

SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34-80691; File No. SR-CHX-2017-08)

May 16, 2017

Self-Regulatory Organizations; Chicago Stock Exchange, Inc.; Notice of Filing and Immediate Effectiveness of Proposed Rule Change to Amend its Schedule of Fees and Assessments to Adopt a Fee Schedule to Establish Fees for Industry Members Related to the National Market System Plan Governing the Consolidated Audit Trail

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)<sup>1</sup>, and Rule 19b-4<sup>2</sup> thereunder, notice is hereby given that on May 3, 2017, the Chicago Stock Exchange, Inc. (“CHX” or the “Exchange”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I, II and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

CHX proposes to amend its Schedule of Fees and Assessments (the “Fee Schedule”) to establish fees for Industry Members related to the National Market System Plan Governing the Consolidated Audit Trail (the “CAT NMS Plan” or “Plan”). The text of this proposed rule change is available on the Exchange’s Web site at ([www.chx.com](http://www.chx.com)) and in the Commission’s Public Reference Room.

II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the CHX included statements concerning the purpose of and basis for the proposed rule changes and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

Item IV below. The CHX has prepared summaries, set forth in sections A, B and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Changes

1. Purpose

The Exchange, Bats BYX Exchange, Inc., Bats BZX Exchange, Inc., Bats EDGA Exchange, Inc., Bats EDGX Exchange, Inc., BOX Options Exchange LLC, C2 Options Exchange, Incorporated, Chicago Board Options Exchange, Incorporated, Financial Industry Regulatory Authority, Inc. (“FINRA”), Investors’ Exchange LLC, Miami International Securities Exchange, LLC, MIAX PEARL, LLC, NASDAQ BX, Inc., Nasdaq GEMX, LLC, Nasdaq ISE, LLC, Nasdaq MRX, LLC,<sup>3</sup> NASDAQ PHLX LLC, The NASDAQ Stock Market LLC, New York Stock Exchange LLC, NYSE MKT LLC, NYSE Arca, Inc. and NYSE National, Inc.<sup>4</sup> (collectively, the “Plan Participants”)<sup>5</sup> filed with the Commission, pursuant to Section 11A of the Exchange Act<sup>6</sup> and Rule 608 of Regulation NMS thereunder,<sup>7</sup> the CAT NMS Plan.<sup>8</sup> The Plan

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<sup>3</sup> ISE Gemini, LLC, ISE Mercury, LLC and International Securities Exchange, LLC have been renamed Nasdaq GEMX, LLC, Nasdaq MRX, LLC, and Nasdaq ISE, LLC, respectively. See Securities Exchange Act Rel. No. 80248 (Mar. 15, 2017), 82 Fed. Reg. 14547 (Mar. 21, 2017); Securities Exchange Act Rel. No. 80326 (Mar. 29, 2017), 82 Fed. Reg. 16460 (Apr. 4, 2017); and Securities Exchange Act Rel. No. 80325 (Mar. 29, 2017), 82 Fed. Reg. 16445 (Apr. 4, 2017).

<sup>4</sup> National Stock Exchange, Inc. has been renamed NYSE National, Inc. See Securities Exchange Act Rel. No. 79902 (Jan. 30, 2017), 82 Fed. Reg. 9258 (Feb. 3, 2017).

<sup>5</sup> A “Participant” is a “member” of the Exchange for purposes of the Act. See CHX Article 1, Rule 1(s). For clarity, the term “Plan Participant” will be used herein when referring to Participants of the Plan.

<sup>6</sup> 15 U.S.C. 78k-1.

<sup>7</sup> 17 CFR 242.608.

<sup>8</sup> See Letter from the Plan Participants to Brent J. Fields, Secretary, Commission, dated September 30, 2014; and Letter from Plan Participants to Brent J. Fields, Secretary, Commission, dated February 27, 2015. On December 24, 2015, the Plan Participants

Participants filed the Plan to comply with Rule 613 of Regulation NMS under the Exchange Act. The Plan was published for comment in the Federal Register on May 17, 2016,<sup>9</sup> and approved by the Commission, as modified, on November 15, 2016.<sup>10</sup> The Plan is designed to create, implement and maintain a consolidated audit trail (“CAT”) that would capture customer and order event information for orders in NMS Securities and OTC Equity Securities, across all markets, from the time of order inception through routing, cancellation, modification, or execution in a single consolidated data source. The Plan accomplishes this by creating CAT NMS, LLC (the “Company”), of which each Plan Participant is a member, to operate the CAT.<sup>11</sup> Under the CAT NMS Plan, the Operating Committee of the Company (“Operating Committee”) has discretion to establish funding for the Company to operate the CAT, including establishing fees that the Plan Participants will pay, and establishing fees for Industry Members that will be implemented by the Plan Participants (“CAT Fees”).<sup>12</sup> The Plan Participants are required to file with the SEC under Section 19(b) of the Exchange Act any such CAT Fees applicable to Industry Members that the Operating Committee approves.<sup>13</sup> Accordingly, the Exchange submits this fee filing to propose the Consolidated Audit Trail Funding Fees, which will require Industry Members that are Exchange members to pay the CAT Fees determined by the Operating Committee.

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submitted an amendment to the CAT NMS Plan. See Letter from Plan Participants to Brent J. Fields, Secretary, Commission, dated December 23, 2015.

<sup>9</sup> Securities Exchange Act Rel. No. 77724 (Apr. 27, 2016), 81 Fed. Reg. 30614 (May 17, 2016).

<sup>10</sup> Securities Exchange Act Rel. No. 79318 (Nov. 15, 2016), 81 Fed. Reg. 84696 (Nov. 23, 2016) (“Approval Order”).

<sup>11</sup> The Plan also serves as the limited liability company agreement for the Company.

<sup>12</sup> Section 11.1(b) of the CAT NMS Plan.

<sup>13</sup> Id.

## **(1) Executive Summary**

The following provides an executive summary of the CAT funding model approved by the Operating Committee, as well as Industry Members' rights and obligations related to the payment of CAT Fees calculated pursuant to the CAT funding model. A detailed description of the CAT funding model and the CAT Fees follows this executive summary.

### **(A) CAT Funding Model**

- **CAT Costs**. The CAT funding model is designed to establish CAT-specific fees to collectively recover the costs of building and operating the CAT from all CAT Reporters, including Industry Members and Plan Participants. The overall CAT costs for the calculation of the CAT Fees in this fee filing are comprised of Plan Processor CAT costs and non-Plan Processor CAT costs incurred, and estimated to be incurred, from November 21, 2016 through November 21, 2017. (See Section 3(a)(2)(E) [sic] below<sup>14</sup>)
- **Bifurcated Funding Model**. The CAT NMS Plan requires a bifurcated funding model, where costs associated with building and operating the CAT would be borne by (1) Plan Participants and Industry Members that are Execution Venues for Eligible Securities through fixed tier fees based on market share, and (2) Industry Members (other than alternative trading systems ("ATSS")) that execute transactions in Eligible Securities ("Execution Venue ATSS") through fixed tier fees based on message traffic for Eligible Securities. (See Section 3(a)(2) [sic] below)
- **Industry Member Fees**. Each Industry Member (other than Execution Venue ATSS) will be placed into one of nine tiers of fixed fees, based on "message traffic" in Eligible Securities for a defined period (as discussed below). Prior to the start of CAT reporting,

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<sup>14</sup> The Commission notes that references to Sections 3(a)(2) and 3(a)(3) in this Executive Summary should be instead to Sections II.A.1.(2) and II.A.1.(3), respectively.

“message traffic” will be comprised of historical equity and equity options orders, cancels and quotes provided by each exchange and FINRA over the previous three months. After an Industry Member begins reporting to the CAT, “message traffic” will be calculated based on the Industry Member’s Reportable Events reported to the CAT. Industry Members with lower levels of message traffic will pay a lower fee and Industry Members with higher levels of message traffic will pay a higher fee. (See Section 3(a)(2)(B) [sic] below)

- Execution Venue Fees. Each Equity Execution Venue will be placed in one of two tiers of fixed fees based on market share, and each Options Execution Venue will be placed in one of two tiers of fixed fees based on market share. Equity Execution Venue market share will be determined by calculating each Equity Execution Venue’s proportion of the total volume of NMS Stock and OTC Equity shares reported by all Equity Execution Venues during the relevant time period. Similarly, market share for Options Execution Venues will be determined by calculating each Options Execution Venue’s proportion of the total volume of Listed Options contracts reported by all Options Execution Venues during the relevant time period. Equity Execution Venues with a larger market share will pay a larger CAT Fee than Equity Execution Venues with a smaller market share. Similarly, Options Execution Venues with a larger market share will pay a larger CAT Fee than Options Execution Venues with a smaller market share. (See Section 3(a)(2)(C) [sic] below)
- Cost Allocation. For the reasons discussed below, in designing the model, the Operating Committee determined that 75 percent of total costs recovered would be allocated to Industry Members (other than Execution Venue ATs) and 25 percent would be allocated

to Execution Venues. In addition, the Operating Committee determined to allocate 75 percent of Execution Venue costs recovered to Equity Execution Venues and 25 percent to Options Execution Venues. (See Section 3(a)(2)(D) [sic] below)

- Comparability of Fees. The CAT funding model requires that the CAT Fees charged to the CAT Reporters with the most CAT-related activity (measured by market share and/or message traffic, as applicable) are generally comparable (where, for these comparability purposes, the tiered fee structure takes into consideration affiliations between or among CAT Reporters, whether Execution Venues and/or Industry Members). (See Section 3(a)(2)(F) [sic] below)

**(B) CAT Fees for Industry Members**

- Fee Schedule. The quarterly CAT Fees for each tier for Industry Members are set forth in the two fee schedules in the Consolidated Audit Trail Funding Fees, one for Equity ATs and one for Industry Members other than Equity ATs. (See Section 3(a)(3)(B) [sic] below)
- Quarterly Invoices. Industry Members will be billed quarterly for CAT Fees, with the invoices payable within 30 days. The quarterly invoices will identify within which tier the Industry Member falls. (See Section 3(a)(3)(C) [sic] below)
- Centralized Payment. Each Industry Member will receive from the Company one invoice for its applicable CAT Fees, not separate invoices from each Plan Participant of which it is a member. The Industry Members will pay its CAT Fees to the Company via the centralized system for the collection of CAT Fees established by the Operating Committee. (See Section 3(a)(3)(C) [sic] below)

- Billing Commencement. Industry Members will begin to receive invoices for CAT Fees as promptly as possible following the establishment of a billing mechanism. The Exchange will issue an Information Memorandum to its members when the billing mechanism is established, specifying the date when such invoicing of Industry Members will commence. (See Section 3(a)(2)(G) [sic] below)

## (2) Description of the CAT Funding Model

Article XI of the CAT NMS Plan requires the Operating Committee to approve the operating budget, including projected costs of developing and operating the CAT for the upcoming year. As set forth in Article XI of the CAT NMS Plan, the CAT NMS Plan requires a bifurcated funding model, where costs associated with building and operating the Central Repository would be borne by (1) Plan Participants and Industry Members that are Execution Venues through fixed tier fees based on market share, and (2) Industry Members (other than Execution Venue ATs) through fixed tier fees based on message traffic. In its order approving the CAT NMS Plan, the Commission determined that the proposed funding model was “reasonable”<sup>15</sup> and “reflects a reasonable exercise of the [Plan ]Participants’ funding authority to recover the [Plan ]Participants’ costs related to the CAT.”<sup>16</sup>

More specifically, the Commission stated in approving the CAT NMS Plan that “[t]he Commission believes that the proposed funding model is reasonably designed to allocate the costs of the CAT between the Plan [sic] Participants and Industry Members.”<sup>17</sup> The Commission further noted the following:

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<sup>15</sup> Approval Order at 84796.

