement, such as customer information, the open/close indicator for equities, listing exchange symbology, allocation report timestamp, and quote sent time. In the CAT NMS Plan Notice, the Commission provided aggregate burden hour and external cost estimates for the broker-dealer data collection and reporting requirement of Rule 613. Although the costs of the following specific data elements were not discussed in the CAT NMS Plan Notice Paperwork Reduction Act analysis, the Commission has considered these comments because they relate to the overall data collection and reporting information collection for broker-dealers.

a. Customer Information

In the CAT NMS Plan Notice, the Commission stated that it believed the requirement in the CAT NMS Plan to report customer information for each transaction represents a significant source of costs.<sup>72</sup> One commenter believed that the costs for providing customer information to the Central Repository would comprise a significant proportion of costs to the total industry and that the costs associated with the management of sensitive information could increase costs.<sup>73</sup> Two commenters stated that including Customer Identifying Information on new order reports would result in significant costs for the industry.<sup>74</sup> In Response Letter I, the Participants suggested that the Commission amend (and the Commission has accordingly amended) the CAT NMS Plan to clarify that Customer Identifying Information and Customer Account Information would not be reported with the original receipt or origination of an order.<sup>75</sup>

One commenter requested clarification that only active accounts would be reported as part of the customer definition process, which could reduce costs incurred for reporting customer information.<sup>76</sup> In Response Letter I, the Participants suggested that the Commission amend the Plan to add a definition of “Active Account,” defined as an account that has had activity in Eligible Securities within the last six months. Additionally, the Participants suggested that the Commission amend (and the Commission has amended) Section 6.4(d)(iv) of the Plan by clarifying that each broker-dealer must submit an initial set of customer information for Active Accounts at the commencement of reporting to the Central Repository, as well as any updates, additions, or other changes in customer information, including any such customer information for any new Active Accounts.<sup>77</sup>

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<sup>72</sup> See CAT NMS Plan Notice, *supra* note 11, at Section IV.F.3.a.

<sup>73</sup> Data Boiler Letter at 37.

<sup>74</sup> Thomson Reuters Letter at 8–9; FIF Letter at 9–10, 86.

<sup>75</sup> Response Letter I at 34.

<sup>76</sup> FIF Letter at 10.

<sup>77</sup> Response Letter I at 35.



The Commission considered these comments and the Participants' responses and continues to believe that the requirement in the CAT NMS Plan to report customer information represents a significant proportion of total costs to the industry. The Commission is not amending its broker-dealer data collection and reporting external cost estimates in response to these comments. Commenters did not provide cost estimates that would allow the Commission to estimate such costs, and the amendments to the Plan clarify that the Plan does not require customer information to be reported on order origination.

b. Open/Close Indicator for Equities

The Commission received comments on the costs to report an open/close indicator on orders to buy or sell equities. Several commenters agreed with the Commission's analysis that an open/close indicator represents a significant proportion of costs to the Plan.<sup>78</sup> Two commenters indicated that it would require significant process changes across multiple systems,<sup>79</sup> and one provided a list of the different types of systems impacted by the open/close indicator.<sup>80</sup> Some commenters mentioned that the open/close indicator is currently not populated for equities.<sup>81</sup> Further, several commenters implied that the costs of the open/close indicator were not included in the cost estimates in the CAT NMS Plan Notice.<sup>82</sup> In Response Letter I, the Participants indicated that the open/close indicator is not captured on equities or on certain options transactions such as Options' Market Maker transactions.<sup>83</sup>

The Commission considered these comments and is modifying the Plan to eliminate the requirement to report an open/close indicator for equities and on Options Market Maker quotations. Although the Commission believes this will reduce the compliance costs for broker-dealers, Participants, and the Central Repository, the Commission cannot quantify the savings and is thus not amending its external cost estimates in response to commenters. The Participants' statement that open/close indicators are not reported on some options orders is consistent with the Commission's experience and the analysis in the CAT NMS Plan Notice. While the economic analysis in the Notice did not explicitly separate the costs associated with an open/close indicator

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<sup>78</sup> Thomson Reuters Letter at 9; SIFMA Letter at 35–36; FIF Letter at 83–86.

<sup>79</sup> SIFMA Letter at 35; FIF Letter at 4, 84.

<sup>80</sup> FIF Letter at 84.

<sup>81</sup> Thomson Reuters Letter at 9, FIF Letter at 4, 83–85, SIFMA Letter at 35.

<sup>82</sup> Specifically, one commenter stated that the inclusion of the open/close indicator for equities was a surprise (FIF Letter at 84), and two commenters wanted additional cost benefit analysis on the open/close indicator. FIF Letter at 84; SIFMA Letter at 36.

<sup>83</sup> Response Letter I at 21–22.

for equities and an open/close indicator for options, the Commission believes that the costs of the open/close indicator for options are included in the cost estimates of the Notice. However, because the Plan will no longer require the reporting of the open/close indicator for Options Market Maker quotations, the Commission now believes there will be an additional cost savings associated with not having to report this indicator as part of CAT.

#### c. Listing Exchange Symbology

In the CAT NMS Plan Notice, the Commission explained its belief that the requirement to use listing exchange symbology could represent a significant source of costs,<sup>84</sup> because broker-dealers do not necessarily use listing exchange symbology when placing orders on other exchanges or off-exchange. One commenter stated that it did not expect the use of listing exchange symbology to be much more costly than the use of existing symbology.<sup>85</sup> However, another commenter suggested that accepting only listing exchange symbology is costly and invasive.<sup>86</sup> One other commenter stated that listing exchange symbology would also be a significant source of costs to options.<sup>87</sup> The Participants responded in Response Letter II that it was their understanding that all broker-dealers subject to OATS or EBS reporting requirements currently use the listing exchange symbology when submitting such reports.<sup>88</sup> Further, they stated in Response Letter III that broker-dealers currently use symbology translation solutions when submitting data to exchanges or when submitting to regulatory reporting systems such as OATS or EBS.<sup>89</sup>

The Commission considered the comments and now believes that the incremental cost for CAT Reporters to translate from their existing symbology to listing exchange symbology would be less than as discussed in the CAT NMS Plan Notice and would not be a substantial contributor to aggregate costs. The Commission is not amending its external cost estimates for broker-dealer data collection and reporting in response to these comments.

#### d. Allocation Report Timestamp

Several commenters noted that there would be costs associated with reporting timestamps on allocation reports.<sup>90</sup> One of these commenters mentioned that the

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<sup>84</sup> See CAT NMS Plan Notice, *supra* note 11, at 30730–731.

<sup>85</sup> FIF Letter at 12, 95.

<sup>86</sup> Data Boiler Letter at 37–38.

<sup>87</sup> Bloomberg Letter at 5.

<sup>88</sup> Response Letter II at 7.

<sup>89</sup> Response Letter III at 13.

<sup>90</sup> FSR Letter at 9; SIFMA Letter, at 35; FIF Letter, at 3, 4, 11, 86–89.

requirement to report allocation timestamps would mean that broker-dealers would incur unnecessary costs to acquire additional resources.<sup>91</sup> One commenter estimated that the currently proposed allocation timestamp requirement, with a one millisecond timestamp granularity and a 50-millisecond clock offset, would cost the industry \$88,775,000 in initial implementation costs and \$13,925,000 in ongoing annual costs.<sup>92</sup> The commenter further estimated that a modified allocation timestamp requirement, with a one second timestamp granularity and a one second clock offset, would cost the industry \$44,050,000 in initial implementation costs and \$5,035,833 in ongoing annual costs.<sup>93</sup> In Response Letter I, the Participants recommended an amendment to the Plan that would specify a one-second timestamp for allocation time on allocation reports,<sup>94</sup> and the Commission is amending the Plan to reflect this recommendation.

The Commission considered these comments and is increasing its external cost estimates for the broker-dealer data collection and reporting in response to a comment. The Commission is now adding one commenter's estimate of \$44,050,000 in implementation costs and \$5,035,833 in ongoing costs to the estimates of costs to broker-dealers.<sup>95</sup> The Commission believes the cost estimates received to be credible because they are based on a survey of industry participants who are informed of the allocation timestamp requirement and the changes that broker-dealers would need to make to comply with the requirement.

#### e. Quote Sent Time

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 years.<sup>96</sup> The Commission concluded that this requirement did not represent a significant source of costs. 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. The commenter further stated that this is “not a trivial cost for providing one data element to the consolidated audit trail.”<sup>97</sup> The Commission continues to believe that

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<sup>91</sup> FSR Letter at 9.

<sup>92</sup> FIF Letter at 87–89.

<sup>93</sup> FIF Letter at 88, Table 6.

<sup>94</sup> Response Letter I at 37–38.

<sup>95</sup> See CAT NMS Plan Order, supra note 12, at Section V.F.3.a(4). The total cost estimates of the CAT Plan reflect these implementation and ongoing costs.

<sup>96</sup> 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).

<sup>97</sup> FIF Letter at 65.

the estimates in the CAT NMS Plan Notice are credible estimates for the costs for Options Market Makers to send the Quote Sent Time field to exchanges. In response to the comment, the Commission notes that the implied annual costs would be much lower than the five year costs and the Commission agrees that the costs of quote sent time are significant. The Quote Sent Time cost estimate was not included in the cost estimates in the Notice; therefore the Commission is now adding this cost to its estimates for Options Market Maker data collection and reporting.<sup>98</sup> 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,<sup>99</sup> as provided in the burden hours and external cost estimates discussion for Options Market Makers.

#### 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 and reporting of confidential information, including Personally Identifiable Information<sup>100</sup> (“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.<sup>101</sup> 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

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<sup>98</sup> See CAT NMS Plan Order, supra note 12, at Section V.F.1.c(2)B.

<sup>99</sup> The Commission assumes that the ratio of ongoing to implementation costs for Quote Sent Time would be the same as the ratio of ongoing to implementation costs for the other costs incurred by broker-dealers for data collection and reporting to CAT. See CAT NMS Plan Order, supra note 12, at Section V.F.3.a(6).

<sup>100</sup> 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).

<sup>101</sup> 17 CFR 242.613(a)(1)(iv).

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.<sup>102</sup> 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.<sup>103</sup> 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.<sup>104</sup> 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.<sup>105</sup>

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.<sup>106</sup> 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.<sup>107</sup>

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.<sup>108</sup> 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.<sup>109</sup> The Technical Specifications, which the Plan Processor must publish, must include a detailed description of the data security standards for the consolidated audit trail.<sup>110</sup>

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<sup>102</sup> 17 CFR 242.613(b)(6).

<sup>103</sup> 17 CFR 242.613(e)(4)(i).

<sup>104</sup> 17 CFR 242.613(e)(4)(i)(A).

<sup>105</sup> Id.

<sup>106</sup> See CAT NMS Plan, supra note 4, at Section 6.5(f)(i), (iv).

<sup>107</sup> Id. at Section 6.5(f)(i).

<sup>108</sup> Id. at Sections 6.1(m), 6.12.

<sup>109</sup> Id. at Section 6.2(b).

<sup>110</sup> Id. at Section 6.9.

