

September 2, 2016

Brent J. Fields
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: File Number 4-698
Notice of Filing of the National Market System Plan Governing the Consolidated Audit Trail

Dear Mr. Fields:

On April 27, 2016, the Securities and Exchange Commission (“SEC” or “Commission”) published the notice of the National Market System Plan Governing the Consolidated Audit Trail (“Plan”) for public comment. The SEC received 23 comment letters in response to the proposed Plan. The parties to the Plan – 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, Chicago Stock Exchange, Inc., Financial Industry Regulatory Authority, Inc., International Securities Exchange, LLC, Investors’ Exchange LLC, ISE Gemini, LLC, ISE Mercury, LLC, Miami International Securities Exchange LLC, NASDAQ BX, Inc., NASDAQ PHLX LLC, The NASDAQ Stock Market LLC, National Stock Exchange, Inc., New York Stock Exchange LLC, NYSE MKT LLC, and NYSE Arca, Inc. (collectively, the “Participants”) are submitting this letter as a partial response to the issues raised in these letters. The Participants will submit a second letter to respond to certain additional issues raised with regard to the Plan, including retirement of systems, financial matters, symbology, Legal Entity Identifiers and clock synchronization. The Participants’ responses to certain comments are set forth in detail in the Appendix. The Participants note that these responses represent the consensus of the Participants, but that all Participants may not fully agree with each response set forth in the Appendix.

Respectfully submitted,

[Signature Pages Follow]

Enclosures

cc: The Hon. Mary Jo White, Chair
The Hon. Kara M. Stein, Commissioner
The Hon. Michael S. Piwowar, Commissioner
Mr. Stephen I. Luparello, Director, Division of Trading and Markets
Mr. Gary L. Goldsholle, Deputy Director, Division of Trading and Markets
Mr. David S. Shillman, Associate Director, Division of Trading and Markets

BATS EXCHANGE, INC.

By: Tamara Schademann

Name: Tamara Schademann

Title: EVP, CRO

BATS Y-EXCHANGE, INC.

By: Tamara Schademann

Name: Tamara Schademann

Title: EVP, CRO

EDGA EXCHANGE, INC.

By: Tamara Schademann

Name: Tamara Schademann

Title: EVP, CRO

EDGX EXCHANGE, INC.

By: Tamara Schademann

Name: Tamara Schademann

Title: EVP, CRO

BOX Options Exchange LLC

By: *Bruce A. Goodhue*

Name: *Bruce Goodhue*

Title: *Chief Regulatory Officer*

Date: *9/1/2016*

ADDRESS FOR NOTICES:

101 Arch Street, Suite 610

Boston, MA 02110

Facsimile: _____

Attention: _____

C2 OPTIONS EXCHANGE, INCORPORATED

By: 

Name: Greg Hoogasian

Title: Senior Vice President & Chief Regulatory Officer

CHICAGO BOARD OPTIONS EXCHANGE, INCORPORATED

By: 

Name: Greg Hoogasian

Title: Senior Vice President & Chief Regulatory Officer

CHICAGO STOCK EXCHANGE, INC.

By:



Name:

Albert J. Kim

Title:

VP and Associate General Counsel



FINANCIAL INDUSTRY REGULATORY AUTHORITY, INC.

By: Marcia E. Asquith

Name: Marcia E. Asquith

Title: Senior Vice President & Corporate Secretary

IEX Group, Inc.

By: 

Name: John Schwall

Title: COO

Date: 9/1/2016

ADDRESS FOR NOTICES:

IEX Group, Inc.

4 WTC, 44th Floor
New York, NY 10007

Facsimile:

Attention: John Ramsay

INTERNATIONAL SECURITIES EXCHANGE, LLC

By: Edward S. Knight

Name: Edward S. Knight

Title: EVP and General Counsel

ISE GEMINI, LLC

By: Edward S. Knight

Name: Edward S. Knight

Title: EVP and General Counsel

ISE MERCURY, LLC

By: Edward S. Knight

Name: Edward S. Knight

Title: EVP and General Counsel

MIAMI INTERNATIONAL SECURITIES EXCHANGE LLC

By: Edm Deitzel

Name: Edward Deitzel

Title: EVP, CRO

THE NASDAQ STOCK MARKET LLC

By: Edward S. Knight
Name: Edward S. Knight
Title: EVP and General Counsel

NASDAQ OMX BX, INC.

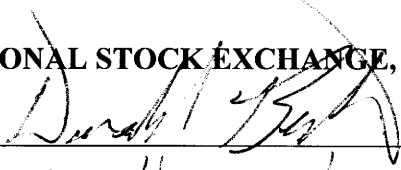
By: Edward S. Knight
Name: Edward S. Knight
Title: EVP and General Counsel

NASDAQ OMX PHLX LLC

By: Edward S. Knight
Name: Edward S. Knight
Title: EVP and General Counsel

NATIONAL STOCK EXCHANGE, INC.

By: _____



Name: _____

Donald Bernotas

Title: _____

CAO

NYSE ARCA, INC.

By: 

Name: Elizabeth K. King

Title: Vice President, General Counsel, Secretary

NEW YORK STOCK EXCHANGE LLC

By: 

Name: Elizabeth K. King

Title: Vice President, General Counsel, Secretary

NYSE MKT LLC

By: 

Name: Elizabeth K. King

Title: Vice President, General Counsel, Secretary

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I. GOVERNANCE AND OVERSIGHT

A. Operating Committee

1. Broker-Dealer Representation

Four commenters recommend that the Operating Committee¹ include representatives of broker-dealers and other non-Participants, and that those non-Participant representatives should have full voting power on the Operating Committee.² Specifically, one commenter recommends that such non-Participants include registered funds,³ whereas another commenter recommends that such non-Participants should include an institutional investor, a broker-dealer with a substantial retail base, a broker-dealer with a substantial institutional base, a data management expert and an expert from a federal agency experienced with cybersecurity concerns.⁴

As a preliminary matter, the Participants believe that the composition of the Operating Committee as set forth in the Plan is consistent with Rule 613 of Regulation NMS under the Securities Exchange Act of 1934 (“Exchange Act”) (“SEC Rule 613”). Moreover, the Participants believe that expanding the composition of the Operating Committee to include broker-dealers and other non-Participants raises serious policy concerns. For example, the Participants have the statutory obligation under the Exchange Act to regulate the securities markets,⁵ and have the responsibility for creating, implementing and maintaining the consolidated audit trail (“CAT”) under SEC Rule 613, whereas broker-dealers and other non-Participants do not have a statutory obligation to oversee the markets or to implement the CAT.⁶

The proposal to include broker-dealers on the Operating Committee raises an additional issue. The primary purpose of the CAT is to enhance the Participants’ and the SEC’s ability to surveil the securities markets. As a practical matter, the broker-dealers are significant market participants that are the subject of such surveillance. Accordingly, the Participants have concerns about the conflicts of interest raised by having the subjects of surveillance involved in decision-making of a plan that, at its core, has SEC and self-regulatory organization (“SRO”) regulatory surveillance as its primary objective. Such a role could provide broker-dealers with the opportunity, directly or indirectly, to inappropriately dictate or limit certain surveillance efforts, or to learn details about certain regulatory efforts, that compromises the Participants’ and the SEC’s regulatory oversight of the markets.

¹ Capitalized terms are defined as set forth in the Plan unless otherwise indicated.

² Letter from Theodore R. Lazo, and Ellen Greene, Securities Industry and Financial Markets Association, to Brent J. Fields, SEC (July 18, 2016) (“SIFMA Letter”) at 2, 24-26; Letter from David W. Blass, Investment Company Institute, to Brent J. Fields, SEC (July 18, 2016) (“ICI Letter”) at 10-11; Letter from Stuart J. Kaswell, Managed Funds Association, to Brent J. Fields, SEC (July 18, 2016) (“MFA Letter”) at 3-4; Letter from John A. McCarthy, KCG Holdings, Inc. to Brent J. Fields, SEC (July 20, 2016) (“KCG Letter”) at 5-7.

³ ICI Letter at 11.

⁴ MFA Letter 3-4.

⁵ See Section 6 of the Exchange Act.

⁶ See, e.g., Securities Exchange Act Rel. No. 67457 (July 18, 2012), 77 Fed. Reg. 45722 (Aug. 1, 2012) (“Rule 613 Adopting Release”) at 45785.

Finally, the Participants believe that the Advisory Committee will provide an appropriate and meaningful forum for non-Participants to provide their views and recommendations to the Operating Committee. Specifically, the members of the Advisory Committee include broker-dealers of various sizes and businesses, institutional investors, a member of academia with relevant securities experience, an individual who maintains a securities account and an individual with regulatory expertise.⁷ Accordingly, the Participants do not plan to expand the composition of the Operating Committee beyond Participants at this time.

2. Independent Directors

One commenter recommends that the CAT governance structure include independent directors.⁸ The Participants do not plan to include independent directors on the Operating Committee for several reasons. As discussed in response to Section A.1 above, the Participants believe that the composition of the Operating Committee as set forth in the Plan is consistent with SEC Rule 613, and, unlike non-Participants, the Participants have the statutory obligation under the Exchange Act to regulate the securities markets and oversee the CAT. Furthermore, the Participants note that Participants generally have independent representation on their own governing boards,⁹ and, therefore, each Participant's input regarding the CAT should reflect independent views.

3. Allocation of Voting Rights

One commenter recommends revisiting the allocation of voting rights among Participants, as set forth in the Equity Market Structure Advisory Committee ("EMSAC") recommendations.¹⁰ Each Participant has one vote on the Operating Committee to permit equal representation among all the Participants.¹¹ Because each Participant has obligations with regard to the CAT under SEC Rule 613, the Participants continue to believe that one vote per Participant is appropriate. In addition, this voting approach is common among national market system ("NMS") plans.¹²

4. Unanimous Votes

One commenter recommends limiting Plan provisions that require a unanimous vote, as set forth in the EMSAC recommendations.¹³ The Participants have significantly limited their use

⁷ Plan, Section 4.13(b).

⁸ Letter from Industry Members, including FIF, SIFMA, and STA of the Development Advisory Group, to Brent J. Fields, SEC (July 20, 2016) ("DAG Letter") at 3. *See also* Letter from John Russell and James Toes, Security Traders Association, to Brent J. Fields, SEC (July 25, 2016) ("STA Letter") at 2.

⁹ *See, e.g.*, BATS BYX Exchange, Inc. Bylaws, Art. III, Section 2(b)(i); New York Stock Exchange LLC Operating Agreement, Section 2.03.

¹⁰ Letter from Marc R. Bryant, Fidelity Investments, to Brent J. Fields, SEC (July 18, 2016) ("Fidelity Letter") at 7.

¹¹ Plan, Section 4.3(a).

¹² *See, e.g.*, Plan Governing the Collection, Consolidation and Dissemination of Quotation and Transaction Information for Nasdaq-Listed Securities Traded on Exchanges on an Unlisted Trading Privilege Basis, Section IV(C) ("UTP Plan"); Plan to Address Extraordinary Market Volatility, Section III(C)(1).

¹³ Fidelity Letter at 7.

of unanimous votes in the Plan.¹⁴ A unanimous vote of all Participants is required in only three circumstances. First, a decision to obligate Participants to make a loan or capital contribution to the CAT NMS LLC (“CAT LLC”) requires a unanimous vote.¹⁵ Requiring Participants to provide additional financing to the CAT LLC is an event that imposes an additional and direct financial burden on each Participant. Thus, it is important that each Participant’s approval is obtained. Second, a decision by the Participants to dissolve the CAT LLC requires unanimity.¹⁶ The dissolution of the Company is an extraordinary event that would have a direct impact on each Participant’s ability to meet its regulatory and compliance requirements so it is critical that each Participant consent to this decision. Third, a unanimous vote is required if Participants decide to take an action by written consent in lieu of a meeting.¹⁷ This approach is consistent with the unanimous written consent requirement under Delaware law for decisions made by written consent of the directors of a corporation in lieu of a meeting to ensure that all directors have knowledge of, and consider, all actions taken. Such limited use of the unanimous vote differs from the more frequent use in certain other NMS plans.¹⁸ The Participants continue to believe that the use of a unanimous vote in each of these extraordinary circumstances is appropriate.