<sup>16</sup> Id. at 84794.

<sup>17</sup> Id. at 84795.

The Commission believes that the proposed funding model reflects a reasonable exercise of the [Plan ]Participants' funding authority to recover the [Plan ]Participants' costs related to the CAT. The CAT is a regulatory facility jointly owned by the [Plan ]Participants and . . . the Exchange Act specifically permits the [Plan ]Participants to charge their members fees to fund their self-regulatory obligations. The Commission further believes that the proposed funding model is designed to impose fees reasonably related to the [Plan ]Participants' self-regulatory obligations because the fees would be directly associated with the costs of establishing and maintaining the CAT, and not unrelated Exchange [sic] services.<sup>18</sup>

Accordingly, the funding model imposes fees on both Plan Participants and Industry Members.

In addition, as discussed in Appendix C of the CAT NMS Plan, the Operating Committee considered the advantages and disadvantages of a variety of alternative funding and cost allocation models before selecting the proposed model.<sup>19</sup> After analyzing the various alternatives, the Operating Committee determined that the proposed tiered, fixed fee funding model provides a variety of advantages in comparison to the alternatives. First, the fixed fee model, as opposed to a variable fee model, provides transparency, ease of calculation, ease of billing and other administrative functions, and predictability of a fixed fee. Such factors are crucial to estimating a reliable revenue stream for the Company and for permitting CAT Reporters to reasonably predict their payment obligations for budgeting purposes.<sup>20</sup>

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<sup>18</sup> Id. at 84794.

<sup>19</sup> Section B.7, Appendix C of the CAT NMS Plan, Approval Order at 85006.

<sup>20</sup> In choosing a tiered fee structure, the SROs concluded that the variety of benefits offered by a tiered fee structure, discussed above, outweighed the fact that Industry Members in any particular tier would pay different rates per message traffic order event (e.g., an Industry Member with the largest amount of message traffic in one tier would pay a



Additionally, a strictly variable or metered funding model based on message volume would be far more likely to affect market behavior and place an inappropriate burden on competition. Moreover, as the SEC noted in approving the CAT NMS Plan, “[t]he [Plan ]Participants also have offered a reasonable basis for establishing a funding model based on broad tiers, in that it be may be easier to implement.”<sup>21</sup>

In addition, multiple reviews of current broker-dealer order and trading data submitted under existing reporting requirements showed a wide range in activity among broker-dealers, with a number of broker-dealers submitting fewer than 1,000 orders per month and other broker-dealers submitting millions and even billions of orders in the same period. Accordingly, the CAT NMS Plan includes a tiered approach to fees. The tiered approach helps ensure that fees are equitably allocated among similarly situated CAT Reporters and furthers the goal of lessening the impact on smaller firms.<sup>22</sup> The self-regulatory organizations considered several approaches to developing a tiered model, including defining fee tiers based on such factors as size of firm, message traffic or trading dollar volume. After analyzing the alternatives, it was concluded that the tiering should be based on the relative impact of CAT Reporters on the CAT System.

Accordingly, the CAT NMS Plan contemplates that costs will be allocated across the CAT Reporters on a tiered basis to allocate costs to those CAT Reporters that contribute more to the costs of creating, implementing and maintaining the CAT.<sup>23</sup> The fees to be assessed at each tier are calculated so as to recoup a proportion of costs appropriate to the message traffic or

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smaller amount per order event than an Industry Member in the same tier with the least amount of message traffic). Such variation is the natural result of a tiered fee structure.

<sup>21</sup> Approval Order at 84796.

<sup>22</sup> Section B.7, Appendix C of the CAT NMS Plan, Approval Order at 85006.

<sup>23</sup> Approval Order at 85005.

market share (as applicable) from CAT Reporters in each tier. Therefore, Industry Members generating the most message traffic will be in the higher tiers, and therefore be charged a higher fee. Industry Members with lower levels of message traffic will be in lower tiers and will be assessed a smaller fee for the CAT.<sup>24</sup> Correspondingly, Execution Venues with the highest market share will be in the top tier, and therefore will be charged a higher fee. Execution Venues with a lower market share will be in the lower tier and will be assessed a smaller fee for the CAT.<sup>25</sup>

The Commission also noted in approving the CAT NMS Plan that “[t]he [Plan] Participants have offered a credible justification for using different criteria to charge Execution Venues (market share) and Industry Members (message traffic)”<sup>26</sup> in the CAT funding model. While there are multiple factors that contribute to the cost of building, maintaining and using the CAT, processing and storage of incoming message traffic is one of the most significant cost drivers for the CAT.<sup>27</sup> Thus, the CAT NMS Plan provides that the fees payable by Industry Members (other than Execution Venue ATSSs) will be based on the message traffic generated by such Industry Member.<sup>28</sup>

The CAT NMS Plan provides that the Operating Committee will use different criteria to establish fees for Execution Venues and non-Execution Venues due to the fundamental differences between the two types of entities. In particular, the CAT NMS Plan provides that fees charged to CAT Reporters that are Execution Venues will be based on the level of market

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<sup>24</sup> Id.

<sup>25</sup> Id.

<sup>26</sup> Id. at 84796.

<sup>27</sup> Section B.7, Appendix C of the CAT NMS Plan, Approval Order at 85005.

<sup>28</sup> Section 11.3(b) of the CAT NMS Plan.

share and that costs charged to Industry Members (other than Execution Venue ATSs) will be based upon message traffic.<sup>29</sup> Because most Plan Participant message traffic consists of quotations, and Plan Participants usually disseminate quotations in all instruments they trade, regardless of execution volume, Execution Venues that are Plan Participants generally disseminate similar amounts of message traffic. Accordingly, basing fees for Execution Venues on message traffic would not provide the same degree of differentiation among Execution Venues that it does among Industry Members (other than Execution Venue ATSs). In contrast, execution volume more accurately delineates the different levels of trading activity of Execution Venues.<sup>30</sup>

The CAT NMS Plan's funding model also is structured to avoid a "reduction in market quality."<sup>31</sup> The tiered, fixed fee funding model is designed to limit the disincentives to providing liquidity to the market. For example, the Plan Participants expect that a firm that had a large volume of quotes would likely be categorized in one of the upper tiers, and would not be assessed a fee for this traffic directly as they would under a more directly metered model. In contrast, strictly variable or metered funding models based on message volume were far more likely to affect market behavior. In approving the CAT NMS Plan, the SEC stated that "[t]he [Plan ]Participants also offered a reasonable basis for establishing a funding model based on broad tiers, in that it may be ... less likely to have an incremental deterrent effect on liquidity provision."<sup>32</sup>

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<sup>29</sup> Section 11.2(c) of the CAT NMS Plan.

<sup>30</sup> Section B.7., Appendix C of the CAT NMS Plan, Approval Order at 85005.

<sup>31</sup> Section 11.2(e) of the CAT NMS Plan.

<sup>32</sup> Approval Order at 84796.

The CAT NMS Plan is structured to avoid potential conflicts raised by the Operating Committee determining fees applicable to its own members – the Plan Participants. First, the Company will be operated on a “break-even” basis, with fees imposed to cover costs and an appropriate reserve. Any surpluses will be treated as an operational reserve to offset future fees and will not be distributed to the Plan Participants as profits.<sup>33</sup> To ensure that the Plan Participants’ operation of the CAT will not contribute to the funding of their other operations, Section 11.1(c) of the CAT NMS Plan specifically states that “[a]ny surplus of the Company’s revenues over its expenses shall be treated as an operational reserve to offset future fees.” In addition, as set forth in Article VIII of the CAT NMS Plan, the Company “intends to operate in a manner such that it qualifies as a ‘business league’ within the meaning of Section 501(c)(6) of the [Internal Revenue] Code.” To qualify as a business league, an organization must “not [be] organized for profit and no part of the net earnings of [the organization can] inure[] to the benefit of any private shareholder or individual.”<sup>34</sup> As the SEC stated when approving the CAT NMS Plan, “the Commission believes that the Company’s application for Section 501(c)(6) business league status addresses issues raised by commenters about the Plan’s proposed allocation of profit and loss by mitigating concerns that the Company’s earnings could be used to benefit individual [Plan ]Participants.”<sup>35</sup>

Finally, by adopting a CAT-specific fee, the Plan Participants will be fully transparent regarding the costs of the CAT. Charging a general regulatory fee, which would be used to cover CAT costs as well as other regulatory costs, would be less transparent than the selected approach of charging a fee designated to cover CAT costs only.

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<sup>33</sup> Id. at 84792.

<sup>34</sup> 26 U.S.C. 501(c)(6).

<sup>35</sup> Approval Order at 84793.

A full description of the funding model is set forth below. This description includes the framework for the funding model as set forth in the CAT NMS Plan, as well as the details as to how the funding model will be applied in practice, including the number of fee tiers and the applicable fees for each tier. The Exchange notes that the complete funding model is described below, including those fees that are to be paid by the Plan Participants. The proposed Consolidated Audit Trail Funding Fees, however, do not apply to the Plan Participants; the proposed Consolidated Audit Trail Funding Fees only apply to Industry Members. The CAT fees for Plan Participants will be imposed separately by the Operating Committee pursuant to the CAT NMS Plan.

**(A) Funding Principles**

Section 11.2 of the CAT NMS Plan sets forth the principles that the Operating Committee applied in establishing the funding for the Company. The Operating Committee has considered these funding principles as well as the other funding requirements set forth in the CAT NMS Plan and in Rule 613 in developing the proposed funding model. The following are the funding principles in Section 11.2 of the CAT NMS Plan:

- To create transparent, predictable revenue streams for the Company that are aligned with the anticipated costs to build, operate and administer the CAT and other costs of the Company;
- To establish an allocation of the Company's related costs among Plan Participants and Industry Members that is consistent with the Exchange Act, taking into account the timeline for implementation of the CAT and distinctions in the securities trading operations of Plan Participants and Industry Members and their relative impact upon the Company's resources and operations;

- To establish a tiered fee structure in which the fees charged to: (i) CAT Reporters that are Execution Venues, including ATSS, are based upon the level of market share; (ii) Industry Members' non-ATS activities are based upon message traffic; (iii) the CAT Reporters with the most CAT-related activity (measured by market share and/or message traffic, as applicable) are generally comparable (where, for these comparability purposes, the tiered fee structure takes into consideration affiliations between or among CAT Reporters, whether Execution Venue and/or Industry Members);
- To provide for ease of billing and other administrative functions;
- To avoid any disincentives such as placing an inappropriate burden on competition and a reduction in market quality; and
- To build financial stability to support the Company as a going concern.