Appendix D of the CAT NMS Plan sets forth minimum data security requirements for CAT that the Plan Processor must meet.<sup>111</sup> 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.<sup>112</sup> Additional requirements regarding data storage, data access, breach management, and PII data are also specified in Appendix D.<sup>113</sup> 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,<sup>114</sup> 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.<sup>115</sup> However, a Participant may use the Raw Data<sup>116</sup> it reports to the Central Repository for “commercial or other” purposes if not prohibited by applicable law, rule or regulation.<sup>117</sup>

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

As noted in Item 10 above, the Commission believes that the CAT NMS Plan would require the collection and reporting of certain PII<sup>118</sup> in order to uniquely identify

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<sup>111</sup> Id. at Appendix D, Section 4.

<sup>112</sup> Id. at Appendix D, Section 4.1.2.

<sup>113</sup> Id. at Appendix D, Section 4.1.3–4.1.6.

<sup>114</sup> 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.

<sup>115</sup> See CAT NMS Plan, supra note 4, at Section 6.5(f)(ii), (g).

<sup>116</sup> 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.

<sup>117</sup> Id. at Section 6.5(f)(i).

<sup>118</sup> The CAT NMS Plan defines PII as including: social security number, tax identifier number or similar information; and “Customer Identifying Information” and “Customer Account Information.” “Customer Account Information” is defined in the Plan to include, but not be limited to “account number, account type, customer type, date account opened, and large trader

customers in the consolidated audit trail, but not of the categories of questions of a sensitive nature required to be described in this Item. Specifically, the CAT NMS Plan proposes to require broker-dealers to submit an initial set of “Customer Identifying Information” to the Central Repository, including, as applicable to individuals, name, address, date of birth, individual tax payer identification number (“ITIN”)/social security number (“SSN”), and individual’s role in the account (e.g., primary holder, joint holder, guardian, trustee, person with the power of attorney).<sup>119</sup> The Commission believes that the ability to uniquely identify customers is critical to the efficacy and usefulness of the consolidated audit trail, and that only the collection and use of PII will allow such identification.

Currently, only a few data sources, which typically cover only a small portion of order lifecycles, include information regarding customers.<sup>120</sup> Further, the customer information in these data sources is often incomplete and unreliable and the data is currently only obtainable by regulators making requests to broker-dealers directly. The

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identifier (if applicable); except, however, that (a) in those circumstances in which an Industry Member has established a trading relationship with an institution but has not established an account with that institution, the Industry Member will (i) provide the Account Effective Date in lieu of the “date account opened”; (ii) provide the relationship identifier in lieu of the “account number”; and (iii) identify the “account type” as a “relationship”; (b) in those circumstances in which the relevant account was established prior to the implementation date of the CAT NMS Plan applicable to the relevant CAT Reporter (as set forth in Rule 613(a)(3)(v) and (vi)), and no “date account opened” is available for the account, the Industry Member will provide the Account Effective Date” in several circumstances enumerated in the CAT NMS Plan. The Commission notes that the information contained in “(a)” pertains to institutional customers (legal entities) and that “(b)” pertains to institutional, proprietary or retail customers (legal entities and individuals). See CAT NMS Plan, *supra* note 4, at Section 1.1 (defining “Customer Identifying Information” and Customer Account Information”). The Commission also notes that the CAT NMS Plan defines an “Industry Member” to mean a member of a national securities exchange or a member of a national securities association. *Id.*

<sup>119</sup> “Customer Identifying Information” also applies to legal entities. Under the CAT NMS Plan, this information includes for legal entities: name, address, and Employer Identification Number (“EIN”)/Legal Entity Identifier (“LEI”) or other comparable common entity identifier, if applicable, provided, however, that an Industry Member that has an LEI for a Customer must submit the Customer’s LEI in addition to other information of sufficient detail to identify a Customer.

<sup>120</sup> The Commission notes that Participant audit trails typically do not provide customer information.

inclusion of Customer-IDs<sup>121</sup> in the CAT would significantly improve regulators' surveillance capabilities, including surveillance designed to detect market manipulation and insider trading. Because currently available data do not uniquely identify customers, Participants performing insider trading and manipulation surveillance could be unable to identify some suspicious trading and must undertake multiple steps to request additional information after identifying suspect trades. Further, data available during exams often require regulatory staff to link multiple data sources to analyze customer trading. These linking processes can be labor-intensive and require the use of algorithms that may not link with 100% accuracy. The Commission believes that with the CAT, regulators would be able to conduct certain types of exams more efficiently because of the inclusion of Customer-IDs in CAT. The inclusion and expected improvement in the accuracy of customer identifying data could allow regulators to review the activity of specific market participants more efficiently; currently, identifying the activity of a single market participant across the markets is cumbersome and prone to error. This information would be particularly helpful in identifying insider trading, manipulation and other potentially violative activity that depends on the identity of market participants. Customer information could also be helpful to regulators in more efficiently identifying investors who qualify for disgorgement proceeds and in estimating such disgorgement proceeds.

Rule 613 provides that the CAT NMS Plan must require broker-dealers to report "information of sufficient detail to identify the customer" and "customer account information" to the Central Repository for the original receipt or origination of an order. Rule 613 does not require the reporting of SSNs as part of the information to identify a customer; however, as permitted by an exemption granted by the Commission,<sup>122</sup> the CAT NMS Plan proposed to require the reporting of SSNs, along with other identifying information, by broker-dealers to the Central Repository.<sup>123</sup> In their request for exemptive relief, the Participants represented that the SROs considered an approach that would have solely utilized account numbers, rather than account numbers and other unique identifying information, such as SSNs.<sup>124</sup> The SROs concluded that relying solely on account numbers may raise issues regarding duplicate numbers under certain circumstances, and represented that the approach proposed was preferable.<sup>125</sup> Rule 613 and the CAT NMS Plan include requirements for enhanced safeguards with respect to the

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<sup>121</sup> Rule 613 requires the use of a unique Customer-ID that identifies the Customer involved in CAT Reportable Events. Pursuant to the Plan, the Customer-ID would be generated from the Firm Designated ID, and the Plan Processor would create a unique Customer-ID that would be consistent across a Customer's activity regardless of the originating broker-dealer. See Rule 613(c)(7); see also CAT NMS Plan, supra note 4, at Appendix D, Section 3.

<sup>122</sup> See Exemption Order, supra note 7.

<sup>123</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section A.1(a)(iii).

<sup>124</sup> See Letter from Robert Colby, FINRA, on behalf of the Participants, to Brent J. Fields, Secretary, Commission, dated January 30, 2015, at 21.

<sup>125</sup> Id.



privacy and confidentiality of consolidated audit trail data, including customer information. Further, although Rule 613 does not require the reporting of SSNs, and that this information would not be reported by broker-dealers to the Commission, the Commission will establish appropriate secure protections within the agency to help ensure the confidentiality of the records proposed to be accessible to the Commission pursuant to the Rule.

The Commission notes that, at the earliest, broker-dealers would be required to report data, including customer information, in November 2018. Pursuant to Rule 608(b)(2), the Commission shall approve a proposed NMS plan that it finds is necessary or appropriate in the public interest, for the protection of investors and the maintenance of fair and orderly markets, to remove impediments to, and perfect the mechanisms of, a national market system, or otherwise in furtherance of the purposes of the Act, within 180 days of publication of a notice of a proposed NMS Plan.<sup>126</sup> A notice of the CAT NMS Plan was published in the Federal Register on May 17, 2016. The Commission approved the CAT NMS Plan on November 15, 2016.<sup>127</sup> Broker-dealers are required to begin reporting data, including customer information, to the Central Repository within two years of approval of the CAT NMS Plan.<sup>128</sup> In accordance with these dates, broker-dealers will be required to report data including PII in November 2018.

To the extent required, the Commission will develop a Systems of Records Notice (“SORN”) and conduct a Privacy Impact Assessment.

## 12. Burden of Information Collection

Rule 613 applies to the 21 Participants (the 20 national securities exchanges and the one national securities association (FINRA)) currently registered with the Commission.<sup>129</sup> The Commission believes that Rule 613 applies to 1,800 broker-

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<sup>126</sup> 17 CFR 242.608(b)(2).

<sup>127</sup> See supra note 12.

<sup>128</sup> 17 CFR 242.613(a)(3)(v).

<sup>129</sup> The Participants are: Bats BZX Exchange, Inc., Bats BYX Exchange, Inc., BOX Options Exchange LLC, C2 Options Exchange, Incorporated, Chicago Board Options Exchange, Incorporated, Chicago Stock Exchange, Inc., Bats EDGA Exchange, Inc., Bats EDGX Exchange, Inc., Financial Industry Regulatory Authority, Inc., International Securities Exchange, LLC, ISE Gemini, LLC, Miami International Securities Exchange LLC, NASDAQ BX, Inc., NASDAQ PHLX LLC, The NASDAQ Stock Market LLC, National Stock Exchange, Inc., New York Stock Exchange LLC, NYSE MKT LLC, and NYSE Arca, Inc. ISE Mercury, LLC and Investors Exchange LLC will become Participants in the CAT NMS Plan and are thus accounted for as Participants for purposes of this Paperwork Reduction Act Analysis. Since the publication of the CAT NMS Plan

dealers.<sup>130</sup>

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 issued a request for proposal soliciting Bids from entities to act as the consolidated audit trail's Plan Processor.<sup>131</sup> Bidders were asked to provide total one-year and annual recurring cost estimates to estimate the costs to the Participants for implementing and maintaining the Central Repository.<sup>132</sup> There are currently three remaining Bidders, any of which could be selected to be the Plan Processor. The Plan Processor would be responsible for building, operating, administering and maintaining the Central Repository.

The Plan's Operating Committee, which consists of one voting representative of each Participant,<sup>133</sup> would be responsible for the management of the CAT NMS, LLC

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Notice, the Investors Exchange LLC became a registered national securities exchange on June 17, 2016. See Securities Exchange Act Release No. 78101 (June 17, 2016), 81 FR 41142 (June 23, 2016). The Commission has adjusted its estimates pertaining to the Participants due to the addition of IEX (from 20 Participants in the CAT NMS Plan Notice Paperwork Reduction Act analysis to 21 Participants in the CAT NMS Plan Order Paperwork Reduction Act analysis).

<sup>130</sup> The Commission understands that there are currently 4,138 broker-dealers; however, not all broker-dealers are expected to have CAT reporting obligations. The Participants report 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 understands that the remaining 2,338 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).

<sup>131</sup> See supra note 4.

<sup>132</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(i)(B). The CAT NMS Plan listed the following as primary drivers of Bid costs: (1) reportable volumes of data ingested into the Central Repository; (2) number of technical environments that would be have to be built to report to the Central Repository; (3) likely future rate of increase of reportable volumes; (4) data archival requirements; and (5) user support and/or help desk resource requirements. See id. at Section B.7(b)(i)(B).

<sup>133</sup> See id. at Section 4.2(a).

(“LLC”),<sup>134</sup> 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 would have the responsibility to authorize the following actions of the LLC: (1) interpreting the Plan;<sup>135</sup> (2) determining appropriate funding-related policies, procedures and practices consistent with Article XI of the CAT NMS Plan;<sup>136</sup> (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);<sup>137</sup> (5) entering into, modifying or terminating any Material Contract;<sup>138</sup> (6) making any Material Systems Change;<sup>139</sup> (7) approving the initial Technical Specifications or any Material Amendment to the Technical Specifications proposed by the Plan Processor;<sup>140</sup> (8) amending the Technical Specifications on its own motion;<sup>141</sup> (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;<sup>142</sup> (10) approving any recommendation by the CCO pursuant to Section 6.2(a)(v)(A) of the CAT NMS Plan;<sup>143</sup> (11) selecting the members of the Advisory Committee;<sup>144</sup> (12) selecting the Operating Committee chair;<sup>145</sup> and (13) determining to hold an Executive Session of the Operating Committee.<sup>146</sup>

Additionally, in managing the Central Repository, the Operating Committee would have the responsibility and authority, as appropriate, to: (1) direct the 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

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<sup>134</sup> The Participants have proposed to conduct the activities of the CAT through the LLC, a jointly owned limited liability company formed under Delaware state law. The LLC will create, implement and maintain the CAT.