B. Audit Committee

Two commenters recommend that the CAT governance structure include an audit committee comprised mostly of independent directors.¹⁹ The Participants have not included an explicit requirement for an audit committee in the Plan, and do not believe that such a requirement is required under SEC Rule 613, or is otherwise necessary at this time. The Participants believe that the members of the Operating Committee will have the ability to review CAT-related issues objectively and impartially for various reasons, including, for example, the fact that the members of the Operating Committee are not employed by the CAT LLC and are fulfilling mandated regulatory oversight responsibilities, and that the CAT LLC will not operate as a profit-making company, which may need more scrutiny as compared to a company that is operating on a break-even basis.

In addition, the Participants note that the Plan currently requires the creation of a Compliance Subcommittee to aid the Chief Compliance Officer (“CCO”) with respect to issues involving: (1) the confidentiality of information submitted to the CAT; (2) the timeliness, accuracy and completeness of information submitted to the CAT; and (3) the manner in and the extent to which each Participant is meeting its obligations under SEC Rule 613 and the Plan, and ensuring the consistency of the Plan’s enforcement as to all Participants.²⁰ The Participants also

¹⁴ The limited use of unanimous votes is in keeping with SEC statements that the Participants should consider the possibility of governance requirements other than unanimity for all but the most important decisions. Rule 613 Adopting Release at 45787.

¹⁵ Plan, Section 3.8(a).

¹⁶ Plan, Section 10.1.

¹⁷ Plan, Section 4.11.

¹⁸ See, e.g., UTP Plan, Section IV(C)(1); Consolidate Quotation System Plan, Sections VIII(b) and IX(b)(iii).

¹⁹ DAG Letter at 3; SIFMA Letter at 29. See also STA Letter at 1.

²⁰ Plan, Section 4.12(b).

note that the Plan provides for the creation of additional subcommittees as necessary or desirable.²¹

Nevertheless, the Operating Committee could decide whether an Audit Committee may be appropriate in the future, for instance, after the implementation and operation of the CAT.

C. Advisory Committee

1. Composition of Advisory Committee

Five commenters make recommendations regarding the composition of the Advisory Committee.²² Specifically, recommendations are made: (1) to add two financial economists with expertise in both econometrics and the economics of the primary market and market microstructure;²³ (2) to include a service bureau representative;²⁴ (3) to include more investor representation, including representation from registered funds;²⁵ (4) to include one or more industry trade groups to ensure an appropriate representation of firms across all sizes and business models (*e.g.*, inter-dealer brokers, agency brokers, retail brokers, institutional brokers, proprietary trading firms, small broker-dealers and firms with a floor presence);²⁶ and (5) to expand the number of members of the Advisory Committee from 12 to 20, where the expanded membership would include industry associations, trade processing and order management service bureaus, and a minimum of 12 broker-dealer firms representing a broad cross section of different types of firms within the industry.²⁷

The Participants agree with the recommendation to include a service bureau representative on the Advisory Committee. Because service bureaus perform audit trail reporting on behalf of their customers, the Participants believe that a service bureau representative would provide a valuable perspective on how the CAT and any enhancements thereto would affect the service bureau clients, which often include a number of small and medium-sized firms. Moreover, vendors have proven to be useful additions to the advisory committees for other NMS plans.²⁸ Accordingly, the Participants propose to amend Section 4.13 to require the Advisory Committee to include a service bureau representative.

²¹ Plan, Section 4.12(a).

²² ICI Letter at 12; SIFMA Letter at 27; Letter from Manisha Kimmel, Thomson Reuters, to Brent J. Fields, SEC (July 18, 2016) (“Thomson Reuters Letter”) at 7; Letter from Kathleen Weiss Hanley, et al., to Brent J. Fields, SEC (July 12, 2016) (“Hanley Letter”) at 6; Letter from Mary Lou Von Kaenel, Financial Information Forum, to Brent J. Fields, SEC (July 18, 2016) (“FIF Letter”) at 135-136.

²³ Hanley Letter at 6.

²⁴ Thomson Reuters Letter at 7.

²⁵ ICI Letter at 12.

²⁶ SIFMA Letter at 27.

²⁷ FIF Letter at 135-136.

²⁸ For example, the CTA Advisory Committee has a vendor representative. *See* CTA Advisory Committee, Consolidated Tape Association, <https://www.ctaplan.com/advisory-committee>.

In response to the commenters that recommend enhancing institutional investor representation on the Advisory Committee, the Participants propose to amend Section 4.13 to increase the number of institutional investors from two to three and to require that one such institutional investor represent registered funds. Specifically, the Participants propose to amend Section 4.13 to require the selection of two institutional investors, without requiring a specific type of institutional investor,²⁹ and require the selection of an individual trading on behalf of an investment company or group of investment companies registered pursuant to the Investment Company Act of 1940.

The Participants do not agree that the Plan should separately set forth a requirement to include financial economists on the Advisory Committee. The Participants believe that the general requirement to include an academic on the Advisory Committee appropriately provides the opportunity for an academic that is a financial economist to become a member of the Advisory Committee. Specifically, under the Plan, the Advisory Committee is required to include “a member of academia with expertise in the securities industry or any other industry relevant to the operation of the CAT System.”³⁰ The Participants note that such an academic could be a financial economist, provided such academic has the relevant expertise.

The Participants do not agree with the recommendation to include a representative of an industry trade group on the Advisory Committee. The Participants note that the Plan currently includes a variety of representatives from the members of such trade groups, including seven broker-dealer representatives and two institutional investors.³¹ The Participants believe that such representation would provide a meaningful opportunity for the representation of the views of industry trade groups. Accordingly, the Participants believe that an additional representative from such trade groups would not be necessary.

The Participants carefully considered whether to increase the number of broker-dealer representatives on the Advisory Committee, balancing the goal of having a sufficient cross section of representation with the goal of having a well-run committee. In that light, the Participants have determined not to implement the recommendation to expand the number of broker-dealer representatives on the Advisory Committee from seven to twelve. The Participants believe that the proposal to include seven broker-dealer representatives on the Advisory Committee provides the broker-dealer community with a significant opportunity to provide their views.³² The Plan would require representatives from small, medium and large broker-dealers,³³

²⁹ This change would also address one commenter’s request for clarification as to the meaning of the terms “public” entity and “private” entity in the description of the composition of the Advisory Committee. *See* ICI Letter at 12 (requesting clarification as to how these terms were used in the phrases an “[institutional investors trading] on behalf of a public entity or entities” and “[institutional investors trading] on behalf of a private entity or entities” in Section 4.13 of the Plan).

³⁰ Plan, Section 4.13(b)(ix).

³¹ Plan, Section 4.13(b)(i)-(vii) and (x)-(xi).

³² Plan, Section 4.13(b)(i)-(vii).

as well as broker-dealers with different business types, including broker-dealers with a substantial wholesale customer base, that effect transactions as a specialist, market maker or floor broker, that act as a proprietary-trading broker-dealer and that are clearing firms. In addition, the Participants believe that increasing the size of the Advisory Committee from 12 to 20 creates a committee structure that would likely hamper, rather than facilitate, discussion.

Accordingly, the Participants propose to amend Section 4.13 of the Plan as follows:

(a) No member of the Advisory Committee may be employed by or affiliated with any Participant or any of its Affiliates or facilities. The SEC's Chief Technology Officer (or the individual then currently employed in a comparable position providing equivalent services) shall serve as an observer of the Advisory Committee (but shall not be a member thereof). The Operating Committee shall select one (1) member to serve on the Advisory Committee from representatives of each category identified in Sections 4.13(b)(i) through 4.13(b)(xii) to serve on the Advisory Committee on behalf of himself or herself individually and not on behalf of the entity for which the individual is then currently employed; provided that the members so selected pursuant to Sections 4.13(b)(i) through 4.13(b)(xii) must include, in the aggregate, representatives of no fewer than three (3) broker-dealers that are active in the options business and representatives of no fewer than three (3) broker-dealers that are active in the equities business; and provided further that upon a change in employment of any such member so selected pursuant to Sections 4.13(b)(i) through 4.13(b)(xii) a Majority Vote of the Operating Committee shall be required for such member to be eligible to continue to serve on the Advisory Committee:

- (i) a broker-dealer with no more than 150 Registered Persons;
- (ii) a broker-dealer with at least 151 and no more than 499 Registered Persons;
- (iii) a broker-dealer with 500 or more Registered Persons;
- (iv) a broker-dealer with a substantial wholesale customer base;

³³ The SEC recommended that the Advisory Committee include representatives from small, medium and large-sized broker-dealers. Rule 613 Adopting Release at 45787.

(v) a broker-dealer that is approved by a national securities exchange (A) to effect transactions on an exchange as a specialist, market maker, or floor broker; or (B) to act as an institutional broker on an exchange;

(vi) a proprietary-trading broker-dealer;

(vii) a clearing firm;

(viii) an individual who maintains a securities account with a registered broker or dealer but who otherwise has no material business relationship with a broker or dealer or with a Participant;

(ix) a member of academia with expertise in the securities industry or any other industry relevant to the operation of the CAT System;

(x) [an] three institutional investors, including an individual trading on behalf of an investment company or group of investment companies registered pursuant to the Investment Company Act of 1940 [trading on behalf of a public entity or entities];

(xi) [an institutional investor trading on behalf of a private entity or entities; and]

[(xii)] an individual with significant and reputable regulatory expertise; and[.]

(xii) a service bureau that provides reporting services to one or more CAT Reporters.

(b) Four of the [twelve] fourteen initial members of the Advisory Committee, as determined by the Operating Committee, shall have an initial term of one (1) year. Four of the [twelve] fourteen initial members of the Advisory Committee, as determined by the Operating Committee, shall have an initial term of two (2) years. All other members of the Advisory Committee shall have a term of three (3) years. No member of the Advisory Committee may serve thereon for more than two consecutive terms.

[Additions underlined; deletions bracketed]

2. Role of the Advisory Committee

Four commenters recommend a more participatory, active role for non-Participants in the formulation of decisions regarding the operation of the CAT.³⁴ One such commenter recommends that the Plan expand and formalize the role of the Advisory Committee, including formal votes on matters before the Operating Committee and the ability to initiate its own recommendations.³⁵ One commenter opposes granting voting rights to Advisory Committee members with respect to CAT matters being decided by the Operating Committee.³⁶

In adopting SEC Rule 613, the SEC considered whether to give the broker-dealer industry “a seat at the table” regarding the governance of the Plan,³⁷ and the SEC concluded that it was permissible for the Plan to have a governance process that included an advisory committee with the “right to attend all meetings of the plan sponsors (with the exception of executive sessions), to receive information concerning the operation of the central repository, and to provide their view to the plan sponsors.”³⁸ The Participants believe that this structure provides the industry with an active role in governance while recognizing the Participants’ regulatory obligations with regard to the CAT. Therefore, because the Participants believe that the Plan provides the right balance between differing interests, the Participants do not propose to expand the Advisory Committee’s role beyond that set forth in the Plan.

3. Advisory Committee Selection

One commenter recommends that the members of the Advisory Committee be selected by broker-dealer representatives, not the Participants.³⁹ Another commenter requests clarification regarding the process for selecting Advisory Committee representatives.⁴⁰

The Participants continue to believe that the Operating Committee should have the responsibility for selecting the members of the Advisory Committee. Therefore, the Participants continue to support the proposed process for selecting the Advisory Committee members. Specifically, the process for selecting the Advisory Committee members is set forth in Section 4.3(a)(ii). It states that the Operating Committee will select the members of the Advisory Committee by majority vote.