**(B) Industry Member Tiering**

Under Section 11.3(b) of the CAT NMS Plan, the Operating Committee is required to establish fixed fees to be payable by Industry Members, based on message traffic generated by such Industry Member, with the Operating Committee establishing at least five and no more than nine tiers.

The CAT NMS Plan clarifies that the fixed fees payable by Industry Members pursuant to Section 11.3(b) shall, in addition to any other applicable message traffic, include message traffic generated by: (i) an ATS that does not execute orders that is sponsored by such Industry Member; and (ii) routing orders to and from any ATS sponsored by such Industry Member. In addition, the Industry Member fees will apply to Industry Members that act as routing broker-dealers for exchanges. The Industry Member fees will not be applicable, however, to an ATS

that qualifies as an Execution Venue, as discussed in more detail in the section on Execution Venue tiering.

In accordance with Section 11.3(b), the Operating Committee approved a tiered fee structure for Industry Members (other than Execution Venue ATs) as described in this section. In determining the tiers, the Operating Committee considered the funding principles set forth in Section 11.2 of the CAT NMS Plan, seeking to create funding tiers that take into account the relative impact on CAT System resources of different Industry Members, and that establish comparable fees among the CAT Reporters with the most Reportable Events. The Operating Committee has determined that establishing nine tiers results in the fairest allocation of fees, best distinguishing between Industry Members with differing levels of message traffic. Thus, each such Industry Member will be placed into one of nine tiers of fixed fees, based on “message traffic” for a defined period (as discussed below). A nine tier structure was selected to provide the widest range of levels for tiering Industry Members such that Industry Members submitting significantly less message traffic to the CAT would be adequately differentiated from Industry Members submitting substantially more message traffic. The Operating Committee considered historical message traffic generated by Industry Members across all exchanges and as submitted to FINRA’s Order Audit Trail System (“OATS”), and considered the distribution of firms with similar levels of message traffic, grouping together firms with similar levels of message traffic. Based on this, the Operating Committee determined that nine tiers would best group firms with similar levels of message traffic, charging those firms with higher impact on the CAT more, while lowering the burden of Industry Members that have less CAT-related activity.

Each Industry Member (other than Execution Venue ATs) will be ranked by message traffic and tiered by predefined Industry Member percentages (the “Industry Member

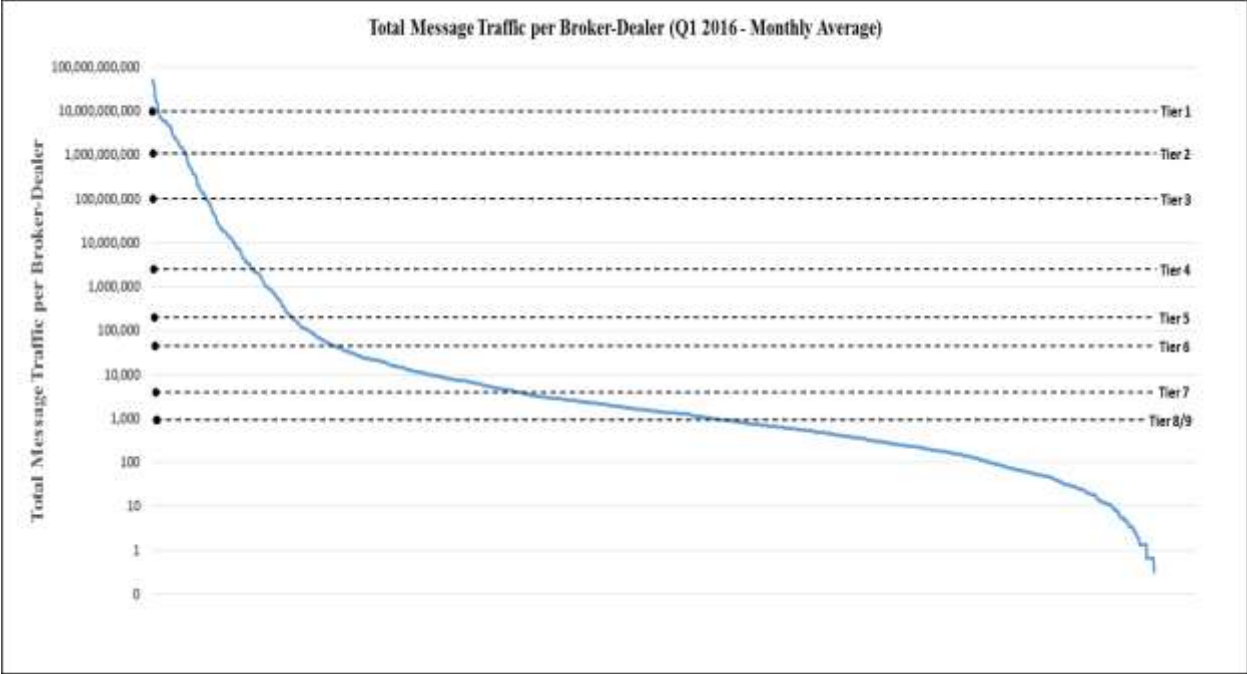
Percentages”). The Operating Committee determined to use predefined percentages rather than fixed volume thresholds to allow the funding model to ensure that the total CAT fees collected recover the intended CAT costs regardless of changes in the total level of message traffic. To determine the fixed percentage of Industry Members in each tier, the Operating Committee analyzed historical message traffic generated by Industry Members across all exchanges and as submitted to OATS, and considered the distribution of firms with similar levels of message traffic, grouping together firms with similar levels of message traffic. Based on this, the Operating Committee identified tiers that would group firms with similar levels of message traffic, charging those firms with higher impact on the CAT more, while lowering the burden on Industry Members that have less CAT-related activity.

The percentage of costs recovered by each Industry Member tier will be determined by predefined percentage allocations (the “Industry Member Recovery Allocation”). In determining the fixed percentage allocation of costs recovered for each tier, the Operating Committee considered the impact of CAT Reporter message traffic on the CAT System as well as the distribution of total message volume across Industry Members while seeking to maintain comparable fees among the largest CAT Reporters. Accordingly, following the determination of the percentage of Industry Members in each tier, the Operating Committee identified the percentage of total market volume for each tier based on the historical message traffic upon which Industry Members had been initially ranked. Taking this into account along with the resulting percentage of total recovery, the percentage allocation of costs recovered for each tier were assigned, allocating higher percentages of recovery to tiers with higher levels of message traffic while avoiding any inappropriate burden on competition. Furthermore, by using percentages of Industry Members and costs recovered per tier, the Operating Committee sought



to include stability and elasticity within the funding model, allowing the funding model to respond to changes in either the total number of Industry Members or the total level of message traffic.

The following chart illustrates the breakdown of nine Industry Member tiers across the monthly average of total equity and equity options orders, cancels and quotes in Q1 2016 and identifies relative gaps across varying levels of Industry Member message traffic as well as message traffic thresholds between the largest of Industry Member message traffic gaps. The Operating Committee referenced similar distribution illustrations to determine the appropriate division of Industry Member percentages in each tier by considering the grouping of firms with similar levels of message traffic and seeking to identify relative breakpoints in the message traffic between such groupings. In reviewing the chart and its corresponding table, note that while these distribution illustrations were referenced to help differentiate between Industry Member tiers, the proposed funding model is directly driven, not by fixed message traffic thresholds, but rather by fixed percentages of Industry Members across tiers to account for fluctuating levels of message traffic across time and to provide for the financial stability of the CAT by ensuring that the funding model will recover the required amounts regardless of changes in the number of Industry Members or the amount of message traffic. Actual messages in any tier will vary based on the actual traffic in a given measurement period, as well as the number of firms included in the measurement period. The Industry Member Percentages and Industry Member Recovery Allocation for each tier will remain fixed with each Industry Member's tier to be reassigned periodically, as described below in Section 3(a)(1)(H) [sic].



<b>Industry Member Tier</b>	<b>Monthly Average Message Traffic per Industry Member (Orders, Quotes and Cancels)</b>
Tier 1	> 10,000,000,000
Tier 2	> 1,000,000,000
Tier 3	> 100,000,000
Tier 4	> 2,500,000
Tier 5	> 200,000
Tier 6	> 50,000
Tier 7	> 5,000
Tier 8	> 1,000
Tier 9	≤ 1,000

Based on the above analysis, the Operating Committee approved the following Industry Member Percentages and Recovery Allocations:

<b>Industry Member Tier</b>	<b>Percentage of Industry Members</b>	<b>Percentage of Industry Member Recovery</b>	<b>Percentage of Total Recovery</b>
Tier 1	0.500%	8.50%	6.38%
Tier 2	2.500%	35.00%	26.25%
Tier 3	2.125%	21.25%	15.94%
Tier 4	4.625%	15.75%	11.81%
Tier 5	3.625%	7.75%	5.81%
Tier 6	4.000%	5.25%	3.94%
Tier 7	17.500%	4.50%	3.38%
Tier 8	20.125%	1.50%	1.13%
Tier 9	45.000%	0.50%	0.38%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>75%</b>

For the purposes of creating these tiers based on message traffic, the Operating Committee determined to define the term “message traffic” separately for the period before the commencement of CAT reporting and for the period after the start of CAT reporting. The different definition for message traffic is necessary as there will be no Reportable Events as defined in the Plan, prior to the commencement of CAT reporting. Accordingly, prior to the start of CAT reporting, “message traffic” will be comprised of historical equity and equity options orders, cancels and quotes provided by each exchange and FINRA over the previous three

months.<sup>36</sup> Prior to the start of CAT reporting, orders would be comprised of the total number of equity and equity options orders received and originated by a member of an exchange or FINRA over the previous three-month period, including principal orders, cancel/replace orders, market maker orders originated by a member of an exchange, and reserve (iceberg) orders as well as order routes and executions originated by a member of FINRA, and excluding order rejects and implied orders.<sup>37</sup> In addition, prior to the start of CAT reporting, cancels would be comprised of the total number of equity and equity option cancels received and originated by a member of an exchange or FINRA over a three-month period, excluding order modifications (e.g., order updates, order splits, partial cancels). Furthermore, prior to the start of CAT reporting, quotes would be comprised of information readily available to the exchanges and FINRA, such as the total number of historical equity and equity options quotes received and originated by a member of an exchange or FINRA over the prior three-month period.

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<sup>36</sup> The SEC approved exemptive relief permitting Options Market Maker quotes to be reported to the Central Repository by the relevant Options Exchange in lieu of requiring that such reporting be done by both the Options Exchange and the Options Market Maker, as required by Rule 613 of Regulation NMS. See Securities Exchange Act Release No. 77265 (Mar. 1, 2017, 81 Fed. Reg. 11856 (Mar. 7, 2016)). This exemption applies to Options Market Maker quotes for CAT reporting purposes only. Therefore, notwithstanding the reporting exemption provided for Options Market Maker quotes, Options Market Maker quotes will be included in the calculation of total message traffic for Options Market Makers for purposes of tiering under the CAT funding model both prior to CAT reporting and once CAT reporting commences

<sup>37</sup> Consequently, firms that do not have “message traffic” reported to an exchange or OATS before they are reporting to the CAT would not be subject to a fee until they begin to report information to CAT.