<sup>135</sup> See CAT NMS Plan, supra note 4, at Section 4.3(a)(iii).

<sup>136</sup> See id. at Section 4.3(a)(vi).

<sup>137</sup> See id. at Section 4.3(b)(i).

<sup>138</sup> See id. at Section 4.3(b)(iv).

<sup>139</sup> See id. at Section 4.3(b)(v).

<sup>140</sup> See id. at Section 4.3(b)(vi).

<sup>141</sup> See id. at Section 4.3(b)(vii).

<sup>142</sup> See id. at Section 4.3(b)(iii).

<sup>143</sup> See id. at Section 4.3(a)(iv).

<sup>144</sup> See id. at Section 4.3(a)(ii).

<sup>145</sup> See id. at Section 4.3(a)(i).

<sup>146</sup> See id. at Section 4.3(a)(v).

necessary or appropriate;<sup>147</sup> (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;<sup>148</sup> (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;<sup>149</sup> (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;<sup>150</sup> (5) for both the CCO and CISO, render their annual performance reviews and review and approve their compensation;<sup>151</sup> (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;<sup>152</sup> (7) in conjunction with the Plan Processor, approve and regularly review (and update as necessary) SLAs governing the performance of the Central Repository;<sup>153</sup> (8) maintain a Compliance Subcommittee for the purpose of aiding the CCO as necessary;<sup>154</sup> 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.<sup>155</sup>

The CAT NMS Plan will also establish a Selection Committee comprised of one Voting Senior Officer from each Participant,<sup>156</sup> which is tasked with the review and evaluation of Bids and the selection of the Initial Plan Processor.<sup>157</sup> The Selection Committee would determine, by Majority Vote, whether Shortlisted Bidders will have the opportunity to revise their Bids.<sup>158</sup> The Selection Committee would review and evaluate all Shortlisted Bids, including any permitted revisions submitted by Shortlisted Bidders, and in doing so, may consult with the Advisory Committee (or the DAG until the Advisory Committee is formed) and such other Persons as the Selection Committee deems appropriate.<sup>159</sup> After receipt of any permitted revisions, the Selection Committee

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<sup>147</sup> See id. at Section 6.1(a).

<sup>148</sup> See id. at Section 4.6(b).

<sup>149</sup> See id. at Section 6.1(c).

<sup>150</sup> See id. at Section 6.1(e).

<sup>151</sup> See id. at Section 6.2(a)(iv) and Section 6.2(b)(iv).

<sup>152</sup> See id. at Section 6.1(n).

<sup>153</sup> See id. at Section 6.1(h).

<sup>154</sup> See id. at Section 4.12(b).

<sup>155</sup> See id. at Section 4.12(a).

<sup>156</sup> See id. at Section 5.1(a).

<sup>157</sup> See id. at Section 5.1.

<sup>158</sup> See id. at Section 5.2(d)(i).

<sup>159</sup> See id. at Section 5.2(d)(ii).

would select the Initial Plan Processor from the Shortlisted Bids in two rounds of voting where each Participant has one vote via its Voting Senior Officer in each round.<sup>160</sup> Following the selection of the Initial Plan Processor, the Participants would file with the Commission a statement identifying the Initial Plan Processor and including the information required by Rule 608.<sup>161</sup>

For its initial and ongoing internal 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,”<sup>162</sup> 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.”<sup>163</sup>

The Commission believes that the activities of the Operating Committee and the Selection 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.”<sup>164</sup> For the building and management of the Central Repository, the Selection Committee and the Operating Committee would have comparable responsibilities. The Selection Committee would be required to review and evaluate all Shortlisted Bids, including any permitted revisions submitted by Shortlisted Bidders, and then to select the initial Plan Processor from those Bids. As part of its overall management of the Central Repository, the Operating Committee would have responsibility for decisions associated with the technical requirements of the Central Repository.<sup>165</sup> Furthermore, the Operating Committee would be required to establish a

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<sup>160</sup> See id. at Section 5.2(e).

<sup>161</sup> See id. at Section 6.7(a)(i).

<sup>162</sup> See id. at Appendix C, Section B.7(b)(iii).

<sup>163</sup> See id.

<sup>164</sup> See id.

<sup>165</sup> For example, the Operating Committee would be required to authorize the following actions of the 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 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),

Selection Subcommittee to evaluate Bids received to select a successor Plan Processor,<sup>166</sup> and would also be required to authorize the selection of the members of the Advisory Committee,<sup>167</sup> comprising members of the Industry, to advise the Participants on the implementation, operation, and administration of the Central Repository.<sup>168</sup> Because the responsibilities of the Operating Committee and the Selection 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 initial and ongoing management of the Central Repository.

Each Participant would contribute an employee and a substitute for the employee to serve on the Operating Committee that would oversee the Central Repository. Additionally, each Participant would select a Voting Senior Officer to represent the Participant as a member of the Selection Committee responsible for the selection of the Plan Processor of the Central Repository.

The Commission estimates that, over the 12-month period after the effectiveness of the CAT NMS Plan within which the Participants would be required to select an initial Plan Processor<sup>169</sup> and begin reporting to the Central Repository,<sup>170</sup> each Participant would incur an initial internal burden of 686.05 burden hours associated with the management of the creation of the Central Repository and the selection of the Plan Processor (including filing with the Commission the statement identifying the Initial Plan Processor and including the information required by Rule 608), for an aggregate initial estimate of 14,407 burden hours.<sup>171</sup>

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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)).

<sup>166</sup> See id. at Section 4.3(b)(i).

<sup>167</sup> See id. at Section 4.3(a)(ii).

<sup>168</sup> See id. at Section 4.13(d).

<sup>169</sup> 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).

<sup>170</sup> 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).

<sup>171</sup> The Commission is basing this estimate on the internal burden estimate 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 “...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

The Operating Committee would continue to be responsible for the management of the Central Repository. The Commission estimates that the Participants would incur an ongoing annual internal burden of 686.05 burden hours associated with the continued management of the Central Repository, for an aggregate annual estimate of 14,407 burden hours across the Participants.<sup>172</sup>

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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. The Participants estimate that they have collectively contributed 20 FTEs in the first 30 months of the CAT NMS Plan development process”). The Commission believes the staff time incurred for the development of the CAT NMS Plan would be comparable to the staff time incurred for the activities required of the Operating Committee and the Selection Committee for the creation and management of the Central Repository once the Plan is effective).  $(20 \text{ FTEs} / 30 \text{ months}) = 0.667 \text{ FTEs per month}$  for all of the Participants to develop the CAT NMS Plan. Converting this into burden hours,  $(0.667 \text{ FTEs}) \times (12 \text{ months}) \times (1,800 \text{ burden hours per year}) = 14,407$  initial burden hours for all of the Participants to develop the CAT NMS Plan.  $(14,407 \text{ burden hours for all Participants} / 21 \text{ Participants}) = 686.05$  initial burden hours for each Participant associated with the management of the creation of the Central Repository and the selection of the Plan Processor.

<sup>172</sup> The Commission is basing this estimate on the internal 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 internal burden estimate for the development of the CAT NMS Plan as a cost 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 internal 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 and the Selection 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 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”).  $(20 \text{ FTEs} / 30 \text{ months}) = 0.667 \text{ FTEs per month}$  for all of the Participants to continue management of the Central Repository. Converting this into burden hours,  $(0.667$

The Commission estimates that it would take the Participants approximately 19,209.54 annualized burden hours to create and manage the Central Repository [(686.05 initial one-time burden hours amortized over three years) + (686.05 annual ongoing burden hours) = 914.74 hours] x (21 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.<sup>173</sup> 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.<sup>174</sup>

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.<sup>175</sup> 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 and software, FTE costs, and third-party providers to be incurred by the Participants to report CAT Data.<sup>176</sup>

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FTEs) x (12 months) x (1,800 burden hours per year) = 14,407 ongoing annual burden hours for all of the Participants to continue management of the Central Repository. (14,407 ongoing annual burden hours for all Participants / 21 Participants) = 686.05 ongoing annual burden hours for each Participant to continue management of the Central Repository.

<sup>173</sup> 17 CFR 242.613(c)(1). See also CAT NMS Plan, supra note 4, at Section 6.3.

<sup>174</sup> 17 CFR 242.613(c). See also CAT NMS Plan, supra note 4, at Section 6.3.

<sup>175</sup> 15 U.S.C. 78q(a); 17 CFR 240.17a-1.

<sup>176</sup> 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.



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 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 burden. 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;<sup>177</sup> and then (2) multiplied the quotient by 1,800 (the number of hours a full-time equivalent employee is estimated to work per year).

The CAT NMS Plan provides the following average cost that the Participants would expect to incur to adopt the systems changes needed to comply with the data reporting requirements of the consolidated audit trail: \$10,300,000 in aggregate FTE costs for internal operational, technical/development, and compliance functions.<sup>178</sup>

Based on this estimate provided in the CAT NMS Plan, the Commission estimates that the initial internal 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 would be approximately 2,080.8 burden

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<sup>177</sup> 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 multiplied by 5.35 to account for bonuses, firm size, employee benefits and overhead.

<sup>178</sup> See CAT NMS Plan, *supra* note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

hours.<sup>179</sup> Therefore, the Commission estimates that, for all Participants, the estimated aggregate one-time burden would be 43,696.8 hours.<sup>180</sup>

Once a Participant has 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 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.<sup>181</sup> Based on this estimate provided in the CAT NMS Plan, the Commission believes that it would take each Participant 1,474.2 ongoing burden hours per year<sup>182</sup> to continue compliance with Rule 613. Therefore, the Commission estimates that the estimated aggregate ongoing burden for all Participants would be approximately 30,958.2 hours.<sup>183</sup>

The Commission estimates that it would take the Participants approximately 45,523.8 annualized burden hours to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(2,080.8 initial burden hours amortized over three years) + (1,474.2 ongoing burden hours) x (21 Participants)].

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

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<sup>179</sup>  $(\$10,300,000 \text{ anticipated initial FTE costs}) / (21 \text{ Participants}) = \$490,476.19$  in anticipated initial FTE costs per Participant.  $(\$490,476.19 \text{ in anticipated initial FTE costs per Participant}) / (\$424,350 \text{ FTE costs per Participant}) = 1.156$  anticipated FTEs per Participant for the implementation of data reporting.  $(1.156 \text{ FTEs}) \times (1,800 \text{ working hours per year}) = 2,080.8$  initial burden hours per Participant to implement CAT Data reporting.

<sup>180</sup>  $43,696.8$  initial burden hours =  $(21 \text{ Participants}) \times (2,080.8 \text{ initial burden hours})$ .