The Participants, however, agree with the commenters that the Advisory Committee should be permitted to advise the Operating Committee regarding potential Advisory Committee members. Accordingly, the Participants propose to explicitly set forth this ability in Section

³⁴ FIF Letter at 136; SIFMA Letter at 27-28; Fidelity Letter at 6-9. *See also* STA Letter at 2.

³⁵ Fidelity Letter at 7.

³⁶ Letter from Elizabeth K. King, NYSE, to Brent J. Fields, SEC (July 21, 2016) (“NYSE Letter”) at 4-6.

³⁷ Rule 613 Adopting Release at 45786.

³⁸ Rule 613 Adopting Release at 45787. *See also* Plan, Section 4.13(d).

³⁹ SIFMA Letter at 27.

⁴⁰ Fidelity Letter at 7.

4.13(d) of the Plan. The Operating Committee, however, will continue to select the Advisory Committee members. Specifically, the Participants propose to amend Section 4.13(d) as follows:

(d) The Advisory Committee shall advise the Participants on the implementation, operation, and administration of the Central Repository, including possible expansion of the Central Repository to other securities and other types of transactions. Members of the Advisory Committee shall have the right to attend meetings of the Operating Committee or any Subcommittee, to receive information concerning the operation of the Central Repository (subject to Section 4.13(e)), and to submit their views to the Operating Committee or any Subcommittee on matters pursuant to this Agreement prior to a decision by the Operating Committee on such matters; provided that members of the Advisory Committee shall have no right to vote on any matter considered by the Operating Committee or any Subcommittee and that the Operating Committee or any Subcommittee may meet in Executive Session if, by Majority Vote, the Operating Committee or Subcommittee determines that such an Executive Session is advisable. The Advisory Committee may provide the Operating Committee with recommendations of one or more candidates for the Operating Committee to consider when selecting members of the Advisory Committee pursuant to Section 4.13(a)(ii); provided, however, that the Operating Committee, at its sole discretion, will select the members of the Advisory Committee pursuant to Section 4.13(a)(ii) from the candidates recommended to the Operating Committee by the Advisory Committee, the Operating Committee itself, Participants or other persons. The Operating Committee may solicit and consider views on the operation of the Central Repository in addition to those of the Advisory Committee.

[Additions underlined; deletions bracketed]

4. Executive Sessions

Two commenters recommend significantly narrowing the use of Executive Sessions by the Operating Committee.⁴¹ One such commenter recommends that, to prevent abuse of Executive Sessions, the Plan require the Participants to maintain specific written criteria that limit Executive Sessions only to situations in which there will be a specific discussion of confidential regulatory information, and to submit a written explanation for why the executive session is required.⁴²

In accordance with SEC Rule 613,⁴³ the Plan provides members of the Advisory Committee with the right to attend all meetings of the Operating Committee except for those

⁴¹ Fidelity Letter at 7; SIFMA Letter at 27. *See also* STA Letter at 2.

⁴² SIFMA Letter at 28.

⁴³ SEC Rule 613(b)(7)(ii).

meetings in which the Operating Committee, by majority vote, determines to meet in Executive Session.⁴⁴ The Participants continue to believe that it is appropriate for the Operating Committee to have the capability to meet in Executive Session, and the flexibility to determine when such Executive Sessions are appropriate. As the SEC explained when adopting the provision regarding Executive Sessions:

an Advisory Committee structure that also permits the plan sponsors to meet in executive session without members of the Advisory Committee appropriately balances the need to provide a mechanism for industry input into the operation of the central repository, against the regulatory imperative that the operations and decisions regarding the consolidated audit trail be made by SROs who have a statutory obligation to regulate the securities markets, rather than by members of the SROs, who have no corresponding statutory obligation to oversee the securities markets.⁴⁵

The Participants recognize the benefit and importance of the Advisory Committee and intend to use the Executive Session for limited purposes requiring confidentiality including, for example: (1) matters that present an actual or potential conflict of interest for Advisory Committee members (*e.g.*, relating to Industry Members' regulatory compliance); (2) discussion of actual or potential litigation; (3) CAT security issues; and (4) personnel issues. The Participants do not propose to define detailed specific criteria for meeting in Executive Session because the Participants believe a more flexible approach that permits the Participants to consider all factors that may relate to the CAT in determining when to conduct an Executive Session is appropriate. In addition, any determination of the Operating Committee to meet in an Executive Session will be made upon a Majority Vote, and the meeting minutes will record the general basis for the Executive Session, subject to confidentiality and attorney-client privilege considerations.

5. Treatment of Advisory Committee Requests and Recommendations

Two commenters provide recommendations regarding the treatment of Advisory Committee requests and recommendations to the Operating Committee.⁴⁶ One commenter recommends that the Operating Committee be required to address all Advisory Committee requests in writing, provide a rationale for not accepting a recommendation from the Advisory Committee, require majority votes to withhold documents from the Advisory Committee, provide the title of withheld documents and the rationale for withholding the documents and provide the Advisory Committee with the same reports as the CCO and the Chief Information Security Officer ("CISO") on security and confidentiality.⁴⁷ Another commenter recommends that the Plan require the Participants to document and provide the Advisory Committee with a written statement explaining the reasons for any rejection of a written recommendation submitted

⁴⁴ Plan, Section 4.13(d).

⁴⁵ Rule 613 Adopting Release at 45787.

⁴⁶ SIFMA Letter at 28; ICI Letter at 13.

⁴⁷ ICI Letter at 13.

by the Advisory Committee, and to provide the Advisory Committee with adequate time to analyze information and formulate views before meetings.⁴⁸

After considering the commenters' proposals regarding requests and recommendations from the Advisory Committee, the Participants determined to maintain the approach set forth in the Plan for several reasons. First, the Participants believe that, as a matter of good corporate governance, the Operating Committee should take into consideration the Advisory Committee's input regarding the CAT. Second, the Participants generally believe that the proposed structure adequately addresses the commenters' concerns, while recognizing the need for the Participants to have the opportunity to discuss certain matters, particularly certain regulatory and security issues, without the participation of the industry. Specifically, the Plan permits the Advisory Committee to attend all meetings of the Operating Committee (other than Executive Sessions)⁴⁹ and gives the Advisory Committee the right to receive information concerning the operation of the CAT (subject to the Operating Committee's authority to determine the scope and content of information supplied to the Advisory Committee).⁵⁰ Third, the Participants plan to provide minutes of the Operating Committee meetings to the Advisory Committee (with customary exceptions for confidentiality and other issues). Fourth, the Participants believe that the commenters' proposals would provide an overly formulaic approach to interactions with the Advisory Committee and that such an approach would hamper, rather than enhance, interactions with the Advisory Committee.

6. Timing of Formation of Advisory Committee

One commenter recommends the formation of the Advisory Committee prior to the approval of the Plan to permit the Advisory Committee to provide the Operating Committee advice regarding the selection of the Processor and the operating procedures for the CAT.⁵¹ The Participants do not intend to form the Advisory Committee prior to the approval of the Plan. As a practical matter, the Plan provides for the establishment of the Advisory Committee and the Operating Committee.⁵² Therefore, neither Committee can be formed until the Commission approves the Plan.

In addition, the Participants do not believe that the formation of the Advisory Committee prior to Plan approval is necessary as a policy matter. Currently, the Development Advisory Group ("DAG") provides the Participants advice regarding the development of the Plan from the industry perspective.⁵³ The Participants have discussed a variety of CAT-related issues with the DAG during the development of the Plan, and, as the DAG noted with approval, "in many instances, the Industry's feedback via the DAG was incorporated into the Plan."⁵⁴ The

⁴⁸ SIFMA Letter at 28.

⁴⁹ Plan, Section 4.13(d).

⁵⁰ Plan, Section 4.13(e).

⁵¹ DAG Letter at 3.

⁵² See Plan, Article IV and Section 4.13.

⁵³ See, e.g., SROs Announce Formation of CAT Development Advisory Group, Consolidated Audit Trail, <http://www.catnmsplan.com/pastevents/p211727.html>.

⁵⁴ DAG Letter at 1.

Participants intend to continue to engage with the DAG prior to the approval of the Plan. However, the Participants do not believe that it is appropriate (or permissible in light of constraints imposed by nondisclosure agreements) to consult with the DAG with respect to the relative merits of each Bidder's proposed solution.

D. CAT Administration

1. Coordinated Oversight Related to the CAT

One commenter recommends that the compliance oversight and enforcement of the Plan be coordinated, rather than performed individually by the many different Participants. Specifically, the commenter recommends that the Plan explicitly require that the Participants enter into an agreement to require a single Participant be responsible for enforcing broker-dealer compliance with SEC Rule 613 and the Plan, whether through SEC Rule 17d-2 agreements, regulatory services agreements or some other approach.⁵⁵ The Participants recognize the benefits of such coordinated oversight and plan to consider whether to enter into a Rule 17d-2 agreement or regulatory services agreements after approval of the Plan.

2. Financial Transparency

One commenter recommends that the CAT LLC's costs and financing be fully transparent, with publicly disclosed annual reports, audited financial statements and executive compensation disclosures.⁵⁶ The Participants note that, as discussed above, the Plan provides the Advisory Committee with the right to receive information concerning the operation of the CAT,⁵⁷ and the Participants plan to provide the Advisory Committee with the minutes of Operating Committee meetings (in both cases, subject to limitations related to, for example, confidentiality and Executive Sessions). In addition, the Advisory Committee and the public generally will receive financial information related to the CAT through CAT fee filings. The Participants intend to consider the scope of additional transparency after the Plan has been finalized.

E. CCO/CISO Responsibilities

One commenter argues that the proposal for the CCO and CISO to be officers of the CAT LLC as well as employees of the Plan Processor creates a conflict of interest that would undermine the ability of these officers to carry out effectively their responsibilities under the Plan because they would owe a fiduciary duty to the Plan Processor rather than the CAT LLC. Accordingly, the commenter recommends that the Plan should impose a fiduciary duty on the CCO and CISO, or, at a minimum, should require the Plan Processor to select individuals who do not have a fiduciary duty to the Plan Processor.⁵⁸

⁵⁵ SIFMA Letter at 29.

⁵⁶ SIFMA Letter at 29.

⁵⁷ Plan, Section 4.13(d)-(e).

⁵⁸ Letter from David T. Bellaire, Financial Services Institute, to Brent J. Fields, SEC (July 18, 2016) ("FSI Letter") at 3.

In drafting the Plan, the Participants determined to make the CCO and the CISO employees of the Plan Processor with fiduciary obligations to the Plan Processor, but not the CAT LLC. The Participants decided that the CAT LLC would not have any employees in order to mitigate the administrative and compliance burden of the CAT LLC. In addition, the Participants decided to eliminate all fiduciary and similar duties that the Participants, Operating Committee members and officers would have to the CAT LLC in order to allow each Participant to represent its best interest, which may conflict with the best interests of other Participants and/or the CAT LLC as a whole. The Plan includes specific duties and responsibilities of the CCO and CISO, and the Plan Processor will be required under the terms of the Plan and the Plan Processor agreement to ensure that the CCO and the CISO comply with those duties.⁵⁹

After considering the comments, however, the Participants agree that the CCO and the CISO, as officers of the CAT LLC, should have fiduciary duties to the CAT LLC in the same manner and extent as an officer of a Delaware corporation, and agree to require in the agreement with the Plan Processor that, to the extent those duties conflict with duties the CCO or CISO has to the Plan Processor, the duties to the CAT LLC should control. Accordingly, the Participants propose to amend Section 4.7(c) of the Plans as follows:

(c) no Participant[, Officer,] or member of the Operating Committee, in such Person's capacity as such, shall have any fiduciary or similar duties or obligations to the Company or any other Participant[, Officer,] or member of the Operating Committee, whether express or implied by the Delaware Act or any other law, in each case subject only to the implied contractual covenant of good faith and fair dealing, and each Participant[, Officer,] and the Company, to the fullest extent permitted by applicable law, waives any claim or cause of action against any Participant[, Officer,] or member of the Operating Committee that might otherwise arise in respect of any such fiduciary duty or similar duty or obligation; provided, however, that the provisions of this Section 4.7(c) shall have no effect on the terms of any relationship, agreement or arrangement between any member of the Operating Committee and the Participant appointing such member of the Operating Committee or between any Participant (other than solely in its capacity as a Participant) and the Company such as a contract between such Participant and the Company pursuant to which such Participant serves as the Plan Processor [or between an Officer and the Plan Processor]. Each Officer shall have the same fiduciary duties and obligations to the Company as a comparable officer of a Delaware corporation and in all cases shall conduct the business of the Company and execute his or her duties and obligations in good faith and in the

⁵⁹ Plan, Section 6.2.

manner that the Officer reasonably believes to be in the best interests of the Company;

In addition, the Participants will require the employment agreements that the CCO and the CISO execute with the Plan Processor to acknowledge the fiduciary duties of such officer to the CAT LLC.