After an Industry Member begins reporting to the CAT, “message traffic” will be calculated based on the Industry Member’s Reportable Events reported to the CAT as will be defined in the Technical Specifications.<sup>38</sup>

The Operating Committee has determined to calculate fee tiers every three months, on a calendar quarter basis, based on message traffic from the prior three months. Based on its analysis of historical data, the Operating Committee believes that calculating tiers based on three months of data will provide the best balance between reflecting changes in activity by Industry Members while still providing predictability in the tiering for Industry Members. Because fee tiers will be calculated based on message traffic from the prior three months, the Operating Committee will begin calculating message traffic based on an Industry Member’s Reportable Events reported to the CAT once the Industry Member has been reporting to the CAT for three months. Prior to that, fee tiers will be calculated as discussed above with regard to the period prior to CAT reporting.

### **(C) Execution Venue Tiering**

Under Section 11.3(a) of the CAT NMS Plan, the Operating Committee is required to establish fixed fees payable by Execution Venues. Section 1.1 of the CAT NMS Plan defines an Execution Venue as “a [Plan ]Participant or an alternative trading system (“ATS”) (as defined in Rule 300 of Regulation ATS) that operates pursuant to Rule 301 of Regulation ATS (excluding any such ATS that does not execute orders).”<sup>39</sup>

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<sup>38</sup> If an Industry Member (other than an Execution Venue ATS) has no orders, cancels or quotes prior to the commencement of CAT Reporting, or no Reportable Events after CAT reporting commences, then the Industry Member would not have a CAT fee obligation.

<sup>39</sup> Although FINRA does not operate an execution venue, because it is a Plan Participant, it is considered an “Execution Venue” under the Plan for purposes of determining fees.

The Plan Participants determined that ATSS should be included within the definition of Execution Venue. Given the similarity between the activity of exchanges and ATSS, both of which meet the definition of an “exchange” as set forth in the Exchange Act and the fact that the similar trading models would have similar anticipated burdens on the CAT, the Plan Participants determined that ATSS should be treated in the same manner as the exchanges for the purposes of determining the level of fees associated with the CAT.<sup>40</sup>

Given the differences between Execution Venues that trade NMS Stocks and/or OTC Equity Securities and Execution Venues that trade Listed Options, Section 11.3(a) addresses Execution Venues that trade NMS Stocks and/or OTC Equity Securities separately from Execution Venues that trade Listed Options. Equity and Options Execution Venues are treated separately for two reasons. First, the differing quoting behavior of Equity and Options Execution Venues makes comparison of activity between Execution Venues difficult. Second, Execution Venue tiers are calculated based on market share of share volume, and it is therefore difficult to compare market share between asset classes (*i.e.*, equity shares versus options contracts). Discussed below is how the funding model treats the two types of Execution Venues.

### **(I) NMS Stocks and OTC Equity Securities**

Section 11.3(a)(i) of the CAT NMS Plan states that each Execution Venue that (i) executes transactions or, (ii) in the case of a national securities association, has trades reported by its members to its trade reporting facility or facilities for reporting transactions effected otherwise than on an exchange, in NMS Stocks or OTC Equity Securities will pay a fixed fee depending on the market share of that Execution Venue in NMS Stocks and OTC Equity Securities, with the Operating Committee establishing at least two and not more than five tiers

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<sup>40</sup> Section B.7, Appendix C of the CAT NMS Plan, Approval Order at 85005.

of fixed fees, based on an Execution Venue's NMS Stocks and OTC Equity Securities market share. For these purposes, market share for Execution Venues that execute transactions will be calculated by share volume, and market share for a national securities association that has trades reported by its members to its trade reporting facility or facilities for reporting transactions effected otherwise than on an exchange in NMS Stocks or OTC Equity Securities will be calculated based on share volume of trades reported, provided, however, that the share volume reported to such national securities association by an Execution Venue shall not be included in the calculation of such national security association's market share.

In accordance with Section 11.3(a)(i) of the CAT NMS Plan, the Operating Committee approved a tiered fee structure for Equity Execution Venues and Option Execution Venues. In determining the Equity Execution Venue Tiers, the Operating Committee considered the funding principles set forth in Section 11.2 of the CAT NMS Plan, seeking to create funding tiers that take into account the relative impact on system resources of different Equity Execution Venues, and that establish comparable fees among the CAT Reporters with the most Reportable Events. Each Equity Execution Venue will be placed into one of two tiers of fixed fees, based on the Execution Venue's NMS Stocks and OTC Equity Securities market share. In choosing two tiers, the Operating Committee performed an analysis similar to that discussed above with regard to the non-Execution Venue Industry Members to determine the number of tiers for Equity Execution Venues. The Operating Committee determined to establish two tiers for Equity Execution Venues, rather than a larger number of tiers as established for non-Execution Venue Industry Members, because the two tiers were sufficient to distinguish between the smaller number of Equity Execution Venues based on market share. Furthermore, the incorporation of additional Equity Execution Venue tiers would result in significantly higher fees for Tier 1

Equity Execution Venues and diminish comparability between Execution Venues and Industry Members.

Each Equity Execution Venue will be ranked by market share and tiered by predefined Execution Venue percentages, (the “Equity Execution Venue Percentages”). In determining the fixed percentage of Equity Execution Venues in each tier, the Operating Committee looked at historical market share of share volume for execution venues. Equities Execution Venue market share of share volume were sourced from market statistics made publicly-available by Bats Global Markets, Inc. (“Bats”). ATS market share of share volume was sourced from market statistics made publicly-available by FINRA. FINRA trading [sic] reporting facility (“TRF”) market share of share volume was sourced from market statistics made publicly available by Bats. As indicated by FINRA, ATSs accounted for 37.80% of the share volume across the TRFs during the recent tiering period. A 37.80/62.20 split was applied to the ATS and non-ATS breakdown of FINRA market share, with FINRA tiered based only on the non-ATS portion of its TRF market share of share volume.

Based on this, the Operating Committee considered the distribution of Execution Venues, and grouped together Execution Venues with similar levels of market share of share volume. In doing so, the Plan Participants considered that, as previously noted, Execution Venues in many cases have similar levels of message traffic due to quoting activity, and determined that it was simpler and more appropriate to have fewer, rather than more, Execution Venue tiers to distinguish between Execution Venues.

The percentage of costs recovered by each Equity Execution Venue tier will be determined by predefined percentage allocations (the “Equity Execution Venue Recovery Allocation”). In determining the fixed percentage allocation of costs recovered for each tier, the



Operating Committee considered the impact of CAT Reporter market share activity on the CAT System as well as the distribution of total market volume across Equity Execution Venues while seeking to maintain comparable fees among the largest CAT Reporters. Accordingly, following the determination of the percentage of Execution Venues in each tier, the Operating Committee identified the percentage of total market volume for each tier based on the historical market share upon which Execution Venues had been initially ranked. Taking this into account along with the resulting percentage of total recovery, the percentage allocation of costs recovered for each tier were assigned, allocating higher percentages of recovery to the tier with a higher level of market share while avoiding any inappropriate burden on competition. Furthermore, due to the similar levels of impact on the CAT System across Execution Venues, there is less variation in CAT Fees between the highest and lowest of tiers for Execution Venues. Furthermore, by using percentages of Equity Execution Venues and costs recovered per tier, the Operating Committee sought to include stability and elasticity within the funding model, allowing the funding model to respond to changes in either the total number of Equity Execution Venues or changes in market share.

Based on this analysis, the Operating Committee approved the following Equity Execution Venue Percentages and Recovery Allocations:

<b>Equity Execution Venue Tier</b>	<b>Percentage of Equity Execution Venues</b>	<b>Percentage of Execution Venue Recovery</b>	<b>Percentage of Total Recovery</b>
Tier 1	25.00%	26.00%	6.50%
Tier 2	75.00%	49.00%	12.25%
<b>Total</b>	<b>100%</b>	<b>75%</b>	<b>18.75%</b>

The following table exhibits the relative separation of market share of share volume between Tier 1 and Tier 2 Equity Execution Venues. In reviewing the table, note that while this division was referenced as a data point to help differentiate between Equity Execution Venue tiers, the proposed funding model is directly driven not by market share thresholds, but rather by fixed percentages of Equity Execution Venues across tiers to account for fluctuating levels of market share across time. Actual market share in any tier will vary based on the actual market activity in a given measurement period, as well as the number of Equity Execution Venues included in the measurement period. The Equity Execution Venue Percentages and Equity Execution Venue Recovery Allocation for each tier will remain fixed with each Equity Execution Venue tier to be reassigned periodically, as described below in Section 3(a)(1)(I) [sic].

<b>Equity Execution Venue Tier</b>	<b>Equity Market Share of Share Volume</b>
Tier 1	$\geq 1\%$
Tier 2	$< 1\%$

**(II) Listed Options**

Section 11.3(a)(ii) of the CAT NMS Plan states that each Execution Venue that executes transactions in Listed Options will pay a fixed fee depending on the Listed Options market share of that Execution Venue, with the Operating Committee establishing at least two and no more than five tiers of fixed fees, based on an Execution Venue’s Listed Options market share. For these purposes, market share will be calculated by contract volume.

In accordance with Section 11.3(a)(ii) of the CAT NMS Plan, the Operating Committee approved a tiered fee structure for Options Execution Venues. In determining the tiers, the Operating Committee considered the funding principles set forth in Section 11.2 of the CAT NMS Plan, seeking to create funding tiers that take into account the relative impact on system

resources of different Options Execution Venues, and that establish comparable fees among the CAT Reporters with the most Reportable Events. Each Options Execution Venue will be placed into one of two tiers of fixed fees, based on the Execution Venue's Listed Options market share. In choosing two tiers, the Operating Committee performed an analysis similar to that discussed above with regard to Industry Members (other than Execution Venue ATs) to determine the number of tiers for Options Execution Venues. The Operating Committee determined to establish two tiers for Options Execution Venues, rather than a larger number of tiers as established for Industry Members (other than Execution Venue ATs), because the two tiers were sufficient to distinguish between the smaller number of Options Execution Venues based on market share. Furthermore, due to the smaller number of Options Execution Venues, the incorporation of additional Options Execution Venue tiers would result in significantly higher fees for Tier 1 Options Execution Venues and reduce comparability between Execution Venues and Industry Members.

Each Options Execution Venue will be ranked by market share and tiered by predefined Execution Venue percentages, (the "Options Execution Venue Percentages"). To determine the fixed percentage of Options Execution Venues in each tier, the Operating Committee analyzed the historical and publicly available market share of Options Execution Venues to group Options Execution Venues with similar market shares across the tiers. Options Execution Venue market share of share volume were sourced from market statistics made publicly-available by Bats. The process for developing the Options Execution Venue Percentages was the same as discussed above with regard to Equity Execution Venues.