<sup>181</sup> See CAT NMS Plan, *supra* note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

<sup>182</sup>  $(\$7,300,000 \text{ in anticipated Participant annual FTE costs}) / (21 \text{ Participants}) = \$347,619.05$  in anticipated per Participant annual FTE costs.  $(\$347,619.05 \text{ in anticipated per Participant FTE costs}) / (\$424,350 \text{ FTE cost per Participant}) = 0.819$  anticipated FTEs per Participant.  $(0.819 \text{ FTEs}) \times (1,800 \text{ working hours per year}) = 1,474.2$  burden hours per Participant to maintain CAT Data reporting.

<sup>183</sup>  $30,958.2$  annual burden hours =  $(21 \text{ Participants}) \times (1,474.2 \text{ annual burden hours})$ .

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.<sup>184</sup>

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).<sup>185</sup> 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.<sup>186</sup> The Commission notes that the CAT NMS Plan includes these data as “SIP Data” to be collected by the Central Repository.<sup>187</sup> 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 cost to the Participants to implement surveillance programs within the Central Repository is \$17,500,000 for operational, technical/development, and compliance staff to be engaged in the creation of surveillance programs.<sup>188</sup>

Based on the estimates provided in the CAT NMS Plan, the Commission estimates that the initial internal burden hours to implement new or enhanced surveillance systems reasonably designed to make use of the consolidated audit trail data for each Participant would be approximately 3,535.2 burden hours,<sup>189</sup> for an aggregate initial

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<sup>184</sup> See 17 CFR 242.613(e)(7).

<sup>185</sup> Id.

<sup>186</sup> See 17 CFR 242.613(e)(8).

<sup>187</sup> See CAT NMS Plan, supra note 4, at Section 6.5(a)(ii).

<sup>188</sup> See id. at Appendix C, Section B.7(b)(iii)(B)(2).

<sup>189</sup>  $(\$17,500,000 \text{ in anticipated initial FTE costs}) / (21 \text{ Participants}) = \$833,333.33 \text{ in anticipated FTE costs per Participant. } (\$833,333.33 \text{ in anticipated initial FTE}$

burden hour amount of 74,239.2 burden hours.<sup>190</sup>

The CAT NMS Plan states that the estimated total annual FTE cost associated with the 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.<sup>191</sup> Based on the estimates provided in the CAT NMS Plan, the Commission estimates that the ongoing internal burden hours 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 13,473 annual burden hours,<sup>192</sup> for an aggregate annual burden hour amount of 282,933 burden hours.<sup>193</sup>

The Commission estimates that it would take the Participants approximately 307,679.4 annualized burden hours 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 [(3,535.2 initial burden hours amortized over three years) + (13,473 ongoing burden hours) x (21 Participants)].

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.<sup>194</sup> The assessment must

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costs per Participant) / (\$424,350 FTE cost per Participant) = 1.964 anticipated initial FTEs per Participant. (1.964 FTEs) x (1,800 working hours per year) = 3,535.2 initial burden hours per Participant to implement new or enhanced surveillance systems.

<sup>190</sup> (3,535.2 initial burden hours per Participant to implement new or enhanced surveillance systems) x (21 Participants) = 74,239.2 aggregate initial burden hours.

<sup>191</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

<sup>192</sup> (\$66,700,000 in anticipated ongoing FTE costs) / (21 Participants) = \$3,176,190.48 in anticipated ongoing FTE costs per Participant. (\$3,176,190.48 in anticipated ongoing FTE costs per Participant) / (\$424,350 FTE cost per Participant) = 7.485 anticipated FTEs per Participant. (7.485 FTEs) x (1,800 working hours per year) = 13,473 ongoing burden hours per Participant to maintain the new or enhanced surveillance systems.

<sup>193</sup> (13,473 annual burden hours per Participant to maintain new or enhanced surveillance systems) x (21 Participants) = 282,933 aggregate annual burden hours.

<sup>194</sup> 17 CFR 242.613(b)(6).

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.<sup>195</sup> 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.<sup>196</sup> The CCO would be an employee of the Plan Processor and would be compensated by the Plan Processor.<sup>197</sup> 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.

Accordingly, the Commission has amended Section 6.6 of the Plan to change the frequency of the assessment contemplated by Rule 613(b)(6) from biannual to annual.

The Commission also amended Section 6.6 of the Plan to provide further detail regarding elements of the written assessment to be conducted by the Participants. Specifically, as amended, 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.<sup>198</sup>

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. The Commission has also amended Section 6.6 of the Plan to require

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<sup>195</sup> Id.

<sup>196</sup> See CAT NMS Plan, supra note 4, at Section 6.6.

<sup>197</sup> Id. at Section 6.2(a).

<sup>198</sup> See CAT NMS Plan Order, supra note 12, at Section IV.H.

the annual assessment to consider the benefits of potential improvements to the CAT, including to investor protection.<sup>199</sup>

As a result, the Commission is modifying its estimates of the ongoing burden and costs related to the written assessment of the operation of the CAT, as well as to account for an increase in the expected number of Participants from 20 to 21, subsequent to the publication of the CAT NMS Plan Notice.<sup>200</sup> The Commission now estimates that it would take each Participant approximately 171.43 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.<sup>201</sup> Therefore, the Commission estimates that the ongoing annual burden of submitting a written assessment each year would be 171.43 ongoing burden hours per Participant, for an estimated aggregate annual ongoing burden of 3,600.03 hours.<sup>202</sup>

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<sup>199</sup> Id.

<sup>200</sup> See supra note 129.

<sup>201</sup> As it did when making its preliminary estimate, the Commission 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. See Section 12.A.f., infra. Specifically, as noted above, the Commission assumed that the review and potential revision of the written assessment would be approximately one-half as burdensome as the document required by Rule 613(i) when making its preliminary estimate. The Commission then further divided the burden by half because this report is required to be furnished every two years. The Commission has amended the CAT NMS Plan to add more specificity to the requirement to provide the written assessment. As a result, the Commission now estimates that the written assessment would now be as burdensome (instead of half as burdensome) as the document addressing expansion required by Rule 613(i). 2 FTEs needed for all of the Participants to create and submit the document required by Rule 613(i) (and now for all of the Participants to review and comment on the written assessment). (2 FTEs) x (1,800 working hours per year) = 3,600 ongoing annual burden hours per year for all of the Participants to review and comment on the written assessment. (3,600 burden hours per year) / (21 Participants) = 171.43 ongoing annual burden hours per Participant to review and comment on the written assessment prepared by the CCO.

The Commission also has amended the CAT NMS Plan to require this assessment to be provided annually instead of once every two years. To account for this change, the Commission is no longer dividing the ongoing burden hours for providing the written assessment in half to determine the annualized estimate of the burden.

<sup>202</sup> 3,600.03 ongoing annual burden hours = (171.43 ongoing annual burden hours) x (21 Participants).

The Commission estimates that it would take the Participants approximately 3,600.03 annualized burden hours to review, comment on, and submit the written assessment to the Commission [(171.43 ongoing burden hours) x (21 Participants)].

f. Document on Expansion to Other Securities

Rule 613(i) provides that the CAT NMS Plan must require the Participants to jointly provide to the Commission, within six months after the CAT NMS Plan becomes effective, a document outlining how the Participants could incorporate into the consolidated audit trail information regarding: (1) equity securities that are not NMS securities;<sup>203</sup> (2) debt securities; and (3) primary market transactions in equity securities that are not NMS securities and debt securities.<sup>204</sup> The document must also detail the order and Reportable Event data that each market participant may be required to provide, which market participants may be required to provide such data, an implementation timeline, and a cost estimate. Thus, the Participants must, among other things, undertake an analysis of technological and computer system acquisitions and upgrades that would be required to incorporate such an expansion.

The Commission estimates that it would take each Participant approximately 171.43 burden hours of internal legal, compliance, business operations and information technology staff time to create a document addressing expansion of the consolidated audit trail to additional securities as required by Rule 613(i).<sup>205</sup> Therefore, the Commission estimates that the one-time initial burden of drafting the document required by Rule 613

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<sup>203</sup> The CAT NMS Plan would require the inclusion of OTC Equity Securities, while Rule 613 does not include such a requirement. See supra note 8.

<sup>204</sup> See 17 CFR 242.613(i).

<sup>205</sup> 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 this document is much more limited in scope than the CAT NMS Plan, and because the Commission assumes that in drafting the CAT NMS Plan, the Participants have already contributed time toward considering how the CAT can be expected to be expanded in accordance with Rule 613(i), the Commission is applying the CAT NMS Plan development internal burden over a 6-month period (Rule 613(i) requires this document to be submitted to the Commission within six months after effectiveness of the CAT NMS Plan), divided by half. 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 document. 2 FTEs x 1,800 working hours per year = 3,600 burden hours. 3,600 burden hours / 21 Participants = 171.43 burden hours per Participant to create and file the document.

would be 171.43 initial burden hours per Participant, for an estimated aggregate initial burden of 3,600.03 burden hours.<sup>206</sup>

The Commission estimates that it would take the Participants approximately 1,199.94 annualized burden hours to create a document addressing expansion of the consolidated audit trail to additional securities as required by Rule 613(i) [(171.43 initial burden hours amortized over three years) x (21 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 currently report high numbers of OATS Reportable Order Events ("ROEs")<sup>207</sup> 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.<sup>208</sup>

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<sup>206</sup> The initial burden hour estimate is based on: (21 Participants) x (171.43 initial burden hours to draft the report).

<sup>207</sup> 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.

<sup>208</sup> The Commission also recognizes as discussed above that some broker-dealer firms may strategically choose to outsource despite the Plan's working



The Commission estimates that there are 126 OATS-reporting Insourcers and 45 non-OATS reporting Insourcers.<sup>209</sup> The Commission’s estimation categorizes the remaining 1,629 broker-dealers that the Plan anticipates would have CAT Data reporting obligations as Outsourcers.<sup>210</sup>

(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.<sup>211</sup> The Commission estimates that there are 14 large broker-dealers that are not OATS reporters currently in the business of electronic liquidity provision that would be classified as Insourcer firms.<sup>212</sup>

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.<sup>213</sup> 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 Options Market Makers and 14 ELPs would be typical of the Plan’s large non-OATS-reporting firms; for

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assumption that these broker-dealers would insource their regulatory data reporting functions.

<sup>209</sup> These are 126 current OATS reporters that report more than 350,000 OATS ROEs per month; 31 Options Market Making firms; and 14 electronic liquidity providers (“ELPs”).

<sup>210</sup> These broker-dealers are assumed to already outsource data reporting services.

<sup>211</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section A.6(c).

<sup>212</sup> 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.

<sup>213</sup> The Commission 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.

these firms, the Commission relies on the burden hour estimates provided under Approach 1<sup>214</sup> 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.<sup>215</sup> 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,<sup>216</sup> for an estimated aggregate initial burden of 652,050 hours.<sup>217</sup>

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 preliminarily estimates 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

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<sup>214</sup> 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.

<sup>215</sup> 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 177.

<sup>216</sup> 14,490 initial burden hours = (8.05 FTEs for implementing CAT Data reporting systems) x (1,800 working hours per year).

<sup>217</sup> The Commission preliminarily 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.