F. Material Amendments

One commenter recommends distinguishing between an “External Material Amendment” and an “Internal Material Amendment” to the Technical Specifications and recommends addressing those amendments in different ways.⁶⁰ Specifically, the commenter recommends defining an “External Material Amendment” as any change that affects the CAT Reporter interface (*e.g.*, coding or configuration changes, changes to error definitions or error rate statistics, etc.), and defining an “Internal Material Amendment” as any change that does not affect the CAT Reporter interface (*i.e.*, a change that does not require CAT Reporter coding changes or configuration changes, or does not impact CAT Reporter error definitions or error rate statistics). With respect to any External Material Amendment, the commenter recommends that the Plan require: (1) the publication of an implementation plan with reasonable time for development and testing; (2) consulting the Advisory Committee to assess general impact of the amendment; and (3) the assessment be submitted to the Operating Committee for their consideration and to be made public. With respect to any Internal Material Amendments, the commenter recommended that the Plan require the Advisory Committee to review the proposed change to ensure that the change will not materially affect CAT Reporters or others submitting data to the CAT.

The Participants intend to solicit the perspectives of the Advisory Committee regarding Material Amendments to the Technical Specifications, and the Plan specifically sets forth a process for doing so. As set forth in the Plan, “[t]he Advisory Committee shall advise the Participants on the implementation, operation and administration of the Central Repository.”⁶¹ The Plan states that members of the Advisory Committee shall have the right to attend meetings of the Operating Committee (other than Executive Sessions) or any Subcommittee to receive information concerning the operation of the Central Repository, to submit their views to the Operating Committee or a Subcommittee on matters pursuant to the Plan prior to a decision by the Operating Committee on such matters.⁶² Furthermore, the Plan states that members of the Advisory Committee shall have the right to receive information concerning the operation of the Central Repository, subject to the Operating Committee’s authority to determine the scope and

⁶⁰ FIF Letter at 136-137.

⁶¹ Plan, Section 4.13(d).

⁶² Plan, Section 4.13(d).

content of such information provided.⁶³ The Participants continue to believe that this process is appropriate with regard to Material Amendments.

II. DATA REPORTING REQUIREMENTS

A. Clock Synchronization

Two commenters state that they generally support the clock synchronization standard described in the Plan.⁶⁴ Several commenters suggest that the Participants consider amending various aspects of the clock synchronization standard set forth in Section 6.8 of the Plan, as discussed further below.

1. Single Clock Synchronization Standard

Two commenters believe that there should be a single clock synchronization standard and that the Participants should use the same standard set forth in FINRA's recently adopted clock synchronization rule⁶⁵ in the Plan.⁶⁶ The Participants recognize the value of such consistency and note that the clock synchronization standards in the Plan for Industry Members (as described in Section 6.8(a)) and in FINRA's new clock synchronization rule are currently aligned.

2. Regulatory Requirements

One commenter believes that, since SEC Rule 613(a)(3)(ii) requires clock synchronization to be in effect within four months after the Effective Date of the Plan, the Plan should detail the regulatory requirements necessary for managing clock synchronization as soon as possible.⁶⁷ Another commenter recommends that clock synchronization need only be actively managed when capturing reportable events, and that logging should be required only for clock synchronization configuration changes, exceptions and alerts.⁶⁸

The Participants recognize that the synchronization of business clocks is among the first implementation milestones after the Plan becomes effective. Accordingly, the Plan states that compliance with the clock synchronization requirements will require Participants and Industry Members to perform the following or comparable procedures. The Participants and their Industry Members will document their clock synchronization procedures and maintain a log recording the time of each clock synchronization performed, and the result of such synchronization, specifically identifying any synchronization revealing that the discrepancy between its Business Clocks and the time maintained by the National Institute of Standards and Technology ("NIST") exceeds the applicable clock synchronization standard.⁶⁹ In addition, each

⁶³ Plan, Section 4.13(e).

⁶⁴ Letter from Kelvin To, Data Boiler Technologies, LLC, to Brent J. Fields, SEC (July 15, 2016) ("Data Boiler Letter") at 20; FIF Letter at 12.

⁶⁵ See FINRA Rule 4590 (Synchronization of Member Business Clocks).

⁶⁶ SIFMA Letter at 34; Thomson Reuters Letter at 7.

⁶⁷ SIFMA Letter at 34.

⁶⁸ FIF Letter at 12.

⁶⁹ Plan, Appendix C, Section A.3(c) at Appendix C-26.

Participant is in the process of developing its respective clock synchronization compliance rule in an effort to inform the industry of such requirements as soon as possible.

3. Annual Review of Clock Synchronization Standards

Two commenters suggest that, after implementation of the Plan, clock synchronization standards should be reviewed annually.⁷⁰ One of the commenters believes that such annual reviews may be beneficial, but that they should not occur until approximately three years after implementation of the CAT since “it is a very costly and disruptive change for the industry, and lower clock offset can take two years to implement.”⁷¹ The second commenter believes that CAT Reporters should be given sufficient lead time if changes in clock offsets and time stamps are contemplated or when CAT reporting is otherwise expanded such that clock synchronization standards would apply to new events; such lead time should be one year to meet a 50 millisecond clock offset for new applications and servers not covered by the Plan, and two years for clock offsets below 50 milliseconds.⁷²

The Participants note that, pursuant to SEC Rule 613(d)(2), the Plan must require that the Participants “evaluate annually the clock synchronization standard to determine whether it should be shortened, consistent with changes in industry standards.” To satisfy this requirement, Section 6.8(c) of the Plan requires that the Participants, appropriate Industry Member advisory groups and the CCO shall annually evaluate and make a recommendation to the Operating Committee as to whether industry standards have evolved such that the clock synchronization standard should be shortened. Thus, the Plan provides a mechanism for annual review of the clock synchronization standard that the Participants believe will reasonably ensure that the requirements set forth in the Plan keep pace with industry practices. Moreover, the Participants expect that the implementation plan for any changes to the clock synchronization standard would take into consideration, among other factors, the time required for CAT Reporters to update and test their systems.

B. Data Elements

1. Open/Close Indicator

Three commenters suggest that the open/close indicator on equities transactions should not be reported to the Central Repository since this data element currently is not captured for equities.⁷³ Two of the commenters state that including this data element in CAT reporting would require structural and process changes at a significant cost to CAT Reporters.⁷⁴ They also suggest that if the Participants would like to capture information on open/close indicators on equities transactions, then such reporting requirement should be the subject of rule filings with the Commission that are subject to a cost/benefit analysis and public comment given the

⁷⁰ FIF Letter at 106; SIFMA Letter at 34.

⁷¹ FIF Letter at 106.

⁷² SIFMA Letter at 34.

⁷³ FIF Letter at 11, 83-86; Thomson Reuters Letter at 9; SIFMA Letter at 35.

⁷⁴ FIF Letter at 83; SIFMA Letter at 36-37.

complexity and cost of capturing the data element.⁷⁵ Two of the commenters believe that the open/close indicator should apply only to options transactions since there are existing standards for capturing relevant data relating to options transactions.⁷⁶

SEC Rule 613(j)(7) defines the term “material terms of the order” to include, among other data elements, the “open/close indicator.” The definition does not limit the requirement to report an “open/close indicator” to options orders. Accordingly, the Participants believe that this requirement would apply to orders in both equities and options. However, the Participants understand that the open/close indicator is currently captured only on certain options transactions. As a result, the Participants believe that the Commission should clarify that the requirement in SEC Rule 613 to report the open/close indicator should not apply to equities transactions, nor to options transactions in which the open/close indicator is not captured pursuant to current industry practice (*e.g.*, non-market maker options transactions).

2. Categorizing Customer Information Fields by Importance

One commenter suggests that customer information fields should be categorized based on the degree of their importance for market surveillance and market reconstruction purposes, so that CAT Reporters can focus on ensuring accuracy of the fields most important for market surveillance.⁷⁷

The Participants do not agree with this commenter and believe that it would be inappropriate to rank the importance of particular data elements reported to the Central Repository for data correction or other purposes for several reasons. First, SEC Rule 613 does not indicate that any data elements are more or less important for market surveillance or market reconstruction purposes. Instead, SEC Rule 613(c)(7) states that the Plan “shall require each national securities exchange, national securities association, and any member of such exchange or association to record and electronically report to the central repository details for each order and each reportable event, including, but not limited to [the information set forth in SEC Rule 613(c)(7)(i) – (viii)]”. Second, ranking the importance of data elements for market surveillance and market reconstruction purposes might inappropriately reveal the confidential, proprietary surveillance processes used by each Participant. Third, with respect to data accuracy, the Participants have included provisions in the Plan to take into account minor and major inconsistencies in Customer information. In particular, Appendix D explains that “[t]he Plan Processor must design and implement procedures and mechanisms to handle both minor and material inconsistencies in Customer information.”⁷⁸ Additionally, material inconsistencies must be communicated to the submitting CAT Reporter(s) and resolved within the established error correction timeframe, as detailed in Section 8 of the Plan.⁷⁹ The Central Repository also must have an audit trail showing the resolution of all errors.⁸⁰ Finally, the Participants intend to

⁷⁵ FIF Letter at 84; SIFMA Letter at 35-36.

⁷⁶ FIF Letter at 84; Thomson Reuters Letter at 9.

⁷⁷ FIF Letter at 11, 93.

⁷⁸ Plan, Appendix D, Section 9.4 at Appendix D-35.

⁷⁹ Plan, Appendix D, Section 9.4 at Appendix D-35.

⁸⁰ Plan, Appendix D, Section 9.4 at Appendix D-35.

monitor errors in the customer information fields and will consider, as appropriate, whether to prioritize the correction of certain data fields over others.

3. Consistency of CAT-Order-ID with FINRA OATS Order ID

One commenter notes that the CAT-Order-ID and Order ID of FINRA's Order Audit Trail System ("OATS") are inconsistent with respect to field length and type (*e.g.*, alphanumeric).⁸¹ Pursuant to the Plan,⁸² CAT Reporters will be able to report existing order identifiers to the Central Repository, so the Participants do not believe that it is necessary to align the field length and type of CAT-Order-IDs with FINRA OATS Order IDs. The Participants note that the CAT-Order-ID will be a CAT-generated unique identifier that can be used by regulatory users to query CAT Data. The CAT-Order-ID is distinct from the data elements required to be reported to the Central Repository with each Reportable Event for purposes of processing and assembling the complete lifecycle of each Reportable Event.⁸³

4. Unique Identifiers

One commenter believes that a unique ID for every client may be unnecessary and that such unique IDs could instead be applied only to those clients with a certain threshold of trading activity.⁸⁴ By way of example, the commenter explains that the Commission currently distinguishes between participants that file large trader reports versus average retail investors trading through brokerages.⁸⁵ The Participants do not believe that such trading activity thresholds with respect to identifiers would be consistent with the requirements of SEC Rule 613. The use of unique IDs is critical to the effectiveness and usefulness of the CAT since these data elements will help regulatory users conduct surveillance across market centers and identify activity originating from multiple market participants.