The percentage of costs recovered by each Options Execution Venue tier will be determined by predefined percentage allocations (the "Options Execution Venue Recovery

Allocation”). In determining the fixed percentage allocation of costs recovered for each tier, the Operating Committee considered the impact of CAT Reporter market share activity on the CAT System as well as the distribution of total market volume across Options Execution Venues while seeking to maintain comparable fees among the largest CAT Reporters. Furthermore, by using percentages of Options Execution Venues and costs recovered per tier, the Operating Committee sought to include stability and elasticity within the funding model, allowing the funding model to respond to changes in either the total number of Options Execution Venues or changes in market share. The process for developing the Options Execution Venue Recovery Allocation was the same as discussed above with regard to Equity Execution Venues.

Based on this analysis, the Operating Committee approved the following Options Execution Venue Percentages and Recovery Allocations:

<b>Options Execution Venue Tier</b>	<b>Percentage of Options Execution Venues</b>	<b>Percentage of Execution Venue Recovery</b>	<b>Percentage of Total Recovery</b>
Tier 1	75.00%	20.00%	5.00%
Tier 2	25.00%	5.00%	1.25%
<b>Total</b>	<b>100%</b>	<b>25%</b>	<b>6.25%</b>

The following table exhibits the relative separation of market share of share volume between Tier 1 and Tier 2 Options Execution Venues. In reviewing the table, note that while this division was referenced as a data point to help differentiate between Options Execution Venue tiers, the proposed funding model is directly driven, not by market share thresholds, but rather by fixed percentages of Options Execution Venues across tiers to account for fluctuating levels of market share across time. Actual market share in any tier will vary based on the actual market activity in a given measurement period, as well as the number of Options Execution Venues

included in the measurement period. The Options Execution Venue Percentages and Equity Execution Venue Recovery Allocation for each tier will remain fixed with each Options Execution Venue tier to be reassigned periodically, as described below in Section 3(a)(1)(I) [sic].

<b>Options Execution Venue Tier</b>	<b>Options Market Share of Share Volume</b>
Tier 1	$\geq 1\%$
Tier 2	$< 1\%$

### **(III) Market Share/Tier Assignments**

The Operating Committee determined that, prior to the start of CAT reporting, market share for Execution Venues would be sourced from publicly-available market data. Options and equity volumes for Plan Participants will be sourced from market data made publicly available by Bats while Execution Venue ATS volumes will be sourced from market data made publicly available by FINRA. Set forth in the Appendix are two charts, one listing the current Equity Execution Venues, each with its rank and tier, and one listing the current Options Execution Venues, each with its rank and tier.

After the commencement of CAT reporting, market share for Execution Venues will be sourced from data reported to the CAT. Equity Execution Venue market share will be determined by calculating each Equity Execution Venue's proportion of the total volume of NMS Stock and OTC Equity shares reported by all Equity Execution Venues during the relevant time period. Similarly, market share for Options Execution Venues will be determined by calculating each Options Execution Venue's proportion of the total volume of Listed Options contracts reported by all Options Execution Venues during the relevant time period.

The Operating Committee has determined to calculate fee tiers for Execution Venues every three months based on market share from the prior three months. Based on its analysis of historical data, the Operating Committee believes calculating tiers based on three months of data will provide the best balance between reflecting changes in activity by Execution Venues while still providing predictability in the tiering for Execution Venues.

**(D) Allocation of Costs**

In addition to the funding principles discussed above, including comparability of fees, Section 11.1(c) of the CAT NMS Plan also requires expenses to be fairly and reasonably shared among the Plan Participants and Industry Members. Accordingly, in developing the proposed fee schedules pursuant to the funding model, the Operating Committee calculated how the CAT costs would be allocated between Industry Members and Execution Venues, and how the portion of CAT costs allocated to Execution Venues would be allocated between Equity Execution Venues and Options Execution Venues. These determinations are described below.

**(I) Allocation Between Industry Members and Execution Venues**

In determining the cost allocation between Industry Members (other than Execution Venue ATs) and Execution Venues, the Operating Committee analyzed a range of possible splits for revenue recovered from such Industry Members and Execution Venues. Based on this analysis, the Operating Committee determined that 75 percent of total costs recovered would be allocated to Industry Members (other than Execution Venue ATs) and 25 percent would be allocated to Execution Venues. The Operating Committee determined that this 75/25 division maintained the greatest level of comparability across the funding model, keeping in view that comparability should consider affiliations among or between CAT Reporters (e.g., firms with multiple Industry Members and/or exchange licenses). For example, the cost allocation

establishes fees for the largest Industry Members (i.e., those Industry Members in Tiers 1, 2 and 3) that are comparable to the largest Equity Execution Venues and Options Execution Venues (i.e., those Execution Venues in Tier 1). In addition, the cost allocation establishes fees for Execution Venue complexes that are comparable to those of Industry Member complexes. For example, when analyzing alternative allocations, other possible allocations led to much higher fees for larger Industry Members than for larger Execution Venues or vice versa, and/or led to much higher fees for Industry Member complexes than Execution Venue complexes or vice versa.

Furthermore, the allocation of total CAT costs recovered recognizes the difference in the number of CAT Reporters that are Industry Members versus CAT Reporters that are Execution Venues. Specifically, the cost allocation takes into consideration that there are approximately 25 times more Industry Members expected to report to the CAT than Execution Venues (e.g., an estimated 1,630 Industry Members versus 70 Execution Venues as of January 2017).

## **(II) Allocation Between Equity Execution Venues and Options Execution Venues**

The Operating Committee also analyzed how the portion of CAT costs allocated to Execution Venues would be allocated between Equity Execution Venues and Options Execution Venues. In considering this allocation of costs, the Operating Committee analyzed a range of alternative splits for revenue recovered between Equity and Options Execution Venues, including a 70/30, 67/33, 65/35, 50/50 and 25/75 split. Based on this analysis, the Operating Committee determined to allocate 75 percent of Execution Venue costs recovered to Equity Execution Venues and 25 percent to Options Execution Venues. The Operating Committee determined that a 75/25 division between Equity and Options Execution Venues maintained elasticity across the funding model as well the greatest level of fee equitability and comparability

based on the current number of Equity and Options Execution Venues. For example, the allocation establishes fees for the larger Equity Execution Venues that are comparable to the larger Options Execution Venues, and fees for the smaller Equity Execution Venues that are comparable to the smaller Options Execution Venues. In addition to fee comparability between Equity Execution Venues and Options Execution Venues, the allocation also establishes equitability between larger (Tier 1) and smaller (Tier 2) Execution Venues based upon the level of market share. Furthermore, the allocation is intended to reflect the relative levels of current equity and options order events.

#### **(E) Fee Levels**

The Operating Committee determined to establish a CAT-specific fee to collectively recover the costs of building and operating the CAT. Accordingly, under the funding model, the sum of the CAT Fees is designed to recover the total cost of the CAT. The Operating Committee has determined overall CAT costs to be comprised of Plan Processor costs and non-Plan Processor costs, which are estimated to be \$50,700,000 in total for the year beginning November 21, 2016.<sup>41</sup>

The Plan Processor costs relate to costs incurred by the Plan Processor and consist of the Plan Processor's current estimates of average yearly ongoing costs, including development cost, which total \$37,500,000. This amount is based upon the fees due to the Plan Processor pursuant to the agreement with the Plan Processor.

The non-Plan Processor estimated costs incurred and to be incurred by the Company through November 21, 2017 consist of three categories of costs. The first category of such costs are third party support costs, which include historic legal fees, consulting fees and audit fees

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<sup>41</sup> It is anticipated that CAT-related costs incurred prior to November 21, 2016 will be addressed via a separate fee filing.



from November 21, 2016 until the date of filing as well as estimated third party support costs for the rest of the year. These amount to an estimated \$5,200,000. The second category of non-Plan Processor costs are estimated insurance costs for the year. Based on discussions with potential insurance providers, assuming \$2-5 million insurance premium on \$100 million in coverage, the Company has received an estimate of \$3,000,000 for the annual cost. The final cost figures will be determined following receipt of final underwriter quotes. The third category of non-Plan Processor costs is the operational reserve, which is comprised of three months of ongoing Plan Processor costs (\$9,375,000), third party support costs (\$1,300,000) and insurance costs (\$750,000). The Operating Committee aims to accumulate the necessary funds for the establishment of the three-month operating reserve for the Company through the CAT Fees charged to CAT Reporters for the year. On an ongoing basis, the Operating Committee will account for any potential need for the replenishment of the operating reserve or other changes to total cost during its annual budgeting process. The following table summarizes the Plan Processor and non-Plan Processor cost components which comprise the total CAT costs of \$50,700,000.

<b>Cost Category</b>	<b>Cost Component</b>	<b>Amount</b>
Plan Processor	Operational Costs	\$37,500,000
Non-Plan Processor	Third Party Support Costs	\$5,200,000
	Operational Reserve	\$5,000,000 <sup>42</sup>
	Insurance Costs	\$3,000,000
	<b>Estimated Total</b>	<b>\$50,700,000</b>

<sup>42</sup> This \$5,000,000 represents the gradual accumulation of the funds for a target operating reserve of \$11,425,000.

Based on the estimated costs and the calculations for the funding model described above, the Operating Committee determined to impose the following fees:<sup>43</sup>

For Industry Members (other than Execution Venue ATs):

<b>Tier</b>	<b>Monthly CAT Fee</b>	<b>Quarterly CAT Fee</b>	<b>CAT Fees Paid Annually<sup>44</sup></b>
1	\$33,668	\$101,004	\$404,016
2	\$27,051	\$81,153	\$324,612
3	\$19,239	\$57,717	\$230,868
4	\$6,655	\$19,965	\$79,860
5	\$4,163	\$12,489	\$49,956
6	\$2,560	\$7,680	\$30,720
7	\$501	\$1,503	\$6,012
8	\$145	\$435	\$1,740
9	\$22	\$66	\$264

For Execution Venues for NMS Stocks and OTC Equity Securities:

<b>Tier</b>	<b>Monthly CAT Fee</b>	<b>Quarterly CAT Fee</b>	<b>CAT Fees Paid Annually<sup>45</sup></b>
1	\$21,125	\$63,375	\$253,500
2	\$12,940	\$38,820	\$155,280

For Execution Venues for Listed Options:

<b>Tier</b>	<b>Monthly CAT Fee</b>	<b>Quarterly CAT Fee</b>	<b>CAT Fees Paid Annually<sup>46</sup></b>
1	\$19,205	\$57,615	\$230,460
2	\$13,204	\$39,612	\$158,448

<sup>43</sup> Note that all monthly, quarterly and annual CAT Fees have been rounded to the nearest dollar.

<sup>44</sup> This column represents the approximate total CAT Fees paid each year by each Industry Member (other than Execution Venue ATs) (i.e., “CAT Fees Paid Annually” = “Monthly CAT Fee” x 12 months).

<sup>45</sup> This column represents the approximate total CAT Fees paid each year by each Execution Venue for NMS Stocks and OTC Equity Securities (i.e., “CAT Fees Paid Annually” = “Monthly CAT Fee” x 12 months).

<sup>46</sup> This column represents the approximate total CAT Fees paid each year by each Execution Venue for Listed Options (i.e., “CAT Fees Paid Annually” = “Monthly CAT Fee” x 12 months).