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.<sup>218</sup> Based on this information, the Commission preliminarily believes that it would take a large non-OATS reporting broker-dealer 13,338 burden hours per year<sup>219</sup> to continue to comply with the Rule, for an estimated aggregate ongoing burden of 600,210 hours.<sup>220</sup>

The Commission estimates that it would take large non-OATS reporting broker-dealers approximately 817,560 annualized burden hours 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) + (13,338 ongoing burden hours) x (45 large non-OATS reporting broker-dealers)].

#### 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.<sup>221</sup> To

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<sup>218</sup> 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 177.

<sup>219</sup> 13,338 ongoing burden hours = (7.41 ongoing FTEs to maintain CAT data reporting systems) x (1,800 working hours per year).

<sup>220</sup> 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.

<sup>221</sup> 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 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.

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.<sup>222</sup>

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.<sup>223</sup> 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,<sup>224</sup> for an estimated aggregate initial burden of 3,383,856 hours.<sup>225</sup>

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.

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.<sup>226</sup> Based on

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<sup>222</sup> See supra note 214.

<sup>223</sup> 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 177.

<sup>224</sup> 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).

<sup>225</sup> 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.

<sup>226</sup> 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

this information the Commission believes that it would take a large OATS-reporting broker-dealer 18,054 ongoing burden hours per year<sup>227</sup> 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.<sup>228</sup>

The Commission estimates that it would take large OATS reporting broker-dealers approximately 3,402,756 annualized burden hours 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.<sup>229</sup>

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. 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

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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 177.

<sup>227</sup> 18,054 ongoing burden hours = (10.03 ongoing FTEs for maintenance of CAT data reporting systems) x (1,800 working hours per year).

<sup>228</sup> 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.

<sup>229</sup> 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 221.

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.<sup>230</sup> 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.<sup>231</sup>

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 1,350 ongoing burden hours per year<sup>232</sup> 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 broker-dealer would be approximately 1,350 hours, for an estimated aggregate ongoing burden of 1,088,100 hours.<sup>233</sup>

The Commission estimates that it would take small OATS-reporting broker-dealers approximately 1,571,700 annualized burden hours 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

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<sup>230</sup> 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 x \$424,350 FTE cost) = \$424,350 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.

<sup>231</sup> The Commission estimates that 806 small OATS-reporting broker-dealers would be impacted by this information collection. (806 small OATS-reporting broker-dealers x 1,800 burden hours) = 1,450,800 aggregate initial burden hours.

<sup>232</sup> 1,350 ongoing burden hours = (0.75 FTE for maintenance of CAT Data reporting systems) x (1,800 working hours per year).

<sup>233</sup> 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.

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 799 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.<sup>234</sup> A further 24 broker-dealers have Participant memberships only with one Participant;<sup>235</sup> 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 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.<sup>236</sup> 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

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<sup>234</sup> 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).

<sup>235</sup> 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.

<sup>236</sup> 3,600 initial burden hours = (2 FTEs for implementation of CAT Data reporting systems) x (1,800 working hours per year).

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 2,962,800 hours.<sup>237</sup>

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 year<sup>238</sup> 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 1,111,050 hours.<sup>239</sup>

The Commission estimates that it would take small non-OATS-reporting broker-dealers approximately 2,098,650 annualized burden hours 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 (823 small non-OATS-reporting broker-dealers)].

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<sup>237</sup> The Commission estimates that 823 small non-OATS-reporting broker-dealers would be impacted by this information collection. (823 small non-OATS-reporting broker-dealers x 3,600 burden hours) = 2,962,800 aggregate initial burden hours.

<sup>238</sup> 1,350 ongoing burden hours = (0.75 FTEs for maintenance of CAT data reporting systems) x (1,800 working hours per year).

<sup>239</sup> The Commission estimates that 823 small non-OATS-reporting broker-dealers would be impacted by this information collection. (823 small non-OATS-reporting broker-dealers x 1,350 burden hours) = 1,111,050 aggregate ongoing burden hours to ensure ongoing compliance with Rule 613.



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	21	1	686.05	228.68	686.05	914.73	914.73	19,209.4	0.00
Data Collection and Reporting (Participants)	Third Party Disclosure	21	1	2,080.8	693.6	1,474.2	2,167.8	2,167.8	45,523.8	0.00
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers) - ELPs	Third Party Disclosure	14	1	14,490.00	4,830.00	13,338.00	18,168.00	18,168.00	254,352.00	0.00
Data Collection and Reporting (Large, Non-OATS Reporting Broker-Dealers) - Options Market Makers	Third Party Disclosure	31	1	14,490.00	4,830.00	13,338.00	18,168.00	18,168.00	563,208.00	0.00
Data Collection and Reporting (Large OATS Reporting Broker-Dealers)	Third Party Disclosure	126	1	26,856.00	8,952.00	18,054.00	27,006.00	27,006.00	3,402,756.00	0.00
Data Collection and Reporting (Small OATS Reporting Broker-Dealers)	Third Party Disclosure	806	1	1,800.00	600.00	1,350.00	1,950.00	1,950.00	1,571,700.00	Estimated 395 <sup>240</sup>

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The Commission believes that the 1,234 Commission-registered broker-dealers (as of 2015) 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 823 respondents affected by the “data collection and reporting (non-OATS reporting broker-dealers)” would all be 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 395 broker-dealers (of the estimated 1,234 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, but the Commission preliminarily believes that they would have low levels of OATS reporting and would likely outsource CAT data collection and reporting to a service bureau.

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	823	1	3,600.00	1,200.00	1,350.00	2,550.00	2,550.00	2,098,650.00	Estimated 823 <sup>241</sup>
Surveillance	Recordkeeping	21	1	3,535.2	1,178.4	13,473	14,651.4	14,651.4	307,679.4	0.00
Written Assessment of Operation of CAT	Reporting	21	1	0.00	0.00	171.43	171.43	171.43	3,600.03	0.00
Document on Expansion to Other Securities	Reporting	21	1	171.43	57.14	0.00	57.14	57.14	1,199.94	0.00
<b>TOTAL HOURLY BURDEN FOR ALL RESPONDENTS</b>									<b>8,267,878.57</b>	

### 13. Costs to Respondents

#### A. Costs to National Securities Exchanges and National Securities Associations

##### a. Central Repository

The Commission estimates that, over the 12-month period after the effectiveness of the CAT NMS Plan within which the Participants would be required to select an initial Plan Processor<sup>242</sup> and begin reporting to the Central Repository,<sup>243</sup> the Participants would collectively spend \$2,400,000 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, or \$114,285.71 per Participant.<sup>244</sup> The Commission is basing this estimate on the estimate provided in the CAT NMS Plan for public relations, legal and consulting costs incurred in preparation of the CAT NMS Plan.

<sup>241</sup> Id.

<sup>242</sup> 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).

<sup>243</sup> 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).

<sup>244</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii) (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 CAT NMS Plan) x (12 months). (\$2,400,000 / 21 Participants) = \$114,285.71 per Participant over 12 months.

Because the Participants described such costs as “reasonably associated with creating, implementing and maintaining the CAT,”<sup>245</sup> the Commission believes these external cost estimates should also be applied to the creation and implementation of the Central Repository.

The CAT NMS Plan provides the estimates given by the six Shortlisted Bidders<sup>246</sup> for the one-time total cost associated with the Plan Processor that would build the Central Repository.<sup>247</sup> The CAT NMS Plan states that these include technological, operational, administrative and “any other material costs.”<sup>248</sup>

Subsequent to the publication of the CAT NMS Plan Notice, the Participants submitted revised Central Repository cost estimates to reflect the proposed development and maintenance costs of the final three Shortlisted Bidders.<sup>249</sup> Using the revised

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<sup>245</sup> Id.

<sup>246</sup> The Selection Committee narrowed the list of Shortlisted Bidders from six to three Shortlisted Bidders. See “Participants, SROs Reduce Short List Bids from Six to Three for Consolidated Audit Trail” (November 16, 2015), available at [http://www.catnmsplan.com/pastevents/catnms\\_release\\_downselect\\_111615.pdf](http://www.catnmsplan.com/pastevents/catnms_release_downselect_111615.pdf). However, the costs provided by the Participants in the CAT NMS Plan are based on the Bids of the six Shortlisted Bidders.

<sup>247</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(i)(B); see also id. at Appendix C, Section B.7(b)(iv)(A)(1). The Commission notes that the cost associated with the build and maintenance of the Central Repository includes compliance with the requirement in Rule 613(e)(8) that the Central Repository retain information collected pursuant to Rule 613(c)(7) and (e)(7) in a convenient and usable standard electronic data format that is directly available and searchable electronically without any manual intervention for a period of not less than five years. See id. at Section 6.1(d)(i) (requiring the Plan Processor to comply with the recordkeeping requirements of Rule 613(e)(8)). See also id. at Appendix C, Section D.12(l) (stating that Rule 613(e)(8) requires data to be available and searchable for a period of not less than five years, that broker-dealers are currently required to retain data for six years under Rule 17a-4(a), and that the Participants are requiring CAT Data to be kept online in an easily accessible format for regulators for six years, though this may increase the cost to run the CAT). The Commission notes that a Shortlisted Bidder may be permitted to revise its Bid prior to approval of the CAT NMS Plan if the CAT Selection Committee determines by Majority Vote that such revisions are necessary or appropriate, so the estimates provided in the CAT NMS Plan may be subject to change. See id. at Section 5.2(c)(ii). In addition, changes in technology between the time the Bids were submitted and the time the Central Repository is built could result in changes to the costs to build and operate the Central Repository.

<sup>248</sup> See id. at Appendix C, Section B.7(b)(i)(B).

<sup>249</sup> See Response Letter III at 14–15.

estimates, the Commission estimates that the initial one-time cost to develop the Central Repository would be an aggregate initial external cost to the Participants of \$65 million,<sup>250</sup> or \$3,095,238.09 per Participant.<sup>251</sup> Therefore, the Commission estimates that each Participant would incur initial one-time external costs of \$3,209,523.8<sup>252</sup> to build the Central Repository, or an aggregate initial one-time external cost across all Participants of \$67,399,999.8.<sup>253</sup>

After the Central Repository has been developed and implemented, there would 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.<sup>254</sup> 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.<sup>255</sup> 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 \$38,095.24 per Participant.<sup>256</sup>

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<sup>250</sup> See *id.*

<sup>251</sup> *Id.* The Participants provided a range of Bidder estimates. For purposes of this Paperwork Burden Act analysis, the Commission is using the build cost of the maximum estimate.  $\$3,095,238.09 = \$65,000,000/21$  Participants.

<sup>252</sup>  $\$3,209,523.8$  for each Participant to build the Central Repository =  $(\$3,095,238.09$  per Participant in initial one-time costs to compensate the Plan Processor to build the Central Repository) +  $(\$114,285.71$  per Participant in initial one-time public relations, legal and consulting costs associated with the building of the Central Repository and the selection of the initial Plan Processor).

<sup>253</sup>  $\$67,399,999.8$  for all of the Participants to build the Central Repository =  $\$3,209,523.8$  per Participant to build the Central Repository) x (21 Participants).

<sup>254</sup> See CAT NMS Plan, *supra* note 4, at Section 6.1.

<sup>255</sup> See *id.* at Appendix C, Section B.7(b)(iii).