5. "Role in the Account"

One commenter states that "[r]ole in the account," a component in the definition of Customer Identifying Information, may not be consistently maintained across firms, which could cause problems populating and maintaining this data field.⁸⁶ Accordingly, the commenter recommends that this field be required only on a going-forward basis for new accounts created after the implementation of CAT reporting.⁸⁷ The Plan states that CAT Reporters must report the "role in the account" as part of the Customer Identifying Information.⁸⁸ The Plan does not distinguish between legacy and new accounts with regard to this requirement, and the Participants do not believe that this change is necessary.

⁸¹ Thomson Reuters Letter at 9.

⁸² See Plan, Section 6.4; see also Letter from SROs to Brent Fields, SEC, Request for Exemptive Relief from Certain Provisions of SEC Rule 613 of Regulation NMS under the Securities Exchange Act of 1934 (Jan. 30, 2015) ("Exemptive Request Letter").

⁸³ See Plan, Appendix D, Section 3 at Appendix D-7.

⁸⁴ Anonymous Letter (July 18, 2016) ("Anonymous Letter") at 3.

⁸⁵ *Id.*

⁸⁶ Thomson Reuters Letter at 10.

⁸⁷ *Id.*

⁸⁸ See Plan, Section 1.1 (defining "Customer Identifying Information").

6. Modification and Cancellation Instructions

One commenter believes that modification and cancellation instructions are as important as other Reportable Events and, therefore, the identity of those giving such instructions is “vital information for market surveillance purpose[s].”⁸⁹ The commenter opposes the exemptive relief granted by the Commission that permits CAT Reporters to report whether a modification or cancellation of an order was given by a Customer or initiated by a broker-dealer or exchange, in lieu of requiring the reporting of the Customer-ID of the person giving the modification or cancellation instruction.⁹⁰

The Participants considered this issue when drafting the Exemptive Request Letter. Reporting a single, specific Customer-ID for all modifications and cancellations is not possible under the Customer Information Approach described in the Exemptive Request Letter because broker-dealers would not maintain Customer-IDs; instead, each broker-dealer would provide firm-designated identifiers.⁹¹ The Participants also believe that requiring CAT Reporters to report the Customer-ID of the specific individual initiating a cancellation or modification would introduce an inconsistent level of granularity in customer information between order origination and order modifications/cancellations since SEC Rule 613(c)(7)(i) does not require the reporting of the specific individual originating an order.⁹²

7. Account Type

One commenter suggests that the definition of “account type” should be consistent with existing OATS definitions.⁹³ The Participants have not yet determined how “account types” will be defined for purposes of reporting to the Central Repository. The Participants anticipate that account types will be defined in the Technical Specifications.

8. Customer Type

One commenter notes that it cannot identify a definition of “customer type” in the Plan and suggests that the Plan use existing fields currently reported to the SROs or the SEC in order to minimize implementation efforts.⁹⁴ The commenter also requests clarification or an amendment to the Plan to define “customer type,” as well as an opportunity to comment on the implementation impact of this field. The Participants have not yet determined how “customer type” will be defined for purposes of reporting to the Central Repository. The Participants anticipate that customer types will be defined in the Technical Specifications.

⁸⁹ See Data Boiler Letter at 24 (responding to Question 161 of the Plan Proposing Release).

⁹⁰ See *id.*; Plan, Section 6.3(d)(iv)(F).

⁹¹ Exemptive Request Letter at 12.

⁹² *Id.*

⁹³ Thomson Reuters Letter at 9.

⁹⁴ *Id.*

9. Allocation Time

One commenter states that “allocation time” is not consistently defined or captured in the Plan.⁹⁵ The commenter explains that providing allocation time “may prove difficult without guidance that defines allocation time as the time it is processed by the CAT Reporting system.”⁹⁶ Alternatively, the commenter suggests that guidance could state that it is “permissible for CAT Reporting systems to pass through allocation time received and if the field is missing allow a default to the CAT reporting system’s allocation processing time.”⁹⁷ The Participants have not yet determined how “time of the allocation,” as used in the definition of “Allocation Report,” will be defined for purposes of reporting to the Central Repository. The Participants anticipate that the time of allocation will be addressed in the Technical Specifications.

10. Off Exchange Transactions

One commenter believes that a “full audit trail would include transactions both on and off exchange.”⁹⁸ The commenter believes that orders and executions in ATSS/dark pools or other trading venues and internalized within broker-dealers are equally important as those on national securities exchanges.⁹⁹ As proposed, the Plan would require transactions in Eligible Securities to be reported to the Central Repository regardless of where they occur. Section 1.1 of the Plan defines an “Eligible Security” as including “(a) all NMS Securities and (b) all OTC Equity Securities.”¹⁰⁰ Accordingly, the CAT will capture orders and transactions in NMS Securities and OTC Equity Securities, even if they occur in ATSS/dark pools, other trading venues or internally within broker-dealers. The CAT, however, will not capture indications of interest in Eligible Securities. In adopting SEC Rule 613, the SEC concluded that it would not include indications of interest in the definition of “order” for purposes of the CAT, as “the utility of the information such data would provide to regulators would not justify the costs of reporting the information.”¹⁰¹

11. Creation and Redemption Requests for ETFs

One commenter suggests that creation and redemption requests for exchange-traded funds (“ETFs”) should be reported to the Central Repository.¹⁰² The Participants believe that the parties involved in, and the processes used for, ETF creation and redemption are substantially distinct from those used for transactions in NMS Securities, and such parties may not be CAT Reporters. Accordingly, including creation and redemption requests for ETFs in the initial phase of the CAT would be complex and may be difficult for CAT Reporters to address. For these reasons, the Participants believe that it is not appropriate to require CAT Reporters to report

⁹⁵

Id.

⁹⁶

Id.

⁹⁷

Id.

⁹⁸

Anonymous Letter at 9.

⁹⁹

Id.

¹⁰⁰

The Participants note that two commenters generally support the inclusion of OTC Equity Securities in the CAT. See FIF Letter at 121; Thomson Reuters Letter at 4.

¹⁰¹

Rule 613 Adopting Release at 45747.

¹⁰²

Anonymous Letter at 17.

creation and redemption requests for ETFs in the initial phase of the CAT. However, the Participants will continue to assess whether such reporting should be included in future phases of the CAT.

12. Additional Short Sale Information

One commenter suggests that lending/borrow information should be reported to the Central Repository for transactions that are short sales in order to help regulatory users detect short sales that are not associated with borrowed shares.¹⁰³ The same commenter also suggests that additional pre-execution short sale locate data should be reported to the Central Repository.¹⁰⁴ Although both SEC Rule 613(j)(7) and Section 1.1 of the Plan define “Material Terms of the Order” to include, among other data elements, whether an order is short or short exempt, neither the Rule nor the Plan requires that short sale lending/borrow information or locate data be reported to the Central Repository. The Participants do not believe that requiring such information to be reported during the initial implementation is appropriate. Moreover, the Participants believe that the potential benefit of requiring these additional data elements would be outweighed by the cost required to design and implement them.

13. Futures Data

Two commenters support the inclusion of futures data in the CAT.¹⁰⁵ One of the commenters believes that incorporating futures data into the CAT would create a more comprehensive audit trail that would further enhance regulatory surveillance.¹⁰⁶ The other commenter believes that the CAT must include futures data to adequately protect against a future market crash.¹⁰⁷

SEC Rule 613 does not address reporting futures transactions to the Central Repository, so the initial phase of CAT reporting under the Plan will not require the reporting of such transactions. That said, the Participants recognize that requiring the reporting of additional asset classes and types of transactions is important for cross-market surveillance. The Participants also believe that the Commission shares this view. For instance, SEC Rule 613(i) requires the Participants, within six months of the effectiveness of the Plan, to provide to the Commission a document outlining how additional securities and transactions could be incorporated into the CAT; a similar provision also appears in Appendix C of the Plan.¹⁰⁸ The Commission also recognized the importance of gradually expanding the scope of the CAT and directed the Commission staff “to work with the SROs, the CFTC staff, and other regulators and market participants to determine how other asset classes, such as futures, might be added to the

¹⁰³ Anonymous Letter at 6.

¹⁰⁴ *Id.* at 7.

¹⁰⁵ Letter from Joanne Moffic-Silver, CBOE, to Brent J. Fields, SEC (July 21, 2016) (“CBOE Letter”) at 1-2; Letter from Dennis M. Kelleher, Stephen W. Hall and Lev Bagramian, Better Markets, Inc., to Brent J. Fields, SEC (July 18, 2016) (“Better Markets Letter”) at 7.

¹⁰⁶ CBOE Letter at 1-2.

¹⁰⁷ Better Markets Letter at 7.

¹⁰⁸ *See* Plan, Appendix C, Section C.9, at Appendix C-98.

consolidated audit trail.”¹⁰⁹ Accordingly, the Participants intend to assess whether it would be appropriate to expand the scope of the CAT to other asset classes and types of transactions, including futures, at a later date.

14. Reporting Clearing Information

One commenter suggests that various information pertaining to the clearance of securities transactions, including information currently reported to clearing agencies, should be reported to the Central Repository.¹¹⁰ The Participants note that such information is not called for by SEC Rule 613, and the Participants do not believe that it would be appropriate to require this type of information, particularly not at the outset of the CAT.

C. Record Retention Requirements

One commenter states that the CAT’s record retention period should be long enough to satisfy regulatory requirements associated with other regulatory systems (*e.g.*, the seven year record retention requirement for electronic blue sheets (“EBS”)).¹¹¹ The commenter believes that the Commission should consider the extent to which CAT reporting could fulfill Commission and SRO recordkeeping obligations of CAT Reporters.¹¹²

As described in the Plan, all data in the Central Repository must be kept for a rolling six year period, which would create a six year historical audit trail.¹¹³ This data must be directly available to, and searchable by, regulators electronically without any manual intervention.¹¹⁴ The Participants believe that this retention period is consistent with, and actually exceeds, the record retention period applicable to national securities exchanges and national securities associations under SEC Rules 17a-1(b) and 17a-6(a), which require that documents be kept for at least five years. Additionally, the Participants do not believe that the Plan’s record retention requirements should be expanded beyond six years since such expansion would impact Bidder solutions and the maintenance costs associated with the CAT.

With respect to the comment regarding CAT Reporters using the CAT to satisfy their recordkeeping obligations, the Participants believe that, in the initial phase of reporting, it would be inappropriate for CAT Reporters to fulfill their recordkeeping obligations by relying on the Central Repository. Permitting this use of the Central Repository may impose additional regulatory obligations and resource strains on the Central Repository. However, the Participants recognize that the Central Repository could be a useful tool to assist CAT Reporters in satisfying their recordkeeping and record retention obligations. Accordingly, after the implementation of CAT reporting, the Operating Committee will review whether it may be possible for CAT Reporters to use the CAT to assist in satisfying certain recordkeeping and record retention obligations.

¹⁰⁹ Rule 613 Adopting Release at 45745 n.241.

¹¹⁰ *See generally* Anonymous Letter.

¹¹¹ SIFMA Letter at 6.

¹¹² *Id.*

¹¹³ Plan, Appendix C, Section A.3(d) at Appendix C-28.