As noted above, the fees set forth in the tables reflect the Operating Committee's decision to ensure comparable fees between Execution Venues and Industry Members. The fees of the top tiers for Industry Members (other than Execution Venue ATs) are not identical to the top tier for Execution Venues, however, because the Operating Committee also determined that the fees for Execution Venue complexes should be comparable to those of Industry Member complexes. The difference in the fees reflects this decision to recognize affiliations.

The Operating Committee has calculated the schedule of effective fees for Industry Members (other than Execution Venue ATs) and Execution Venues in the following manner. Note that the calculation of CAT Reporter fees assumes 53 Equity Execution Venues, 15 Options Execution Venues and 1,631 Industry Members (other than Execution Venue ATs) as of January 2017.

**Calculation of Annual Tier Fees for Industry Members (“IM”)**

<b>Industry Member Tier</b>	<b>Percentage of Industry Members</b>	<b>Percentage of Industry Member Recovery</b>	<b>Percentage of Total Recovery</b>
Tier 1	0.500%	8.50%	6.38%
Tier 2	2.500%	35.00%	26.25%
Tier 3	2.125%	21.25%	15.94%
Tier 4	4.625%	15.75%	11.81%
Tier 5	3.625%	7.75%	5.81%
Tier 6	4.000%	5.25%	3.94%
Tier 7	17.500%	4.50%	3.38%
Tier 8	20.125%	1.50%	1.13%
Tier 9	45.000%	0.50%	0.38%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>75%</b>

<b>Industry Member Tier</b>	<b>Estimated Number of Industry Members</b>
Tier 1	8
Tier 2	41
Tier 3	35
Tier 4	75
Tier 5	59
Tier 6	65
Tier 7	285
Tier 8	328
Tier 9	735
<b>Total</b>	<b>1,631</b>

**Calculation 1.1 (Calculation of a Tier 1 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 0.5\% \text{ [% of Tier 1 IMs]} = 8 \text{ [Estimated Tier 1 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 8.50\% \text{ [% of Tier 1 IM Recovery]}}{8 \text{ [Estimated Tier 1 IMs]}} \right) \div 12 \text{ [Months per year]} = \$33,668$$

**Calculation 1.2 (Calculation of a Tier 2 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 2.5\% \text{ [% of Tier 2 IMs]} = 41 \text{ [Estimated Tier 2 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 35\% \text{ [% of Tier 2 IM Recovery]}}{41 \text{ [Estimated Tier 2 IMs]}} \right) \div 12 \text{ [Months per year]} = \$27,051$$

**Calculation 1.3 (Calculation of a Tier 3 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 2.125\% \text{ [% of Tier 3 IMs]} = 35 \text{ [Estimated Tier 3 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 21.25\% \text{ [% of Tier 3 IM Recovery]}}{35 \text{ [Estimated Tier 3 IMs]}} \right) \div 12 \text{ [Months per year]} = \$19,239$$

**Calculation 1.4 (Calculation of a Tier 4 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 4.625\% \text{ [% of Tier 4 IMs]} = 75 \text{ [Estimated Tier 4 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 15.75\% \text{ [% of Tier 4 IM Recovery]}}{75 \text{ [Estimated Tier 4 IMs]}} \right) \div 12 \text{ [Months per year]} = \$6,655$$

**Calculation 1.5 (Calculation of a Tier 5 Industry Member Annual Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 3.625\% \text{ [% of Tier 5 IMs]} = 59 \text{ [Estimated Tier 5 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 7.75\% \text{ [% of Tier 5 IM Recovery]}}{59 \text{ [Estimated Tier 5 IMs]}} \right) \div 12 \text{ [Months per year]} = \$4,163$$

**Calculation 1.6 (Calculation of a Tier 6 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 4\% \text{ [% of Tier 6 IMs]} = 65 \text{ [Estimated Tier 6 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 5.25\% \text{ [% of Tier 6 IM Recovery]}}{65 \text{ [Estimated Tier 6 IMs]}} \right) \div 12 \text{ [Months per year]} = \$2,560$$

**Calculation 1.7 (Calculation of a Tier 7 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 17.5\% \text{ [% of Tier 7 IMs]} = 285 \text{ [Estimated Tier 7 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 4.50\% \text{ [% of Tier 7 IM Recovery]}}{285 \text{ [Estimated Tier 7 IMs]}} \right) \div 12 \text{ [Months per year]} = \$501$$

**Calculation 1.8 (Calculation of a Tier 8 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 20.125\% \text{ [% of Tier 8 IMs]} = 328 \text{ [Estimated Tier 8 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 1.50\% \text{ [% of Tier 8 IM Recovery]}}{328 \text{ [Estimated Tier 8 IMs]}} \right) \div 12 \text{ [Months per year]} = \$145$$

**Calculation 1.9 (Calculation of a Tier 9 Industry Member Monthly Fee)**

$$1,631 \text{ [Estimated Tot. IMs]} \times 45\% \text{ [% of Tier 9 IMs]} = 735 \text{ [Estimated Tier 9 IMs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 75\% \text{ [IM \% of Tot. Ann. CAT Costs]} \times 0.50\% \text{ [% of Tier 9 IM Recovery]}}{735 \text{ [Est. Tier 9 IMs]}} \right) \div 12 \text{ [Months per year]} = \$22$$

**Calculation of Annual Tier Fees for Equity Execution Venues (“EV”)**

Equity Execution Venue Tier	Percentage of Equity Execution Venues	Percentage of Execution Venue Recovery	Percentage of Total Recovery
Tier 1	25.00%	26.00%	6.50%
Tier 2	75.00%	49.00%	12.25%
<b>Total</b>	<b>100%</b>	<b>75%</b>	<b>18.75%</b>

Equity Execution Venue Tier	Estimated Number of Equity Execution Venues
Tier 1	13
Tier 2	40
<b>Total</b>	<b>53</b>

**Calculation 2.1 (Calculation of a Tier 1 Equity Execution Venue Monthly Fee)**

$$52 \text{ [Estimated Tot. Equity EVs]} \times 25\% \text{ [% of Tier 1 Equity EVs]} = 13 \text{ [Estimated Tier 1 Equity EVs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann. CAT Costs]} \times 25\% \text{ [EV \% of Tot. Ann. CAT Costs]} \times 26\% \text{ [% of Tier 1 Equity EV Recovery]}}{13 \text{ [Estimated Tier 1 Equity EVs]}} \right) \div 12 \text{ [Months per year]} = \$21,125$$

**Calculation 2.2 (Calculation of a Tier 2 Equity Execution Venue Monthly Fee)**

$$52 \text{ [Estimated Tot. Equity EVs]} \times 75\% \text{ [% of Tier 2 Equity EVs]} = 40 \text{ [Estimated Tier 2 Equity EVs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann.CAT Costs]} \times 25\% \text{ [EV \% of Tot. Ann.CAT Costs]} \times 49\% \text{ [% of Tier 2 Equity EV Recovery]}}{40 \text{ [Estimated Tier 2 Equity EVs]}} \right) \div 12 \text{ [Months per year]} = \$12,940$$

**Calculation of Annual Tier Fees for Options Execution Venues (“EV”)**

Options Execution Venue Tier	Percentage of Options Execution Venues	Percentage of Execution Venue Recovery	Percentage of Total Recovery
Tier 1	75.00%	20.00%	5.00%
Tier 2	25.00%	5.00%	1.25%
<b>Total</b>	<b>100%</b>	<b>25%</b>	<b>6.25%</b>

Options Execution Venue Tier	Estimated Number of Options Execution Venues
Tier 1	11
Tier 2	4
<b>Total</b>	<b>15</b>

**Calculation 3.1 (Calculation of a Tier 1 Options Execution Venue Monthly Fee)**

$$15 \text{ [Estimated Tot. Options EVs]} \times 75\% \text{ [% of Tier 1 Options EVs]} = 11 \text{ [Estimated Tier 1 Options EVs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann.CAT Costs]} \times 25\% \text{ [EV \% of Tot. Ann.CAT Costs]} \times 20\% \text{ [% of Tier 1 Options EV Recovery]}}{11 \text{ [Estimated Tier 1 Options EVs]}} \right) \div 12 \text{ [Months per year]} = \$19,205$$

**Calculation 3.2 (Calculation of a Tier 2 Options Execution Venue Annual Fee)**

$$15 \text{ [Estimated Tot. Options EVs]} \times 25\% \text{ [% of Tier 2 Options EVs]} = 4 \text{ [Estimated Tier 2 Options EVs]}$$

$$\left( \frac{\$50,700,000 \text{ [Tot. Ann.CAT Costs]} \times 25\% \text{ [EV \% of Tot. Ann.CAT Costs]} \times 5\% \text{ [% of Tier 2 Options EV Recovery]}}{4 \text{ [Estimated Tier 2 Options EVs]}} \right) \div 12 \text{ [Months per year]} = \$13,204$$

**Traceability of Total CAT Fees**

Type	Industry Member Tier	Estimated Number of Members	CAT Fees Paid Annually	Total Recovery
Industry Members	Tier 1	8	\$404,016	\$3,232,128
	Tier 2	41	\$324,612	\$13,309,092
	Tier 3	35	\$230,868	\$8,080,380
	Tier 4	75	\$79,860	\$5,989,500
	Tier 5	59	\$49,956	\$2,947,404
	Tier 6	65	\$30,720	\$1,996,800
	Tier 7	285	\$6,012	\$1,713,420
	Tier 8	328	\$1,740	\$570,720
	Tier 9	735	\$264	\$194,040
	<b>Total</b>	<b>1,631</b>	<b>-</b>	<b>\$38,033,484</b>
Equity Execution Venues	Tier 1	13	\$253,500	\$3,295,500
	Tier 2	40	\$155,280	\$6,211,200
	<b>Total</b>	<b>53</b>	<b>-</b>	<b>\$9,506,700</b>
Options Execution Venues	Tier 1	11	\$230,460	\$2,535,060
	Tier 2	4	\$158,448	\$633,792
	<b>Total</b>	<b>15</b>	<b>-</b>	<b>\$3,168,852</b>
<b>Total</b>				<b>\$50,709,036</b>
<b>Excess<sup>47</sup></b>				<b>\$9,036</b>

**(F) Comparability of Fees**

<sup>47</sup> The amount in excess of the total CAT costs will contribute to the gradual accumulation of the target operating reserve of \$11.425 million.



The funding principles require a funding model in which the fees charged to the CAT Reporters with the most CAT-related activity (measured by market share and/or message traffic, as applicable) are generally comparable (where, for these comparability purposes, the tiered fee structure takes into consideration affiliations between or among CAT Reporters, whether Execution Venue and/or Industry Members). Accordingly, in creating the model, the Operating Committee sought to take account of the affiliations between or among CAT Reporters – that is, where affiliated entities may have multiple Industry Member and/or Execution Venue licenses, by maintaining relative comparability of fees among such affiliations with the most expected CAT-related activity. To do this, the Plan Participants identified representative affiliations in the largest tier of both Execution Venues and Industry Members and compared the aggregate fees that would be paid by such firms.

While the proposed fees for Tier 1 and Tier 2 Industry Members are relatively higher than those of Tier 1 and Tier 2 Execution Venues, Execution Venue complex fees are relatively higher than those of Industry Member complexes largely due to affiliations between Execution Venues. The tables set forth below describe the largest Execution Venue and Industry Member complexes and their associated fees:<sup>48</sup>

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<sup>48</sup> Note that the analysis of the complexes was performed on a best efforts basis, as all affiliations between the 1631 Industry Members may not be included.