<sup>256</sup> 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

The CAT NMS Plan includes the estimates the six Shortlisted Bidders provided for the annual ongoing costs to the Participants to operate the Central Repository.<sup>257</sup> The CAT NMS Plan did not categorize the costs included in the ongoing costs, but the Commission believes they would comprise external technological, operational and administrative costs, as the Participants described the costs included in the initial one-time external cost to build the Central Repository.<sup>258</sup> As noted above, the Participants updated the Central Repository estimates to reflect the estimates of the final three Shortlisted Bidders.<sup>259</sup> Using the revised estimates, the Commission now 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 \$55 million,<sup>260</sup> or \$2,619,047.62 per Participant.<sup>261</sup> Therefore, the

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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 =  $(\$8,800,000/44 \text{ months between the adoption of Rule 613 and the filing of the CAT NMS Plan}) \times (12 \text{ months})$ . 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.  $\$800,000 = (0.333) \times (\$2,400,000)$ .  $(\$800,000 / 21 \text{ Participants}) = \$38,095.24$  per Participant over 12 months.

<sup>257</sup> See id. at Appendix C, Section B.7(b)(i)(B).

<sup>258</sup> See id.

<sup>259</sup> See Response Letter III at 14–15.

<sup>260</sup> Id.

<sup>261</sup> 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.  $\$2,619,047.62 = \$55,000,000 / 21$  Participants. The Commission noted several uncertainties that may affect the Central Repository cost estimates, including (1) that the Participants have 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

Commission estimates that each Participant would incur ongoing annual external costs of \$2,657,142.86<sup>262</sup> to maintain the Central Repository, or aggregate ongoing annual external costs across all Participants of \$55,800,000.06.<sup>263</sup>

The Commission estimates that the Participants would incur an aggregate, annualized external cost of approximately \$78,266,666.66 to create and manage the Central Repository [(\$3,209,523.8 in initial external costs amortized over three years) + (\$2,657,142.86 in annual ongoing external costs) x (21 Participants)].

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.<sup>264</sup> 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.

The CAT NMS Plan provides the following average costs that the Participants would expect to incur to adopt the systems changes needed to comply with the data reporting requirements of the consolidated audit trail: \$770,000 in aggregate third party legal and consulting costs and \$17,900,000 in aggregate total costs.<sup>265</sup>

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underestimated, the capacity of the Central Repository may need to be increased, resulting in an increase in costs.

<sup>262</sup> \$2,657,142.86 for each Participant to maintain the Central Repository = (\$2,619,047.62 per Participant in ongoing annual costs to maintain the Central Repository) + (\$38,095.24 per Participant in ongoing annual public relations, legal and consulting costs associated with the maintenance of the Central Repository).

<sup>263</sup> \$55,800,000.06 for all of the Participants to maintain the Central Repository = (\$2,657,142.86 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 (21 Participants).

<sup>264</sup> 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.

<sup>265</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2). Of the \$17,900,000 in aggregate total costs, \$11,070,000 is identified (subtotal of FTE costs and outsourcing), but the remaining \$6,830,000 is not identified in the CAT NMS Plan. The Commission believes that the \$6,830,000 may be attributed to hardware costs because the Participants have not provided any hardware costs

Based on estimates provided in the CAT NMS Plan, the Commission estimates that each Participant would, on average, incur approximately \$36,666.67 in initial third party legal and consulting costs<sup>266</sup> for a total of \$361,904.76 in initial external costs to adopt the systems changes needed to comply with the data reporting requirements of the consolidated audit trail.<sup>267</sup> Therefore, the Commission estimates that, for all Participants, the estimated aggregate initial external cost would be \$7,600,000.<sup>268</sup>

Once a Participant has 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 costs<sup>269</sup> and \$14,700,000 total annual costs.<sup>270</sup>

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associated with data reporting elsewhere and the Commission believes that the Participants will likely incur external costs to purchase upgraded hardware to report data to the Central Repository.

<sup>266</sup>  $(\$770,000 \text{ anticipated initial third party costs}) / (21 \text{ Participants}) = \$36,666.67$  in initial anticipated third party costs per Participant.

<sup>267</sup> To determine the total initial external cost per Participant, the Commission subtracted the anticipated initial FTE cost estimates for the Participants as provided in the Plan from the total aggregate initial costs to the Participants and divided the remainder by 21 Participants.  $(\$17,900,000 \text{ total aggregate initial cost to Participants}) - (\$10,300,000 \text{ initial FTE cost to Participants}) = \$7,600,000$  (which includes the \$770,000 in total anticipated initial third party costs).  $(\$7,600,000) / 21 \text{ Participants} = \$361,904.76$  in initial 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 costs associated with the implementation of regulatory reporting to the Central Repository.

<sup>268</sup>  $\$7,600,000 = (\$361,904.76 \text{ in initial external costs}) \times (21 \text{ Participants})$ .

<sup>269</sup> 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.

<sup>270</sup> 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 believes that the Participants will likely incur costs to upgrade their hardware to report data to the Central Repository.

Based on estimates provided in the CAT NMS Plan, the Commission estimates that it would cost, on average, approximately \$34,285.71 in ongoing third-party legal and consulting and other costs<sup>271</sup> and \$352,380.95 in total ongoing external costs per Participant.<sup>272</sup> Therefore, the Commission estimates that the estimated aggregate ongoing external cost for all Participants would be \$7,400,000.<sup>273</sup>

The Commission estimates that the Participants would incur an aggregate, annualized external cost of approximately \$9,933,333.27 to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(\$361,904.76 in initial external costs amortized over three years) + (\$352,380.95 in annual, ongoing external costs) x (21 Participants)].

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.<sup>274</sup> 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).<sup>275</sup> 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.<sup>276</sup> The Commission notes that the CAT NMS Plan includes these

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<sup>271</sup>  $(\$720,000 \text{ in annual third party costs}) / (21 \text{ Participants}) = \$34,285.71 \text{ per Participant in anticipated annual third party costs.}$

<sup>272</sup> To determine the total external annual cost per Participant, the Commission subtracted the anticipated annual FTE cost estimates for the Participants as provided in the Plan from the total aggregate annual costs to the Participants and divided the remainder by 21 Participants.  $(\$14,700,000 \text{ total aggregate annual cost to Participants}) - (\$7,300,000 \text{ annual FTE cost to Participants}) = \$7,400,000$  (which includes the \$720,000 in total anticipated annual third party costs).  $(\$7,400,000) / 21 \text{ Participants} = \$352,380.95$  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.

<sup>273</sup>  $\$7,400,000 = (\$352,380.95 \text{ in total annual external costs}) \times (21 \text{ Participants}).$

<sup>274</sup> See 17 CFR 242.613(e)(7).

<sup>275</sup> Id.

<sup>276</sup> See 17 CFR 242.613(e)(8).



data as “SIP Data” to be collected by the Central Repository.<sup>277</sup> 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.<sup>278</sup> This amount includes legal, consulting, and other costs of \$560,000, as well as \$17,500,000 in FTE costs for operational, technical/development, and compliance staff to be engaged in the creation of surveillance programs.<sup>279</sup>

Based on the estimates provided in the CAT NMS Plan, the Commission estimates that each Participant would, on average, incur an initial external cost of approximately \$26,666.67<sup>280</sup> for outsourced legal, consulting and other costs in order to implement new or enhanced surveillance systems, for a total of \$271,428.57 in initial external costs,<sup>281</sup> for an aggregate one-time initial external cost of \$5,700,000 across the 21 Participants to implement new or enhanced surveillance systems.<sup>282</sup>

<sup>277</sup> See CAT NMS Plan, supra note 4, at Section 6.5(a)(ii).

<sup>278</sup> See id. at Appendix C, Section B.7(b)(iii)(B)(2).

<sup>279</sup> Id. For purposes of the Paperwork Reduction Act analysis, the Commission is treating the FTE cost as an internal burden. See text accompanying notes 188–190, 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.

<sup>280</sup>  $\$26,666.67 = \$560,000 / 21$  Participants.

<sup>281</sup>  $(\$23,200,000 \text{ in total initial surveillance costs} - \$17,500,000 \text{ in FTE costs}) = \$5.7$  million in aggregate one-time initial external costs (which includes the \$560,000 in initial external third party costs).  $\$5.7 \text{ million} / (21 \text{ Participants}) = \$271,428.57$ .

<sup>282</sup>  $\$5,700,000 = \$271,428.57 \times 21$  Participants.

The CAT NMS Plan states that the estimated total annual cost associated with the maintenance of surveillance programs for the Participants is \$87,700,000.<sup>283</sup> This amount includes annual legal, consulting, and other costs of \$1,000,000, as well as \$66,700,000 in annual FTE costs for internal operational, technical/development, and compliance staff to be engaged in the maintenance of surveillance programs.<sup>284</sup> Based on the estimates provided in the CAT NMS Plan,<sup>285</sup> the Commission estimates that each Participant would, on average, incur an annual external cost of approximately \$47,619.05<sup>286</sup> for outsourced legal, consulting and other costs in order to maintain the new or enhanced surveillance systems, for a total estimated ongoing external cost of \$1,000,000,<sup>287</sup> for an estimated aggregate ongoing external cost of \$21,000,000 across the 21 Participants to maintain the surveillance systems.<sup>288</sup>

The Commission estimates that the Participants would incur an aggregate, annualized external cost of approximately \$22,899,999.99 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 [(\$271,428.57 in initial external costs amortized over three years) + (\$1,000,000 in annual, ongoing external costs) x (21 Participants)].

e. Written Assessment of Operation of the Consolidated Audit Trail

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<sup>283</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

<sup>284</sup> Id. For purposes of the Paperwork Reduction Act analysis, the Commission is treating the FTE cost as an internal burden. See text accompanying notes 191–193, supra. The Commission also notes that based upon the data provided by the Participants, the source of the remaining \$21,000,000 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.

<sup>285</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section B.7(b)(iii)(B)(2).

<sup>286</sup> \$47,619.05 = \$1,000,000 for ongoing legal, consulting and other costs associated with maintenance of surveillance programs / 21 Participants.

<sup>287</sup> (\$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 / 21 Participants = \$1,000,000.

<sup>288</sup> \$21,000,000 = \$1,000,000 x 21 Participants.

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.<sup>289</sup> 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.<sup>290</sup> 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.<sup>291</sup> The CCO would be an employee of the Plan Processor and would be compensated by the Plan Processor.<sup>292</sup> 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.

As noted above,<sup>293</sup> the Commission has amended Section 6.6 of the Plan to change the frequency of the assessment contemplated by Rule 613(b)(6) from biannual to annual.

The Commission has also amended Section 6.6 of the Plan to provide further detail regarding elements of the written assessment to be conducted by the Participants. Specifically, as amended, 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.

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<sup>289</sup> 17 CFR 242.613(b)(6).

<sup>290</sup> Id.

<sup>291</sup> See CAT NMS Plan, supra note 4, at Section 6.6.

<sup>292</sup> Id. at Section 6.2(a).

<sup>293</sup> See Section 12.A.e., supra.

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. The Commission has also amended Section 6.6 of the Plan to require the annual assessment to consider the benefits of potential improvements to the CAT, including to investor protection.

The Commission now 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.<sup>294</sup> 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 \$21,000.<sup>295</sup>

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

f. Document on Expansion to Other Securities

Rule 613(i) provides that the CAT NMS Plan must 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: (1) equity securities that are not NMS securities;<sup>296</sup> (2) debt securities; and (3) primary market transactions in equity securities that are not NMS securities and debt securities.<sup>297</sup> The document must also detail the order and Reportable Event data that each market participant may be required to provide, which market participants may be required to provide such data, an implementation timeline, and a cost estimate. Thus, the Participants must, among other things, undertake an analysis of technological and computer system acquisitions and upgrades that would be required to incorporate such an expansion.