¹¹⁴ *Id.*

D. Time Stamps

Two commenters suggest that CAT Reporters that capture time stamps at a more granular level than that required by the Plan should not be required to include the more granular time stamp when reporting to the CAT.¹¹⁵ One of the commenters explains that “[r]equiring sub-millisecond reporting for partial data will be expensive and not yield regulatory benefit as it will result in a false sense of accuracy on event sequencing, and at the same time will be unfair to firms that capture data at a more granular level than required.”¹¹⁶ The other commenter also notes that requiring CAT Reporters to adhere to a more granular requirement would be “unnecessarily expensive” and “would be inequitable and would not serve a regulatory purpose.”¹¹⁷

Conversely, two commenters believe that CAT Reporters that capture time stamps at a more granular level than that required by the Plan should be required to use the more granular time stamps when reporting to the CAT.¹¹⁸ One of the commenters believes that a more granular time stamp requirement would permit the CAT “to more comprehensively and accurately capture the frequency and scale” of practices such as high frequency trading (“HFT”),¹¹⁹ and the other commenter believes that time stamp granularity “should go hand-in-hand with how fast a market participant is allowed to conduct their HFT activities.”¹²⁰

The Participants have considered these comments and believe that CAT Reporters should be required to report time stamps to the CAT at the granularity at which they are captured, even if that is more granular than that required by the Plan. Notably, this approach is consistent with SEC Rule 613(d)(3), which states, in relevant part:

To the extent that the relevant order handling and execution systems of any national securities exchange, national securities association, or member of such exchange or association utilize time stamps in increments finer than the minimum required by the national market system plan, the plan shall require such national securities exchange, national securities association, or member to utilize time stamps in such finer increments when providing data to the central repository, so that all reportable events reported to the central repository by any national securities exchange, national securities association, or member can be accurately sequenced.

Any departure from this approach would require action by the Commission to amend SEC Rule 613 or provide exemptive relief from the requirements of SEC Rule 613(d)(3). Moreover, the Participants believe that as additional CAT Reporters capture time stamps that are more granular

¹¹⁵ FIF Letter at 12; SIFMA Letter at 35.

¹¹⁶ FIF Letter at 12.

¹¹⁷ SIFMA Letter at 35.

¹¹⁸ Better Markets Letter at 8; Data Boiler Letter at 21.

¹¹⁹ Better Markets Letter at 8.

¹²⁰ Data Boiler Letter at 21.

than that required by the Plan, the quality of data reported to the CAT will increase correspondingly.

E. Message Formats

Three commenters suggest that the Plan mandate a uniform standard electronic format for reporting data to the Central Repository.¹²¹ One of the commenters believes that the Commission should mandate the most widely used, open-sourced, machine-readable data format possible, and that all CAT Reporters should be required to use such format.¹²² Another of the commenters believes that the use of a uniform standard would result in quicker implementation times and simplify data aggregation.¹²³ The third commenter believes that the use of a uniform standard electronic format could improve data completeness and, in turn, contribute to the long-term success of the CAT, though detailed technical specifications will be required to address the varying needs and business models of different market participants.¹²⁴

The Participants continue to believe that the Plan should not mandate a specific message format. Instead, the Participants believe that the Bidders should be granted some discretion to propose what they believe is the best, most efficient approach for their solutions. That said, the Participants understand that the message format used for reporting to the Central Repository must be easily understood and adopted by the industry, and this factor will be considered as the Participants evaluate each Bidder's solution. Moreover, the Participants also will take into consideration that the Plan Processor must be able to reliably and accurately convert data to a uniform electronic format for consolidation and storage, regardless of the message formats in which the CAT Reporters would be required to report data to the Central Repository. The message format(s) ultimately selected for reporting to the Central Repository will be described in the Technical Specifications, which will be approved by the Operating Committee.

F. Reporting Procedures and Timelines

1. Correction of Errors in Customer Data

One commenter suggests that the Plan Processor identify errors in customer information data by T+1 at noon to coincide with the deadline reflected in the Plan for the Plan Processor to identify errors in transaction reports.¹²⁵ The commenter believes that this will help to better analyze linked errors and provide more time during the trading day to correct such errors.¹²⁶

¹²¹ Better Markets Letter at 7-8; Letter from Courtney Doyle McGuinn, FIX Trading Community, to Brent J. Fields, SEC (July 14, 2016) ("FIX Letter") at 1-3; Letter from Mark Husler and Jonathan Jachym, UnaVista, to Brent J. Fields (July 18, 2016) ("UnaVista Letter") at 2-3.

¹²² Better Markets Letter at 7.

¹²³ FIX Letter at 1.

¹²⁴ UnaVista Letter at 3.

¹²⁵ FIF Letter at 53.

¹²⁶ *Id.*

The Plan states that the Plan Processor must validate customer data and generate error reports no later than 5:00 pm. Eastern Time on T+3.¹²⁷ The Participants note that there is an inadvertent error in Appendix D and this portion of the Plan should have indicated that such validation and generation of error reports must occur no later than 5:00 p.m. Eastern Time on T+1. The Participants intend to amend the Plan to correct this error.

The Participants believe that communications with customers might be necessary to correct errors in customer data and have included a two day period – from 5:00 p.m. Eastern Time on T+1 to 5:00 p.m. Eastern Time on T+3 – to facilitate data correction. The Participants believe that the proposed period provides sufficient time to correct errors in customer data and do not believe that it is necessary to expand the customer data correction period at this time.¹²⁸

2. Error Correction Period

Two commenters suggest that the CAT maintain existing error correction periods during the initial implementation period.¹²⁹ One of the commenters believes that the CAT should use the current five day error correction period used for OATS reporting.¹³⁰ The commenter believes that the OATS five day error correction period should begin from the time the reject or error message was received, not from the time of submission, and should be retained until CAT Reporters have been “provided with a sufficiently rich test and error correction tool set, have become experienced with CAT reporting and it has been proven that the CAT system and CAT Reporters can achieve the shorter error correction time frame as currently specified in the CAT NMS Plan.”¹³¹ The commenter also asks that the Participants provide a detailed set of error reports daily, as well as monthly summaries, to facilitate the identification of errors by the CAT Reporters and the CAT system, to support error correction and to strengthen CAT Reporters’ reporting capabilities.¹³² The second commenter believes that the proposed timeframe appears too aggressive as implementing CAT reporting will introduce a learning curve for broker-dealers and regulators as they begin to understand the intricacies of the new and complex system.¹³³

As discussed in the Plan, the Participants believe that the prompt availability of corrected data is imperative to the utility of the Central Repository.¹³⁴ Accordingly, the Participants believe that the proposed three day window for error corrections appropriately balances the need for regulators to access corrected data in a timely manner while taking into consideration the industry’s concerns. Moreover, although a five day window for error correction is used for OATS reporting today, the Participants believe that a three day window would allow for better regulatory surveillance and market oversight in accordance with SEC Rule 613.

¹²⁷ Plan, Appendix D, Section 6.2 at Appendix D-20.

¹²⁸ The Participants note that the proposed period is comparable to the period applicable to the correction of order data. The Participants propose to amend the Plan so the period for correcting order data runs from noon Eastern Time on T+1 to noon Eastern Time on T+3. *See* Plan, Appendix D, Section 6.1 at Appendix D-18.

¹²⁹ FIF Letter at 3, 9; KCG Letter at 9.

¹³⁰ FIF Letter at 3, 9.

¹³¹ FIF Letter at 9.

¹³² *Id.*

¹³³ KCG Letter at 9.

¹³⁴ Plan, Appendix C, Section A.1(a)(iv) at Appendix C-10; Plan, Appendix C, Section A.2(a) at Appendix C-15.

3. Real-Time Reporting

Two commenters believe that the Plan should require real-time or near real-time reporting.¹³⁵ One of the commenters explains that a shorter reporting timeframe would allow for more robust surveillance and quicker reaction time that could provide early warnings of potential market events.¹³⁶ The second commenter suggests that the Plan should mandate the real-time collection of SIP data, instead of an end-of-day batch process, to assist market surveillance.¹³⁷

In adopting SEC Rule 613, the SEC determined not to require real-time reporting to the CAT.¹³⁸ Accordingly, the Plan does not require real-time reporting to the Central Repository of CAT Data (which is defined in Section 1.1 of the Plan as including data derived from Participant Data, Industry Member Data, SIP Data and such other data as the Operating Committee may designate as “CAT Data” from time to time). With respect to the comment that real-time or near real-time reporting would provide early warnings of potential market events and assist surveillance, the Participants note that certain Participants already have real-time surveillance and monitoring tools in place for their respective markets.

4. End of Trading Day

One commenter suggests that the Plan should define the cut-off time for the trading day as 4:00 p.m. Eastern Time, consistent with the current OATS cut-off time.¹³⁹ The commenter believes that this cut-off time would align with the start of trading in other time zones.¹⁴⁰ The Participants do not believe that the Plan should define a universal cut-off time for the trading day since the “trading day” may differ across the different types of Eligible Securities, particularly if the scope of “Eligible Security” is expanded in later phases of the CAT. Instead, the Participants believe that it is appropriate for the Operating Committee to determine the cut-off time for the trading day after the Plan is approved by the Commission. The Participants anticipate that the cut-off time(s) will be set forth in the Technical Specifications.

5. Periodic Refresh of Customer Data

One commenter believes that the requirement for full customer information refreshes should be eliminated from the Plan and replaced by a voluntary refresh in limited circumstances, such as when there is data corruption or some other need for such an update (*e.g.*, if it is discovered that CAT Data and a CAT Reporter’s internal customer data are not synchronized).¹⁴¹ The commenter explains that eliminating required periodic refreshes of customer information may slightly reduce the burden or cost on the broker-dealer community and the Plan Processor, and it would eliminate the need for unnecessary transmission and handling of sensitive

¹³⁵ Better Markets Letter at 6; Data Boiler Letter at 42.

¹³⁶ Better Markets Letter at 6.

¹³⁷ Data Boiler Letter at 42.

¹³⁸ Rule 613 Adopting Release at 45767-45769.

¹³⁹ FIF Letter at 95-96.

¹⁴⁰ *Id.*

¹⁴¹ *Id.* at 12.

personally identifiable information (“PII”), thereby improving the overall security of the CAT.¹⁴² The commenter also believes that the CAT should provide flexibility in selecting the accounts to be included in any upload to the CAT.¹⁴³

The Participants believe that maintaining the accuracy of customer information is vital to the operation of the CAT. Thus, the Participants believe that a periodic refresh of customer information is beneficial as compared to the suggested approach. A periodic refresh will help to ensure that all customer information remains accurate and up to date. As discussed more fully in Section XI of this letter, the Participants appreciate that the industry is concerned with maintaining the confidentiality of PII and other CAT Data. To that end, Section 6.12 of the Plan requires the Plan Processor to develop and maintain a comprehensive information security program that meets certain requirements set forth in the Plan; such program must be approved and reviewed at least annually by the Operating Committee. The Participants continue to assess the Bidders’ proposed security solutions and believe that, once the CAT is operational, the information security program will address the commenters’ concerns regarding data security. Finally, as noted in the Plan, the Participants will define the scope of what constitutes a “full” customer information refresh with the assistance of the Plan Processor to determine the extent to which inactive or other accounts would need to be reported.¹⁴⁴

III. EXEMPTIVE RELIEF

A. CAT Reporter ID

1. Existing Identifier Approach

As a general matter, several commenters express support for the Existing Identifier Approach set forth in the Plan.¹⁴⁵ The Participants agree and continue to support the Existing Identifier Approach.

2. Differing Existing Identifiers

Two commenters seek clarification that the Existing Identifier Approach would permit a broker-dealer to submit an SRO-Assigned Market Participant Identifier different from the SRO-Assigned Market Participant Identifier used at the venue where the order is executed.¹⁴⁶ As one commenter notes: “Orders may be sent from one broker-dealer to another before reaching their final routing destination. While firms use an SRO-identifier for those reports, a different identifier for the submitting firm may be used by the exchange where the order is ultimately sent.”¹⁴⁷ For example, it is common practice under OATS to use the FINRA MPID for new

¹⁴² *Id.* at 93.

¹⁴³ *Id.*

¹⁴⁴ Plan, Appendix C, Section A.1(a)(iii) at Appendix C-8.

¹⁴⁵ *See, e.g.*, FIF Letter at 9, 10-11, 72-75; Data Boiler Letter at 22; Thomson Reuters Letter at 7-8.

¹⁴⁶ FIF Letter at 10-11; Thomson Reuters Letter at 8.