<b>Execution Venue Complexes</b>			
<b>Execution Venue Complex</b>	<b>Listing of Equity Execution Venue Tiers</b>	<b>Listing of Options Execution Venue Tier</b>	<b>Total Fees by EV Complex</b>
Execution Venue Complex 1	<ul style="list-style-type: none"> <li>• Tier 1 (x2)</li> <li>• Tier 2 (x1)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 1 (x4)</li> <li>• Tier 2 (x2)</li> </ul>	<b>\$1,900,962</b>
Execution Venue Complex 2	<ul style="list-style-type: none"> <li>• Tier 1 (x2)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 1 (x2)</li> <li>• Tier 2 (x1)</li> </ul>	<b>\$1,863,801</b>
Execution Venue Complex 3	<ul style="list-style-type: none"> <li>• Tier 1 (x2)</li> <li>• Tier 2 (x2)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 1 (x2)</li> </ul>	<b>\$1,278,447</b>

<b>Industry Member Complexes</b>			
<b>Industry Member Complex</b>	<b>Listing of Industry Member Tiers</b>	<b>Listing of ATS Tiers</b>	<b>Total Fees by IM Complex</b>
Industry Member Complex 1	<ul style="list-style-type: none"> <li>• Tier 1 (x2)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 2 (x1)</li> </ul>	<b>\$963,300</b>
Industry Member Complex 2	<ul style="list-style-type: none"> <li>• Tier 1 (x1)</li> <li>• Tier 4 (x1)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 2 (x3)</li> </ul>	<b>\$949,674</b>
Industry Member Complex 3	<ul style="list-style-type: none"> <li>• Tier 1 (x1)</li> <li>• Tier 2 (x1)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 2 (x1)</li> </ul>	<b>\$883,888</b>
Industry Member Complex 4	<ul style="list-style-type: none"> <li>• Tier 1 (x1)</li> <li>• Tier 2 (x1)</li> <li>• Tier 4 (x1)</li> </ul>	N/A	<b>\$808,472</b>
Industry Member Complex 5	<ul style="list-style-type: none"> <li>• Tier 2 (x1)</li> <li>• Tier 3 (x1)</li> <li>• Tier 4 (x1)</li> <li>• Tier 7 (x1)</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 2 (x1)</li> </ul>	<b>\$796,595</b>

**(G) Billing Onset**

Under Section 11.1(c) of the CAT NMS Plan, to fund the development and implementation of the CAT, the Company shall time the imposition and collection of all fees on Plan Participants and Industry Members in a manner reasonably related to the timing when the Company expects to incur such development and implementation costs. The Company is currently incurring such development and implementation costs and will continue to do so prior to the commencement of CAT reporting and thereafter. For example, the Plan Processor has required up-front payments to begin building the CAT. In addition, the Company continues to

incur consultant and legal expenses on an on-going basis to implement the CAT. Accordingly, the Operating Committee determined that all CAT Reporters, including both Industry Members and Execution Venues (including Plan Participants), would begin to be invoiced as promptly as possible following the establishment of a billing mechanism. The Exchange will issue an Information Memorandum to its members when the billing mechanism is established, specifying the date when such invoicing of Industry Members will commence.

#### **(H) Changes to Fee Levels and Tiers**

Section 11.3(d) of the CAT NMS Plan states that “[t]he Operating Committee shall review such fee schedule on at least an annual basis and shall make any changes to such fee schedule that it deems appropriate. The Operating Committee is authorized to review such fee schedule on a more regular basis, but shall not make any changes on more than a semi-annual basis unless, pursuant to a Supermajority Vote, the Operating Committee concludes that such change is necessary for the adequate funding of the Company.” With such reviews, the Operating Committee will review the distribution of Industry Members and Execution Venues across tiers, and make any updates to the percentage of CAT Reporters allocated to each tier as may be necessary. In addition, the reviews will evaluate the estimated ongoing CAT costs and the level of the operating reserve. To the extent that the total CAT costs decrease, the fees would be adjusted downward, and, to the extent that the total CAT costs increase, the fees would be adjusted upward.<sup>49</sup> Furthermore, any surplus of the Company’s revenues over its expenses is to be included within the operational reserve to offset future fees. The limitations on more frequent changes to the fee, however, are intended to provide budgeting certainty for the CAT Reporters

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<sup>49</sup> The CAT Fees are designed to recover the costs associated with the CAT. Accordingly, CAT Fees would not be affected by increases or decreases in other non-CAT expenses incurred by the SROs, such as any changes in costs related to the retirement of existing regulatory systems, such as OATS.

and the Company.<sup>50</sup> To the extent that the Operating Committee approves changes to the number of tiers in the funding model or the fees assigned to each tier, then the Exchange will file such changes with the SEC pursuant to Section 19(b) of the Exchange Act, and any such changes will become effective in accordance with the requirements of Section 19(b).

### **(I) Initial and Periodic Tier Reassignments**

The Operating Committee has determined to calculate fee tiers every three months based on market share or message traffic, as applicable, from the prior three months. For the initial tier assignments, the Company will calculate the relevant tier for each CAT Reporter using the three months of data prior to the commencement date. As with the initial tier assignment, for the tri-monthly reassignments, the Company will calculate the relevant tier using the three months of data prior to the relevant tri-monthly date. The Exchange notes that any movement of CAT Reporters between tiers will not change the criteria for each tier or the fee amount corresponding to each tier.

In performing the tri-monthly reassignments, the Exchange notes that the percentage of CAT Reporters in each assigned tier is relative. Therefore, a CAT Reporter's assigned tier will depend, not only on its own message traffic or market share, but it also will depend on the message traffic/market share across all CAT Reporters. For example, the percentage of Industry Members (other than Execution Venue ATSS) in each tier is relative such that such Industry Member's assigned tier will depend on message traffic generated across all CAT Reporters as well as the total number of CAT Reporters. The Operating Committee will inform CAT Reporters of their assigned tier every three months following the periodic tiering process, as the

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<sup>50</sup> Section B.7, Appendix C of the CAT NMS Plan, Approval Order at 85006.

funding model will compare an individual CAT Reporter’s activity to that of other CAT Reporters in the marketplace.

The following demonstrates a tier reassignment. In accordance with the funding model, the top 75% of Options Execution Venues in market share are categorized as Tier 1 while the bottom 25% of Options Execution Venues in market share are categorized as Tier 2. In the sample scenario below, Options Execution Venue L is initially categorized as a Tier 2 Options Execution Venue in Period A due to its market share. When market share is recalculated for Period B, the market share of Execution Venue L increases, and it is therefore subsequently reranked and reassigned to Tier 1 in Period B. Correspondingly, Options Execution Venue K, initially a Tier 1 Options Execution Venue in Period A, is reassigned to Tier 2 in Period B due to decreases in its market share of share volume.

Period A			Period B		
Options Execution Venue	Market Share Rank	Tier	Options Execution Venue	Market Share Rank	Tier
Options Execution Venue A	1	1	Options Execution Venue A	1	1
Options Execution Venue B	2	1	Options Execution Venue B	2	1
Options Execution Venue C	3	1	Options Execution Venue C	3	1
Options Execution Venue D	4	1	Options Execution Venue D	4	1
Options Execution Venue E	5	1	Options Execution Venue E	5	1
Options Execution Venue F	6	1	Options Execution Venue F	6	1
Options Execution Venue G	7	1	Options Execution Venue I	7	1
Options Execution Venue H	8	1	Options Execution Venue H	8	1
Options Execution Venue I	9	1	Options Execution Venue G	9	1

<b>Options Execution Venue J</b>	10	1	<b>Options Execution Venue J</b>	10	1
<b>Options Execution Venue K</b>	11	1	<b>Options Execution Venue L</b>	11	1
<b>Options Execution Venue L</b>	12	2	<b>Options Execution Venue K</b>	12	2
<b>Options Execution Venue M</b>	13	2	<b>Options Execution Venue N</b>	13	2
<b>Options Execution Venue N</b>	14	2	<b>Options Execution Venue M</b>	14	2
<b>Options Execution Venue O</b>	15	2	<b>Options Execution Venue O</b>	15	2

### (3) Proposed CAT Fee Schedule

The Exchange proposes the Consolidated Audit Trail Funding Fees to implement the CAT Fees determined by the Operating Committee on the Exchange’s Industry Members. The proposed fee schedule under Section R of the CHX Fee Schedule has three sections, covering definitions, the fee schedule for CAT Fees, and the timing and manner of payments. Each of these sections is discussed in detail below.

#### (A) Definitions

Paragraph (a) of the proposed fee schedule sets forth the definitions for the proposed fee schedule. Paragraph (a)(1) states that, for purposes of the Consolidated Audit Trail Funding Fees, the terms “CAT NMS Plan,” “Industry Member,” “NMS Stock,” “OTC Equity Security”, and “Plan Participant” are defined as set forth under Article 23, Rule 1 (Consolidated Audit Trail – Definitions) of the CHX Rules.

The proposed fee schedule imposes different fees on Equity ATSS and Industry Members that are not Equity ATSS. Accordingly, the proposed fee schedule defines the term “Equity ATS.” First, paragraph (a)(2) defines an “ATS” to mean an alternative trading system as defined in Rule 300(a) of Regulation ATS under the Securities Exchange Act of 1934, as amended, that operates pursuant to Rule 301 of Regulation ATS. This is the same definition of an ATS as set

forth in Section 1.1 of the CAT NMS Plan in the definition of an “Execution Venue.” Then, paragraph (a)(4) defines an “Equity ATS” as an ATS that executes transactions in NMS Stocks and/or OTC Equity Securities.

Paragraph (a)(3) of the proposed fee schedule defines the term “CAT Fee” to mean the Consolidated Audit Trail Funding Fee(s) to be paid by Industry Members as set forth in paragraph (b) in the proposed fee schedule.

Finally, paragraph (a)(6) defines an “Execution Venue” as a Plan Participant or an ATS (excluding any such ATS that does not execute orders). This definition is the same substantive definition as set forth in Section 1.1 of the CAT NMS Plan. Paragraph (a)(5) defines an “Equity Execution Venue” as an Execution Venue that trades NMS Stocks and/or OTC Equity Securities.