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<sup>294</sup> \$1,000 = (\$400 per hour rate for outside legal services) x (2.5 hours). The Commission has amended the CAT NMS Plan to add more specificity to the requirement to provide the written assessment and is now requiring this assessment to be provided annually instead of once every two years. Because the written assessment is no longer a biennial requirement, the Commission is no longer dividing the cost of the written assessment in half (over two years) to estimate the annual ongoing external cost per Participant for outside legal services to review and comment on the written assessment prepared by the CCO.

<sup>295</sup> \$21,000 = 21 Participants x (\$400 per hour rate for outside legal services) x (2.5 hours).

<sup>296</sup> The CAT NMS Plan would require the inclusion of OTC Equity Securities, while Rule 613 does not include such a requirement. See supra note 8.

<sup>297</sup> See 17 CFR 242.613(i).

The Commission estimates that on average, each Participant would outsource 25 hours of external legal time to create the document, for an aggregate one-time external cost of approximately \$10,000.<sup>298</sup> Therefore, the Commission preliminarily estimates that the one-time initial external cost per Participant to draft the document would be \$10,000, for an estimated aggregate initial external cost of \$210,000.<sup>299</sup>

The Commission estimates that the Participants would incur an aggregate, annualized external cost of approximately \$70,000 to create the document addressing expansion of the consolidated audit trail to additional securities as required by Rule 613(i) [(\$10,000 in initial external costs) / (amortized over three years) x (21 Participants)].

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 ROEs<sup>300</sup> 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

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<sup>298</sup> \$10,000 = (25 hours of outsourced legal time per Participant) x (\$400 per hour rate for outside legal services). The Commission derived the total estimated cost for outsourced legal counsel based on the assumption that the report required by Rule 613 would require approximately fifteen percent of the Commission's approximated burden of drafting and filing the CAT NMS Plan. This assumption is based on the Participants leveraging their knowledge gained from their drafting and filing of the CAT NMS Plan and applying it to efficiently preparing the report required by Rule 613 with respect to other securities' order and Reportable Events, implementation timeline and cost estimates.

<sup>299</sup> The initial external cost estimate is based on: (21 Participants) x (\$10,000 for outsourced legal counsel).

<sup>300</sup> See supra note 207.

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.<sup>301</sup>

As noted above, the Commission estimates that there are 126 OATS-reporting Insourcers and 45 non-OATS reporting Insourcers.<sup>302</sup> The Commission's estimation categorizes the remaining 1,629 broker-dealers that the Plan anticipates would have CAT Data reporting obligations as Outsourcers.<sup>303</sup>

(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 or outsourcing their regulatory data reporting functions.<sup>304</sup> The Commission estimates that there are 14 large broker-dealers that are not OATS reporters currently in the business of electronic liquidity provision that would be classified as Insourcer firms.<sup>305</sup>

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.<sup>306</sup> 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 options firms and 14 ELPs would be typical of the Plan's large, non-OATS reporting firms; for these firms, the Commission relies on

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<sup>301</sup> 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.

<sup>302</sup> See supra note 209.

<sup>303</sup> See supra note 210.

<sup>304</sup> See CAT NMS Plan, supra note 4, at Appendix C, Section A.6(c).

<sup>305</sup> See supra note 212.

<sup>306</sup> See supra note 213.<sup>307</sup> See supra note 214.<sup>308</sup> 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.

the cost estimates provided under Approach 1<sup>307</sup> 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.<sup>308</sup> 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 the comment that provided estimates for a modified allocation timestamp requirement,<sup>309</sup> the Commission is adding the cost of 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 and an Options Market

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<sup>307</sup> See supra note 214.<sup>308</sup> 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.

<sup>308</sup> 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.

<sup>309</sup> FIF Letter at 88, Table 6. See also Section 8.D.d, supra. 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 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 1,629 broker-dealers that are categorized as Outsourcing broker-dealers.

Maker to implement the modified allocation timestamp requirement would be \$250,000.<sup>310</sup>

Based on this information, the Commission estimates that the average initial external cost per ELP would be \$709,500,<sup>311</sup> for an estimated aggregate initial external cost of \$9,933,000.<sup>312</sup>

The Commission also is adding a cost estimate for the requirement that an Options Market Maker submit a Quote Sent Time to an exchange.<sup>313</sup> The Commission estimates that this requirement will impose an additional initial hardware and software cost per Options Market Maker of \$561,290.32.<sup>314</sup>

Based on this information, the Commission estimates that the initial external cost per Options Market Maker would be \$1,270,790.32,<sup>315</sup> for an estimated aggregate initial external cost of \$39,394,499.92.<sup>316</sup>

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<sup>310</sup> 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.

<sup>311</sup>  $(\$450,000 \text{ in external hardware and software costs}) + (\$250,000 \text{ to implement the modified allocation timestamp requirement}) + (\$9,500 \text{ initial third party/outsourcing costs}) = \$709,500$  in initial external costs to implement data reporting systems.

<sup>312</sup>  $(\$700,000 \text{ in initial hardware and software costs}) + (\$9,500 \text{ initial third party/outsourcing costs}) \times 14 \text{ ELPs} = \$9,933,000$  in initial external costs to implement data reporting systems for ELPs.

<sup>313</sup> FIF Letter at 65. See also Section 8.D.e., supra.

<sup>314</sup> The Commission estimates that the implementation cost of the Quote Sent Time requirement is approximately \$17,400,000. See text accompanying note 99, supra.  $(\$17,400,000 \text{ in implementation costs}) / (31 \text{ Options Market Makers}) = \$561,290.32$  in initial external costs to implement the Quote Sent Time requirement per Options Market Maker.

<sup>315</sup>  $(\$450,000 \text{ in external hardware and software costs}) + (\$250,000 \text{ to implement the modified allocation timestamp requirement}) + (\$9,500 \text{ initial third party/outsourcing costs}) + \$561,290.32 \text{ to implement the Quote Sent Time requirement}) = \$1,270,790.32$  in initial external costs per Options Market Maker.



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 preliminarily estimates 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.<sup>317</sup> Based on this information, the Commission preliminarily 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.<sup>318</sup>

Additionally, the Commission now estimates that the ongoing cost to an ELP and an Options Market Maker to maintain the modified allocation timestamp requirement would be \$29,166.67.<sup>319</sup>

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<sup>316</sup> (\$1,270,790.32 in initial hardware and software costs) x (31 Options Market Makers) = \$39,394,499.92 in initial external costs to implement data reporting systems.

<sup>317</sup> 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.

<sup>318</sup> Id.<sup>319</sup> See supra note 309. 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.

<sup>319</sup> See supra note 309. 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

The Commission estimates that the average ongoing external cost per ELP would be \$110,466.68<sup>320</sup> to maintain the systems necessary to collect and transmit information to the Central Repository, for an estimated aggregate ongoing external cost for the ELPs of \$1,546,533.52<sup>321</sup>

The Commission also is adding an ongoing external cost estimate for the requirement that an Options Market Maker submit a Quote Sent Time to an exchange.<sup>322</sup> The Commission estimates that this requirement will impose an additional ongoing hardware and software cost per Options Market Maker of \$383,255.81.<sup>323</sup>

Based on this information, the Commission estimates that the ongoing external cost per Options Market Maker would be \$493,722.48<sup>324</sup> to maintain the systems necessary to collect and transmit information to the Central Repository, for an estimated aggregate ongoing external cost to Options Market Makers of \$15,305,396.88.<sup>325</sup>

The Commission estimates that ELPs would incur an aggregate, annualized external cost of approximately \$4,857,533.52 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)].

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would be an external hardware and software cost related to maintenance of the modified allocation timestamp.

<sup>320</sup> (\$80,000 in external hardware and software costs) + (\$29,166.67 to maintain the modified allocation timestamp requirement) + (\$1,300 ongoing external third party/outsourcing costs) = \$110,466.68 in ongoing external costs per ELP.

<sup>321</sup> (\$110,466.68 in ongoing external costs per ELP) x (14 ELPs) = \$1,546,533.52 in aggregate ongoing external costs.

<sup>322</sup> See supra note 313319.

<sup>323</sup> The Commission estimates that the ongoing cost of the Quote Sent Time requirement is approximately \$11,880,000. See text accompanying note 99, supra. (\$11,880,000 in ongoing costs) / (31 Options Market Maker) = \$383,255.81 in ongoing external costs to maintain the Quote Sent Time requirement per Options Market Maker.

<sup>324</sup> (\$80,000 in external hardware and software costs) + (\$1,300 in external third party/outsourcing costs) + (\$29,166.67 in ongoing costs to maintain the modified allocation timestamp requirement) + (\$383,255.81 in ongoing external costs to maintain the Quote Sent Time requirement) = \$493,722.48 in ongoing external costs per Options Market Maker.

<sup>325</sup> (\$493,722.48 in ongoing external costs per Options Market Maker) x (31 options firms) = \$15,305,396.88 in aggregate ongoing external costs.

The Commission estimates that Options Market Makers would incur an aggregate, annualized external cost of approximately \$28,436,896.85 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) + (\$493,722.48 in annual, ongoing external costs) x (31 options 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.<sup>326</sup> To 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.<sup>327</sup>

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.<sup>328</sup>

Based on the comment that provided estimates for a modified allocation timestamp requirement,<sup>329</sup> 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.<sup>330</sup>

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, and an additional \$150,000 in initial external third party/outsourcing costs,<sup>331</sup> and \$250,000 to implement the modified

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<sup>326</sup> See supra note 221.

<sup>327</sup> See supra note 214.

<sup>328</sup> 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 preliminarily believes that these costs may be attributed to the use of service bureaus, technology consulting, and legal services.

<sup>329</sup> See supra note 309.

<sup>330</sup> See supra note 310.  $\$42,750,000 / 171 \text{ Insourcers} = \$250,000$  in initial costs to implement the modified allocation timestamp requirement per Insourcer.

<sup>331</sup> 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.

allocation timestamp requirement. Therefore, the Commission preliminarily estimates that the average one-time initial external cost per large OATS-reporting broker-dealer would be \$1,250,000 to implement CAT data reporting systems,<sup>332</sup> for an estimated aggregate initial external cost of \$157,500,000.<sup>333</sup>

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.<sup>334</sup> Based on this information the Commission preliminarily 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.<sup>335</sup> Therefore, the Commission estimates that the average ongoing annual external cost per large OATS-reporting broker-dealer would be

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The Commission preliminarily believes that these costs may be attributed to the use of service bureaus, technology consulting, and legal services.

<sup>332</sup> (\$750,000 in initial external hardware and software costs) + (\$150,000 initial external third party/outsourcing costs) + (\$250,000 modified allocation timestamp initial external cost) = \$1,250,000 in initial external costs per large OATS-reporting broker-dealer to implement CAT data reporting systems.

<sup>333</sup> (\$750,000 in initial external hardware and software costs) + (\$150,000 in external third party/outsourcing costs) + (\$250,000 modified allocation timestamp external cost) x (126 large OATS-reporting broker-dealers) = \$157,500,000 in initial external costs to implement data reporting systems.