¹⁴⁷ FIF Letter at 11.

order and route reports, although the CAT Reporter may not know the trading venue at which the order will be executed.¹⁴⁸

The Participants confirm that such a practice would be acceptable under the Existing Identifier Approach. As described in the Exemptive Request Letter and incorporated in the Plan,¹⁴⁹ a broker-dealer CAT Reporter would be permitted to use any existing SRO-Assigned Market Participant Identifier (*e.g.*, FINRA MPID, Nasdaq MPID, NYSE Mnemonic, CBOE User Acronym and CHX Acronym) when reporting information to the Central Repository, regardless of the eventual execution venue. The Central Repository will maintain a list of all SRO-Assigned Market Participant Identifiers for each Industry Member, and would link each of these with the CAT-Reporter ID associated with that Industry Member.¹⁵⁰ Therefore, the use of any such Identifier, including the FINRA MPIDs, at any point would be acceptable under the Existing Identifier Approach.

B. Customer ID

1. Customer Information Approach

Three commenters express their support for the Customer Information Approach.¹⁵¹ In contrast, one commenter recommends the use of a universal Customer ID as prescribed by SEC Rule 613, instead of the use of a Firm Designated ID under the Customer Information Approach.¹⁵² This commenter believes that the Customer Information Approach will significantly increase the complexity and fragmentation of the dataset, slowing down consolidation, whereas a universal Customer ID will assist in market reconstruction.

The Participants continue to believe that the benefits of the Customer Information Approach outweigh any potential disadvantages. Based upon the Participants' analysis of this issue and discussions with the industry, as detailed in the Exemptive Request Letter¹⁵³ and the Plan,¹⁵⁴ the Participants disagree that the Customer Information Approach will increase complexity or slow down consolidation. Utilizing a single Customer ID within the CAT while allowing firms to report using existing identifiers, will substantially reduce costs and speed implementation without limiting the regulatory use of the data. Indeed, the additional cost required to comply with the Customer ID approach set forth in the Rule would be at least \$195 million for the largest CAT Reporters.¹⁵⁵

¹⁴⁸ Thomson Reuters Letter at 8.

¹⁴⁹ Plan, Sections 6.3 and 6.4.

¹⁵⁰ Exemptive Request Letter at 19-20.

¹⁵¹ Thomson Reuters Letter at 7-8; Data Boiler Letter at 22; FIF Letter at 2, 9, 66-72.

¹⁵² Better Markets Letter at 9.

¹⁵³ Exemptive Request Letter at 8-18.

¹⁵⁴ Plan, Appendix C, Section 11(b) at Appendix C-112.

¹⁵⁵ Order Granting Exemptions from Certain Provision of Rule 613 Pursuant to Section 36(a)(1) of the Securities Exchange Act of 1934, Securities Exchange Act Rel. No. 77265 (Mar. 1, 2016), 81 Fed. Reg. 11856, 11860 (Mar. 7, 2016).

2. Report of Customer Information

Two commenters recommend that the Participants revise the Plan to permit Customer Identifying Information and Customer Account Information to be reported as part of the customer definition process, and not as a part of the new order report.¹⁵⁶ These commenters believe that the only data element needed on the new order report to represent the customer is the Firm Designated ID.

The Participants believe that the Exemptive Request Letter was intended to require CAT Reporters to supply Customer Identifying Information and Customer Account Information as part of the customer definition process, rather than as information submitted with each order. Section 6.4(d)(iv) of the Plan describes this customer definition process, which includes the process for submitting customer information and for assigning Customer-IDs for use within the CAT. Moreover, the operation of Sections 6.3(d)(i) and 6.4(d)(i) of the Plan indicate that a CAT Reporter is required to submit the Firm Designated IDs with the new order reports, but not the customer information.

The Participants recognize, however, that the language in Section 6.4(d)(ii)(C) of the Plan could be read to suggest that the customer information must be provided with each new order report. Specifically, Section 6.4(d)(ii)(C) states that “each Participant shall, through its Compliance Rule, require its Industry Members to record and report to the Central Repository the following, as applicable . . . (C) for original receipt or origination of an order, the Firm Designated ID, Customer Account Information, and Customer Identifying Information for the relevant Customer.” The qualifying phrase “for original receipt or origination of an order” in paragraph (C) could be read to suggest that the Customer Account Information and Customer Identifying Information must be submitted contemporaneously with each order, rather than submitting such information pursuant to the customer definition process such that the CAT may link the Customer Account Information and Customer Identifying Information with order.

To clarify that the customer information would be submitted pursuant to the customer definition process rather than with each order report, the Participants propose to amend paragraph (C) of the Plan to state:

each Participant shall, through its Compliance Rule, require its Industry Members to record and report to the Central Repository the following, as applicable . . . (C) for original receipt or origination of an order, the Firm Designated ID for the relevant customer, and, in accordance with Section 6.4(d)(iv), Customer Account Information, and Customer Identifying Information for the relevant Customer.”

[Additions underlined; deletions bracketed]

¹⁵⁶ Thomson Reuters Letter at 8-9; FIF Letter at 9-10.

3. Active Accounts

One commenter requests clarification that only active accounts are required to be reported as part of the customer definition process.¹⁵⁷ The Plan currently anticipates that Industry Member CAT Reporters would only report customer information for active accounts as part of the customer definition process. Specifically, the Plan states that “broker-dealers will initially submit full account lists for all active accounts to the Plan Processor and subsequently submit updates and changes on a daily basis,”¹⁵⁸ and defines “active accounts” as “accounts that have had activity within the last six months.”¹⁵⁹ Moreover, the Plan states that “[t]he Participants anticipate that Customer information that is initially reported to the CAT could be limited to only customer accounts that have, or are expected to have, CAT-reportable activity. For example, accounts that are considered open, but have not traded Eligible Securities in a given timeframe may not need to be pre-established in the CAT, but rather could be reported as part of daily updates after they have CAT-reportable activity.”¹⁶⁰

The Participants propose to amend the Plan to clarify that only active accounts are required to be reported as part of the customer definition process. Specifically, the Participants proposed to add a definition of “Active Account” to Section 1.1, which would state that “‘Active Account’ means an account that has had activity in Eligible Securities within the last six months.” In addition, the Participants propose to amend Section 6.4(d)(iv) of the Plan as follows:

(iv) Each Industry Member must submit an initial set of the Customer information required in Section 6.4(d)(ii)(C) for Active Accounts to the Central Repository upon the Industry Member’s commencement of reporting to the Central Repository. Each Industry Member must submit to the Central Repository any updates, additions or other changes to the Customer information required in Section 6.4(d)(ii)(C) on a daily basis, including any such Customer information for any new Active Accounts. [Additions underlined; deletions bracketed]

C. Market Maker Quotes

1. Exemptive Relief for Options Market Maker Quotes

One commenter expresses support for the inclusion in the Plan of the exemptive relief related to options market maker quotes.¹⁶¹ In contrast, one commenter expresses concern that, if Options Market Makers do not provide quote information directly, it could lead to inconsistencies in data collection and negatively affect the audit trail.¹⁶² Based on the Participants’ analysis of this issue and discussions with the industry, as described in detail in the

¹⁵⁷ FIF Letter at 10.

¹⁵⁸ Plan, Appendix C, Section A.1(a)(iii) at Appendix C-9.

¹⁵⁹ Plan, Appendix C, Section A.1(a)(iii) at Appendix C-9, n.39.

¹⁶⁰ Plan, Appendix C, Section A.1(a)(iii) at Appendix C-8, n.36.

¹⁶¹ FIF Letter at 9, 10 and 62- 66.

¹⁶² Data Boiler Letter at 25.

Exemptive Request Letter¹⁶³ and the Plan,¹⁶⁴ the Participants disagree with the commenter's view that the approach described in the Exemptive Request Letter would be detrimental to the CAT. In particular, the Participants note that all data that would otherwise be reported by Options Market Makers will still be reported, including Quote Sent Time. The only difference between the requirement under SEC Rule 613 and the exemptive relief is who is reporting the quote data (other than the Quote Sent Time).

2. Equity Market Maker Quotes

Two commenters recommend that the SEC also exempt equities market makers, in addition to options market makers, from submitting market maker quotes to the CAT.¹⁶⁵ In drafting the Plan and the Exemptive Request Letter, the Participants focused on options market maker quotes because "options market maker quotes are the single largest projected volume of all data elements that must be reported to the Central Repository."¹⁶⁶ In contrast, the volume of equities market maker quotes is much smaller than the volume of options market maker quotes. For example, based on discussions with the DAG, the Participants understood that "the combined options exchanges produced as many as 8,634 quote updates for every trade that occurred in the options marketplace."¹⁶⁷ The Participants understand that there are far fewer quote updates for every trade in the equities markets, with an approximate average ratio of quotes to trades of 18 to 1 in the equities markets.¹⁶⁸ In light of the differing quote volumes and the differing impact on the CAT for equities market makers, the Plan Participants focused the Exemptive Request Letter on options.

D. Order Allocation Information

1. Linking Allocations to Executions

One commenter is supportive of the approach taken in the Plan with regard to linking executions to allocations.¹⁶⁹ In contrast, one commenter asserted that broker-dealers can and should track order allocation information, including many-to-many situations.¹⁷⁰ Based on the Participants' prior analyses and various discussions with the industry on this topic, the Participants continue to believe that their proposed approach to allocations appropriately weighs the cost and benefits. For example, as discussed in detail in the Exemptive Request Letter,¹⁷¹ the Participants believe that linking allocations to executions could show artificial relationships between these order events.¹⁷² In addition, the Participants believe such a change would require

¹⁶³ Exemptive Request Letter at 2-8.

¹⁶⁴ *See generally* Plan, Appendix C.

¹⁶⁵ FIF Letter at 10.

¹⁶⁶ Exemptive Request Letter at 7.

¹⁶⁷ Exemptive Request Letter at 6.

¹⁶⁸ This approximation is based on the equities SIP data from the Consolidated Tape Association/Consolidated Quotation System and UTP Plans from June 2014 to June 2016.

¹⁶⁹ Thomson Reuters Letter at 8; FIF Letter at 9.

¹⁷⁰ Data Boiler Letter at 40.

¹⁷¹ Exemptive Request Letter at 26-31.

¹⁷² Exemptive Request Letter at 28.

significant re-engineering of existing business processes and workflows across front, middle and back offices, with a cost of compliance of at least \$525 million for the largest broker-dealers.¹⁷³

2. Time Stamps on Allocations

Three commenters recommend that the Plan should not require time stamps for allocations, as allocations are a post-trade process and not time-critical.¹⁷⁴ The commenters emphasized that SEC Rule 613 does not require such time stamps, that the time stamps on Allocation Reports represent a costly addition to reporting requirements, and that prior cost analyses did not take into account this requirement. One commenter recommended that, if time stamps are required for Allocation Reports, the time should be reported with a granularity of one second (as it is for manual order events).

The Participants have reviewed the commenters' cost studies and descriptions of current allocation processes, and understand the practical issues raised by the time stamp requirement. Nevertheless, the Participants believe that the time stamps will be a significant tool for detecting regulatory issues associated with allocations, including allocation fraud. As the SEC notes in the Plan Proposing Release, "[a]llocation time at the subaccount level is critical for determining whether some customers are systematically given more favorable allocation treatment than others."¹⁷⁵ Accordingly, the Participants continue to believe it is important for this requirement to be in the Plan.