#### **(B) Fee Schedule**

The Exchange proposes to impose the CAT Fees applicable to its Industry Members through paragraph (b) of the proposed fee schedule. Paragraph (b)(1) of the proposed fee schedule sets forth the CAT Fees applicable to Industry Members other than Equity ATSs. Specifically, paragraph (b)(1) states that the Company will assign each Industry Member (other than an Equity ATS) to a fee tier once every quarter, where such tier assignment is calculated by ranking each Industry Member based on its total message traffic for the three months prior to the quarterly tier calculation day and assigning each Industry Member to a tier based on that ranking and predefined Industry Member percentages. The Industry Members with the highest total quarterly message traffic will be ranked in Tier 1, and the Industry Members with lowest quarterly message traffic will be ranked in Tier 9. Each quarter, each Industry Member (other than an Equity ATS) shall pay the following CAT Fee corresponding to the tier assigned by the Company for such Industry Member for that quarter:



<b>Tier</b>	<b>Percentage of Industry Members</b>	<b>Quarterly CAT Fee</b>
1	0.500%	\$101,004
2	2.500%	\$81,153
3	2.125%	\$57,717
4	4.625%	\$19,965
5	3.625%	\$12,489
6	4.000%	\$7,680
7	17.500%	\$1,503
8	20.125%	\$435
9	45.000%	\$66

Paragraph (b)(2) of the proposed fee schedule sets forth the CAT Fees applicable to Equity ATSs.<sup>51</sup> These are the same fees that Plan Participants that trade NMS Stocks and/or OTC Equity Securities will pay. Specifically, paragraph (b)(2) states that the Company will assign each Equity ATS to a fee tier once every quarter, where such tier assignment is calculated by ranking each Equity Execution Venue based on its total market share of NMS Stocks and OTC Equity Securities for the three months prior to the quarterly tier calculation day and assigning each Equity Execution Venue to a tier based on that ranking and predefined Equity Execution Venue percentages. The Equity Execution Venues with the higher total quarterly market share will be ranked in Tier 1, and the Equity Execution Venues with the lower quarterly market share will be ranked in Tier 2. Specifically, paragraph (b)(2) states that, each quarter, each Equity ATS shall pay the following CAT Fee corresponding to the tier assigned by the Company for such Equity ATS for that quarter:

<b>Tier</b>	<b>Percentage of Equity Execution Venues</b>	<b>Quarterly CAT Fee</b>
1	25.00%	\$63,375
2	75.00%	\$38,820

**(C) Timing and Manner of Payment**

<sup>51</sup> Note that no fee schedule is provided for Execution Venue ATSs that execute transactions in Listed Options, as no such Execution Venue ATSs currently exist due trading restrictions related to Listed Options.

Section 11.4 of the CAT NMS Plan states that the Operating Committee shall establish a system for the collection of fees authorized under the CAT NMS Plan. The Operating Committee may include such collection responsibility as a function of the Plan Processor or another administrator. To implement the payment process to be adopted by the Operating Committee, paragraph (c)(1) of the proposed fee schedule states that the Company will provide each Industry Member with one invoice each quarter for its CAT Fees as determined pursuant to paragraph (b) of the proposed fee schedule, regardless of whether the Industry Member is a member of multiple self-regulatory organizations. Paragraph (c)(1) further states that each Industry Member will pay its CAT Fees to the Company via the centralized system for the collection of CAT Fees established by the Company in the manner prescribed by the Company. The Exchange will provide Industry Members with details regarding the manner of payment of CAT Fees by Information Memorandum.

Although the exact fee collection system and processes for CAT fees has not yet been established, all CAT fees will be billed and collected centrally through the Company, via the Plan Processor or otherwise. Although each Plan Participant will adopt its own fee schedule regarding CAT Fees, no CAT Fees or portion thereof will be collected by the individual Plan Participants. Each Industry Member will receive from the Company one invoice for its applicable CAT fees, not separate invoices from each Plan Participant of which it is a member. The Industry Members will pay the CAT Fees to the Company via the centralized system for the collection of CAT fees established by the Company.<sup>52</sup>

Section 11.4 of the CAT NMS Plan also states that Plan Participants shall require each Industry Member to pay all applicable authorized CAT Fees within thirty days after receipt of an

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<sup>52</sup> Section 11.4 of the CAT NMS Plan.

invoice or other notice indicating payment is due (unless a longer payment period is otherwise indicated). Section 11.4 further states that, if an Industry Member fails to pay any such fee when due, such Industry Member shall pay interest on the outstanding balance from such due date until such fee is paid at a per annum rate equal to the lesser of: (i) the Prime Rate plus 300 basis points; or (ii) the maximum rate permitted by applicable law. Therefore, in accordance with Section 11.4 of the CAT NMS Plan, the Exchange proposed to adopt paragraph (c)(2) of the proposed fee schedule. Paragraph (c)(2) of the proposed fee schedule states that each Industry Member shall pay CAT Fees within thirty days after receipt of an invoice or other notice indicating payment is due (unless a longer payment period is otherwise indicated). If an Industry Member fails to pay any such fee when due, such Industry Member shall pay interest on the outstanding balance from such due date until such fee is paid at a per annum rate equal to the lesser of: (i) the Prime Rate plus 300 basis points; or (ii) the maximum rate permitted by applicable law.

## 2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the provisions of Section 6(b)(5) of the Act<sup>53</sup>, which require, among other things, that rules of the exchange must be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, and, in general, to protect investors and the public interest, and not designed to permit unfair discrimination between customers, issuers, brokers and dealer [sic], and Section 6(b)(4) of the Act<sup>54</sup>, which requires that the rules of the exchange provide for the equitable allocation of reasonable dues, fees, and other charges among members and issuers and other persons using its facilities. As discussed above, the SEC approved the bifurcated, tiered,

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<sup>53</sup> 15 U.S.C. 78f(b)(5).

<sup>54</sup> 15 U.S.C. 78f(b)(4).

fixed fee funding model in the CAT NMS Plan, finding it was reasonable and that it equitably allocated fees among Plan Participants and Industry Members. The Exchange believes that the proposed tiered fees adopted pursuant to the funding model approved by the SEC in the CAT NMS Plan are reasonable, equitably allocated and not unfairly discriminatory.

The Exchange believes that this proposal is consistent with the Act because it implements, interprets or clarifies the provisions of the Plan, and is designed to assist the Exchange and its Industry Members in meeting regulatory obligations pursuant to the Plan. In approving the Plan, the SEC noted that the Plan “is necessary and 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 mechanism of a national market system, or is otherwise in furtherance of the purposes of the Act.”<sup>55</sup> To the extent that this proposal implements, interprets or clarifies the Plan and applies specific requirements to Industry Members, the Exchange believes that this proposal furthers the objectives of the Plan, as identified by the SEC, and is therefore consistent with the Act.

The Exchange believes that the proposed tiered fees are reasonable. First, the total CAT Fees to be collected would be directly associated with the costs of establishing and maintaining the CAT, where such costs include Plan Processor costs and costs related to insurance, third party services and the operational reserve. The CAT Fees would not cover Plan Participant services unrelated to the CAT. In addition, any surplus CAT Fees cannot be distributed to the individual Plan Participants; such surpluses must be used as a reserve to offset future fees. Given the direct relationship between the fees and the CAT costs, the Exchange believes that the total level of the CAT Fees is reasonable.

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<sup>55</sup> Approval Order at 84697.

In addition, the Exchange believes that the proposed CAT Fees are reasonably designed to allocate the total costs of the CAT equitably between and among the Plan Participants and Industry Members, and are therefore not unfairly discriminatory. As discussed in detail above, the proposed tiered fees impose comparable fees on similarly situated CAT Reporters. For example, those with a larger impact on the CAT (measured via message traffic or market share) pay higher fees, whereas CAT Reporters with a smaller impact pay lower fees. Correspondingly, the tiered structure lessens the impact on smaller CAT Reporters by imposing smaller fees on those CAT Reporters with less market share or message traffic. In addition, the funding model takes into consideration affiliations between CAT Reporters, imposing comparable fees on such affiliated entities.

Moreover, the Exchange believes that the division of the total CAT costs between Industry Members and Execution Venues, and the division of the Execution Venue portion of total costs between Equity and Options Execution Venues, is reasonably designed to allocate CAT costs among CAT Reporters. The 75/25 division between Industry Members and Execution Venues maintains the greatest level of comparability across the funding model, keeping in view that comparability should consider affiliations among or between CAT Reporters (e.g., firms with multiple Industry Members or exchange licenses). Similarly, the 75/25 division between Equity and Options Execution Venues maintains elasticity across the funding model as well as the greatest level of fee equitability and comparability based on the current number of Equity and Options Execution Venues.

Finally, the Exchange believes that the proposed fees are reasonable because they would provide ease of calculation, ease of billing and other administrative functions, and predictability of a fixed fee. Such factors are crucial to estimating a reliable revenue stream for the Company

and for permitting CAT Reporters to reasonably predict their payment obligations for budgeting purposes.

B. Self-Regulatory Organization's Statement of Burden on Competition

Section 6(b)(8) of the Act<sup>56</sup> require [sic] that the rules of the Exchange not impose any burden on competition that is not necessary or appropriate. The Exchange does not believe that the proposed rule change will result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange notes that the proposed rule change implements provisions of the CAT NMS Plan approved by the Commission, and is designed to assist the Exchange in meeting its regulatory obligations pursuant to the Plan. Similarly, all national securities exchanges and FINRA are proposing this proposed fee schedule to implement the requirements of the CAT NMS Plan. Therefore, this is not a competitive fee filing and, therefore, it does not raise competition issues between and among the exchanges and FINRA.

Moreover, as previously described, the Exchange believes that the proposed rule change fairly and equitably allocates costs among CAT Reporters. In particular, the proposed fee schedule is structured to impose comparable fees on similarly situated CAT Reporters, and lessen the impact on smaller CAT Reporters. CAT Reporters with similar levels of CAT activity will pay similar fees. For example, Industry Members (other than Execution Venue ATSS) with higher levels of message traffic will pay higher fees, and those with lower levels of message traffic will pay lower fees. Similarly, Execution Venue ATSS and other Execution Venues with larger market share will pay higher fees, and those with lower levels of market share will pay lower fees. Therefore, given that there is generally a relationship between message traffic and

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<sup>56</sup> 15 U.S.C. 78f(b)(8)

market share to the CAT Reporter's size, smaller CAT Reporters generally pay less than larger CAT Reporters. Accordingly, the Exchange does not believe that the CAT Fees would have a disproportionate effect on smaller or larger CAT Reporters. In addition, ATSS and exchanges will pay the same fees based on market share. Therefore, the Exchange does not believe that the fees will impose any burden on the competition between ATSS and exchanges. Accordingly, the Exchange believes that the proposed fees will minimize the potential for adverse effects on competition between CAT Reporters in the market.

Furthermore, the tiered, fixed fee funding model limits the disincentives to providing liquidity to the market. Therefore, the proposed fees are structured to limit burdens on competitive quoting and other liquidity provision in the market.

C. Self-Regulatory Organization's Statement on Comments Regarding the Proposed Rule Changes Received from Members, Participants or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Changes and Timing for Commission Action

The foregoing rule change is effective upon filing pursuant to Section 19(b)(3)(A)(ii) of the Act<sup>57</sup> and subparagraph(f)(2) of Rule 19b-4 thereunder<sup>58</sup> because it establishes or changes a due, fee or other charge imposed by the Exchange.

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the

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<sup>57</sup> 15 U.S.C. 78s(b)(3)(A)(ii).

<sup>58</sup> 17 CFR 240.19b-4(f)(2).

Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

#### IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

##### Electronic Comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an e-mail to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File Number SR-CHX-2017-08 on the subject line.

##### Paper Comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-CHX-2017-08. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m.



and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-CHX-2017-08, and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>59</sup>

Eduardo A. Aleman  
Assistant Secretary

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<sup>59</sup> 17 CFR 200.30-3(a)(12).