<sup>334</sup> 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 preliminarily believes that these costs may be attributed to the use of service bureaus, technology consulting, and legal services.

<sup>335</sup> See id.<sup>336</sup> (\$380,000 in ongoing external hardware and software costs + \$120,000 in ongoing external third party/outsourcing costs) = \$500,000 in ongoing external costs per large OATS-reporting broker-dealer.<sup>337</sup> See supra note 319. \$4,987,500 / 171 Insourcers = \$29,166.67 in ongoing costs to maintain the modified allocation timestamp requirement per Insourcer.

approximately \$500,000<sup>336</sup> 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.<sup>337</sup>

Based on this information, the Commission believes that the average ongoing annual external cost per large OATS-reporting broker-dealer would be approximately \$529,166.67<sup>338</sup> 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.<sup>339</sup>

The Commission estimates that large OATS reporting broker-dealers would incur an aggregate, annualized external cost of approximately \$119,175,000.42 annualized external cost to adopt and maintain systems changes needed to comply with the data reporting requirements of the consolidated audit trail [(\$1,250,000 initial external costs amortized over three years) + (\$29,166.67 ongoing annual, external costs) 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

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<sup>336</sup> (\$380,000 in ongoing external hardware and software costs + \$120,000 in ongoing external third party/outsourcing costs) = \$500,000 in ongoing external costs per large OATS-reporting broker-dealer.<sup>337</sup> See supra note 319. \$4,987,500 / 171 Insourcers = \$29,166.67 in ongoing costs to maintain the modified allocation timestamp requirement per Insourcer.

<sup>337</sup> See supra note 319. \$4,987,500 / 171 Insourcers = \$29,166.67 in ongoing costs to maintain the modified allocation timestamp requirement per Insourcer.

<sup>338</sup> (\$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.

<sup>339</sup> (\$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.

through service bureaus, with 730 of these broker-dealers reporting more than 99% of their OATS ROEs through one or more service bureaus.<sup>340</sup> The Commission estimates that these firms currently spend an aggregate of \$100.1 million on annual outsourcing costs.<sup>341</sup> The Commission estimates these 806 broker-dealers would spend \$100.2 million in aggregate to outsource their regulatory data reporting to service bureaus to report in accordance with Rule 613,<sup>342</sup> or \$124,373 per broker-dealer.<sup>343</sup> Therefore, the Commission estimates that each small OATS-reporting broker-dealer would incur approximately \$124,373 in initial external costs.

Additionally, based on the comment that provided estimates for a modified allocation timestamp requirement,<sup>344</sup> the Commission estimates that the initial cost to a small OATS-reporting broker-dealer to implement this requirement would be \$798.04.<sup>345</sup> Therefore, the Commission estimates that each small OATS-reporting broker-dealer would incur approximately \$125,171.04 in initial external costs,<sup>346</sup> for an estimated aggregate initial external cost of \$100,887,858.24.<sup>347</sup>

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<sup>340</sup> See supra note 221.

<sup>341</sup> 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.

<sup>342</sup> See CAT NMS Plan Order, supra note 12, at Section V.F.1.c.(2)(B).

<sup>343</sup> \$124,373 = \$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.

<sup>344</sup> See supra note 309.

<sup>345</sup> See supra note 310. 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 1,629 broker-dealers that are categorized as Outsourcing broker-dealers. \$1,300,000 / 1,629 Outsourcing broker-dealers = \$798.04 in initial costs to implement the modified allocation timestamp requirement per Outsourcing broker-dealer.

<sup>346</sup> \$125,171.04 = (\$124,373 in initial outsourcing costs) + (\$798.04 to implement the allocation timestamp).

<sup>347</sup> (\$124,373 in initial outsourcing costs) + (\$798.04 to implement the allocation timestamp) x (806 small OATS-reporting broker-dealers) = \$100,887,858.24 in aggregate initial external costs.

The Commission estimates that it would cost small OATS-reporting broker-dealers, on average, approximately \$124,373 in ongoing external outsourcing costs<sup>348</sup> to ensure ongoing compliance with Rule 613. Additionally, the Commission estimates that the ongoing cost to a small OATS-reporting broker-dealer to maintain the modified allocation timestamp requirement would be \$66.50.<sup>349</sup>

Therefore, the Commission estimates that the average ongoing external cost per small OATS-reporting broker-dealer would be approximately \$124,439.50,<sup>350</sup> for an estimated aggregate ongoing external cost of \$100,298,237.<sup>351</sup>

The Commission estimates that small OATS-reporting broker-dealers would incur an aggregate, annualized external cost of approximately \$133,927,523.08 to outsource their regulatory data reporting to service bureaus and to ensure ongoing compliance with Rule 613 [(\$125,171.04 in initial external costs amortized over three years) + (\$124,439.50 in annual, ongoing external costs) 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 799 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.<sup>352</sup> A further 24 broker-dealers have Participant memberships only with one Participant;<sup>353</sup> the Commission believes this group is comprised mostly of floor brokers and further believes

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<sup>348</sup> See supra note 343.

<sup>349</sup> See supra note 319. 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 1,629 broker-dealers that are categorized as Outsourcing broker-dealers.  $\$108,333 / 1,629$  Outsourcing broker-dealers = \$66.50 in ongoing costs to maintain the modified allocation timestamp requirement per Outsourcing broker-dealer.

<sup>350</sup>  $\$124,439.50 = (\$124,373 \text{ in ongoing outsourcing costs}) + (\$66.50 \text{ to maintain the allocation timestamp})$

<sup>351</sup>  $\$100,298,237 = (\$124,373 \text{ in ongoing outsourcing costs}) + (\$66.50 \text{ to maintain the allocation timestamp}) \times (806 \text{ broker-dealers})$ .

<sup>352</sup> See supra note 234.

<sup>353</sup> See supra note 235.

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.<sup>354</sup>

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 \$124,373 annually.<sup>355</sup>

Additionally, based on the comment that provided estimates for a modified allocation timestamp requirement,<sup>356</sup> the Commission estimates that the initial cost to a small non-OATS-reporting broker-dealer would be \$798.04.<sup>357</sup>

Based on this information, the Commission estimates that each small non-OATS-reporting broker-dealer would incur approximately \$125,171.04 in initial external costs.<sup>358</sup> Therefore, the Commission estimates that the average one-time initial external cost per small non-OATS-reporting broker-dealer would be \$125,171.04, for an estimated aggregate initial external cost of \$103,015,765.92.<sup>359</sup>

The Commission estimates that it would cost, on average, approximately \$124,373 in ongoing external outsourcing costs<sup>360</sup> to ensure ongoing compliance with 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 \$66.50.<sup>361</sup> Therefore, the Commission estimates that the average

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<sup>354</sup> Id.

<sup>355</sup> Id.

<sup>356</sup> See supra note 309.

<sup>357</sup> See supra note 345.  $\$1,300,000 / 1,629$  Outsourcing broker-dealers = \$798.04 in initial costs to implement the modified allocation timestamp requirement per Outsourcing broker-dealer.

<sup>358</sup>  $\$125,171.04 = (\$124,373 \text{ in initial outsourcing costs}) + (\$798.04 \text{ to implement the allocation timestamp})$ .

<sup>359</sup>  $\$103,015,765.92 = (\$124,373 \text{ in initial outsourcing costs}) + (\$798.04 \text{ to implement the allocation timestamp}) \times (823 \text{ small non-OATS-reporting broker-dealers})$ .

<sup>360</sup> 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 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.

<sup>361</sup> See supra note 349.



ongoing external cost per small non-OATS-reporting broker-dealer would be approximately \$124,439.50,<sup>362</sup> for an estimated aggregate ongoing external cost of \$102,413,708.50.<sup>363</sup>

The Commission estimates that small non-OATS-reporting broker-dealers would incur aggregate, annualized external costs of approximately \$136.752,297.14 to outsource data collection and reporting and to ensure ongoing compliance with Rule 613[(\$125,171.04 in initial external costs amortized over three years) + \$124,439.50 in annual, ongoing external costs) x (823 small non-OATS-reporting broker-dealers)].

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<sup>362</sup> \$124,439.50 = (\$124,373 in ongoing outsourcing costs) + (\$66.50 to maintain the allocation timestamp)

<sup>363</sup> \$102,413,708.50 = (\$124,373 in ongoing outsourcing costs) + (\$66.50 to maintain the allocation timestamp) x (823 small non-OATS reporting broker-dealers). x (823 small non-OATS-reporting broker-dealers) = \$104,661,477.87 in aggregate ongoing external costs to ensure ongoing compliance with Rule 613.

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	21	1	\$3,209,523.8	\$1,069,841.27	\$2,657,142.86	\$3,726,984.13	\$3,726,984.13	\$78,266,666.73	
Data Collection and Reporting (Participants)	Third Party Disclosure	21	1	\$361,904.76	\$120,634.92	\$352,380.95	\$473,015.87	\$473,015.87	\$9,933,333.27	
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	\$4,857,533.52	
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	\$493,722.48	\$917,319.25	\$917,319.25	\$28,436,896.75	
Data Collection and Reporting (Large OATS Reporting Broker-Dealers)	Third Party Disclosure	126	1	\$1,250,000	\$416,666.67	\$529,166.67	\$945,833.34	\$945,833.34	\$119,175,000.84	
Data Collection and Reporting (Small OATS Reporting Broker-Dealers)	Third Party Disclosure	806	1	\$125,171.04	\$41,723.68	\$124,439.50	\$166,163.18	\$166,163.18	\$133,927,523.08	Estimated 395 <sup>364</sup>
Data Collection and Reporting (Small Non-OATS Reporting Broker-Dealers)	Third Party Disclosure	823	1	\$125,171.04	\$41,723.68	\$124,439.50	\$166,163.18	\$166,163.18	\$136,752,297.14	Estimated 823 <sup>365</sup>
Surveillance	Recordkeeping	21	1	\$271,428.57	\$90,476.19	\$1,000,000.00	\$1,090,476.19	\$1,090,476.19	\$22,899,999.99	
Written Assessment of Operation of CAT	Reporting	21	1			\$1,000.00	\$1,000.00	\$1,000.00	\$21,000.00	
Document on Expansion to Other Securities	Reporting	21	1	\$10,000.00	\$3,333.33		\$3,333.33	\$3,333.33	\$69,999.93	
<b>TOTAL COST FOR ALL RESPONDENTS</b>									<b>\$ 534,340,251.25</b>	

364 See supra note 240.

365 Id.

14. Costs to Federal Government

The Commission has incurred an external cost of \$250,000 for technology consulting services to date, and has incurred an external cost of \$250,000 for activities in 2017 related to programmatic and IT requirements development.

15. Changes in Burden

The collection of information associated with the adoption of Rule 613 (Rule 613 - Consolidated Audit Trail-Filing a National Market System Plan) pertained to the development and submission of the CAT NMS Plan. Such NMS plan has been developed and submitted, published for comment in the CAT NMS Plan Notice and subsequently approved by the Commission on November 15, 2016.<sup>366</sup> Changes in burden have occurred because the Plan has already been submitted, so, as described more fully above, the current costs and burdens of the information collection requirement are now related to implementation of the CAT NMS Plan, rather than the development and submission of the CAT NMS Plan.

16. Information Collection Planned for Statistical Purposes

The Commission does not intend for the collection of information to be published.

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.

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<sup>366</sup> See note 12, supra.