However, the Participants recognize the practical issues raised by requiring time stamps for Allocation Reports. Accordingly, the Participants propose to amend the Plan to permit CAT Reporters to report the time for Allocation Reports with a granularity of one second (as it is for Manual Order Events). Specifically, the Participants propose to amend Section 6.8(b) of the Plan as follows:

(b) Each Participant shall, and through its Compliance Rule shall require its Industry Members to, report information required by SEC Rule 613 and this Agreement to the Central Repository in milliseconds. To the extent that any Participant utilizes timestamps in increments finer than the minimum required in this Agreement, such Participant shall utilize such finer increment when reporting CAT Data to the Central Repository so that all Reportable Events reported to the Central Repository can be adequately sequenced. Each Participant shall, through its Compliance Rule: (i) require that, to the extent that its Industry Members utilize timestamps in increments finer than the minimum required in this Agreement, such Industry Members shall utilize such finer increment when reporting CAT Data to the Central Repository; and (ii) provide that a pattern or practice of reporting events outside of the required clock synchronization time

¹⁷³ Exemptive Request Letter at 31.

¹⁷⁴ SIFMA Letter at 35; Letter from Richard Foster, Financial Services Roundtable, to Brent J. Fields, SEC (July 15, 2016) ("FSR Letter") at 9; FIF Letter at 3, 11 and 86-90.

¹⁷⁵ Securities Exchange Act Release No. 77724 (Apr. 27, 2016), 81 Fed. Reg. 30614, 30666 (May 17, 2016) ("Plan Proposing Release").

period without reasonable justification or exceptional circumstances may be considered a violation of SEC Rule 613 and the CAT NMS Plan. Notwithstanding the preceding sentences, each Participant and Industry Member shall be permitted to record and report: (i) Manual Order Events to the Central Repository in increments up to and including one second, provided that Participants and Industry Members shall be required to record and report the time when a Manual Order Event has been captured electronically in an order handling and execution system of such Participant or Industry Member (“Electronic Capture Time”) in milliseconds; and (ii) the time of allocation on Allocation Reports in increments up to and including one second.

[Additions underlined; deletions bracketed]

E. Account Effective Date

Three commenters are supportive of the Exemptive Request Letter related to the Account Effective Date.¹⁷⁶ The Participants continue to believe that the proposed use of the Account Effective Date as described in the Exemptive Request Letter is appropriate.¹⁷⁷

F. Manual Order Timestamps

One commenter expresses support for the Exemptive Request Letter related to time stamp granularity for manual order events.¹⁷⁸ The Participants continue to believe that their proposed approach to manual order events is appropriate.¹⁷⁹

IV. IMPLEMENTATION TIMELINES AND CONSIDERATIONS

A. Implementation Support

1. CAT Reporter Support

One commenter urges the Participants to include in the Plan appropriate levels of support to CAT Reporters during CAT testing, onboarding and after commencement of reporting.¹⁸⁰ The Participants recognize that appropriate support for CAT Reporters is important to the success of the CAT, and intend for such support to be available.¹⁸¹ Based on discussions with the Bidders, the Participants believe that the Bidders will have the capability to provide such support as necessary, including scaling the level of support up or down based on periodic spikes in call volume. The Bidders will be able to provide additional capacity to support increased volumes. The CAT Help Desk staff will be trained to support CAT Reporters as needed. This may

¹⁷⁶ FIF Letter at 9, 82-83; Data Boiler Letter at 24; Thomson Reuters Letter at 8.
¹⁷⁷ Supplemental Letter from SROs to Brent J. Fields, SEC (Sept. 1, 2015) (“Supplemental Exemptive Request Letter”).

¹⁷⁸ FIF Letter at 9, 79.

¹⁷⁹ Exemptive Request Letter at 32-37.

¹⁸⁰ FIF Letter at 13, 125-127.

¹⁸¹ Plan, Appendix D, Section 10.3 at Appendix D-40-41.

include, for example, training related to data access tools, data submission requirements, and customer support.

2. Validation Tools

One commenter recommends the adoption of a robust set of testing, validation and error correction tools “to quickly validate the initial and on-going implementation of CAT reports and corrections of any submitted CAT reports.”¹⁸² The Participants believe that a robust set of testing, validation and error correction tools for CAT Reporters is critical to the success of the CAT. Because the specific tools to be used will be dependent on the selection of the Plan Processor, the Participants have drafted the Plan to provide the Participants with flexibility in how they address validation tools. Nevertheless, the Participants have discussed validation tools with the Bidders and will consider the Bidders’ responses as part of the process of selecting the Plan Processor.

B. Implementation Timeline

1. Appropriate Implementation Time for Testing

Three commenters assert that the Plan does not allow sufficient time for thorough testing, not only for broker-dealers, but also for other third-party service providers, and, therefore, proposed adapting the implementation schedule to accommodate the availability of a testing environment earlier in the implementation cycle.¹⁸³ After analyzing their experience with testing timelines for other system changes, discussion with Bidders and other considerations, the Participants continue to believe that the Plan sets forth an achievable testing timeline.¹⁸⁴

2. Risk Mitigation Strategies

One commenter recommends including certain risk mitigation strategies, including acceptance tests, within the Plan.¹⁸⁵ The Participants believe that the risk mitigation strategies, including acceptance tests, will be a necessary part of promoting a successful implementation of the CAT. The Participants, however, believe that formulating specifics regarding risk mitigation strategies will depend on the selected Plan Processor and its solution. Therefore, the Participants believe that such risk mitigation strategies will be addressed as a part of the agreement between the Plan Processor and the CAT LLC, and implemented thereafter.

3. Implementation Timeline Based on Technical Specifications

Three commenters suggest that a reasonable timeframe for implementation can only be determined once the Technical Specifications have been published and reviewed.¹⁸⁶ In addition,

¹⁸² FIF Letter at 13, 127.

¹⁸³ SIFMA Letter at 24; FIF Letter at 3, 37-41; Thomson Reuters Letter at 6.
¹⁸⁴ Plan, Appendix C, Section C.10 at Appendix C-99-105.

¹⁸⁵ FIF Letter at 3, 40-41.

¹⁸⁶ Thomson Reuters Letter at 6; SIFMA Letter at 23-24; FSR Letter at 10.

one commenter stated that the Plan should include a specific requirement to amend the Plan's implementation timelines based on a review of the Technical Specifications.¹⁸⁷

Although the Participants believe that, as a practical matter, the Technical Specifications will be important drivers of the implementation timeline, the Participants also note that SEC Rule 613(a)(3) mandates certain compliance dates. For example, SEC Rule 613 requires that the Participants begin to report order-related data to the CAT within one year after the effectiveness of the Plan, and requires Industry Members (other than Small Industry Members) to report order-related data to the CAT within two years effectiveness of the Plan. Accordingly, the implementation timelines currently set forth in the Plan reflect these requirements.¹⁸⁸ Any changes to the deadlines set forth in SEC Rule 613 would require the SEC to issue an exemption from those deadlines for the Participants and the Industry Members (as applicable). Accordingly, absent an exemption, the implementation timelines set forth in the Plan must reflect the deadlines dictated by SEC Rule 613. Delaying the assessment and definition of implementation milestones until the availability of the Technical Specifications, rather than maintaining milestones relative to the requirements of SEC Rule 613, would jeopardize the ability of the Participants to meet their obligations under SEC Rule 613.

The Participants believe, however, that the steps leading up to the compliance dates set forth in SEC Rule 613 can be tailored to the Technical Specifications. Therefore, the Plan indicates "Projected Completion Dates" for such interim steps, thereby leaving room to accommodate specific developments related to the Technical Specifications with regard to those interim steps. Finally, the Participants expect the Plan Processor to provide more specific guidance as to steps toward implementation with the Technical Specifications. To the extent that such guidance would require an amendment to the Plan's implementation timelines, the Participants propose to amend the Plan accordingly.

C. Technical Specifications

1. Incorporating Certain Requirements in the Technical Specifications in Plan

Two commenters suggest that the Plan be amended to include various items of the Technical Specifications within the Plan. Such items include guidelines to the CAT interface, guidelines for new data requirements, such as customer information and options data reporting, and guidelines for reporting under specific trading scenarios.¹⁸⁹ The Participants believe that each of these items will be developed by the Plan Processor, once the Plan Processor is selected after the Plan is approved. Moreover, the Participants believe that these items are better suited for the Technical Specifications rather than the Plan itself.

¹⁸⁷ Thomson Reuters Letter at 6.

¹⁸⁸ Plan, Appendix C, Section C.10 at Appendix C-99-105.

¹⁸⁹ Thomson Reuters Letter at 5; UnaVista Letter at 2.

2. Concurrent Drafting of Participant and Industry Member Technical Specifications

Two commenters recommend that the Participant and Industry Member specifications should be developed concurrently.¹⁹⁰ Another commenter recommended that the “[s]pecification review process for both the customer information specification as well as the submission of order data [should] begin two months after Processor Selection, lasting nine months.”¹⁹¹ As the commenter notes, under the proposed Plan, the CAT Reporter specifications will be developed after Participant specifications and concurrent with the start of Participant reporting.¹⁹²

The Participants recognize the importance of the development process for the Technical Specifications for all CAT Reporters. Accordingly, the Participants’ discussions with the Bidders have made the Technical Specifications a high priority. Nevertheless, in light of various practical issues raised by the pending decisions regarding the selection of the Plan Processor, the Participants do not propose to amend the Plan to reflect an expedited schedule for the Industry Member Technical Specifications. Nevertheless, the Plan would not prohibit the Plan Processor from concurrently developing the Participant and Industry Member Technical Specifications.

3. Iterative Drafts

Two commenters recommend that the implementation schedule be designed to provide iterative interactions between broker-dealers and the Plan Processor in terms of developing and executing final system specifications.¹⁹³ One of the two commenters emphasizes that the implementation timeline should include two iterative review cycles.¹⁹⁴

The Participants believe that iterative interactions regarding the Technical Specifications would be beneficial in optimizing the efficiency and quality of the final Technical Specifications. Accordingly, Appendix C of the Plan, as currently drafted, contemplates the publication of “iterative drafts of the Technical Specification(s)” “[a]s needed before publishing the final document” with regard to the submission of order data.¹⁹⁵ This formulation permits iterative drafts, as necessary, but does not require more than one draft if it is not necessary. Therefore, the Participants believe that the Plan adequately addresses the commenters’ concerns.

4. Rule Filings

One commenter recommends that the Participants submit any new broker-dealer requirements set forth in the Technical Specification through the rulemaking process under Rule 608 of Regulation NMS under the Exchange Act, and that any rule filing related to the CAT

¹⁹⁰ FIF Letter at 36-37; SIFMA Letter at 24.

¹⁹¹ Thomson Reuters Letter at 5.

¹⁹² Plan, Appendix C, Section C.10 at Appendix 99-101.

¹⁹³ SIFMA Letter at 2 and 24; FIF Letter at 4, 7 and 37.

¹⁹⁴ FIF Letter at 4 and 37.

¹⁹⁵ Plan, Appendix C, Section C.10 at Appendix C-100-101.

should be filed and approved prior to the final CAT implementation date to permit market participants to implement the necessary system and coding changes.¹⁹⁶

The Participants do not intend to file the Technical Specifications as part of or a change to the Plan pursuant to Rule 608 of Regulation NMS. The Participants do not believe, as a general matter, that the Technical Specifications are required to be filed with the SEC pursuant to Rule 608. For example, technical specifications for other NMS plans, such as the Tick Size Pilot Plan,¹⁹⁷ have not been filed with the SEC. To the extent that a change to the Technical Specifications is significant enough to require a change to the Plan, then such an amendment to the Plan would be filed pursuant to Rule 608. Moreover, as a practical matter, requiring the Technical Specifications and the changes thereto to be filed pursuant to Rule 608 may introduce significant delays in the process of developing the Technical Specifications.

V. DATA ACCESS

A. Regulatory Access

1. Regulatory Use of Data

Two commenters express concern that there are insufficient details in the Plan regarding how regulators plan to access and analyze CAT Data.¹⁹⁸ The Participants, however, believe that the Plan provides sufficient detail to allow for both simple and complex analyses of the CAT Data. In particular, Section 8 of Appendix D of the Plan describes various tools that will be used for surveillance and analytics. In addition, the Plan states that the Plan Processor will provide an open application programming interface (“API”) that allows regulators to use analytical tools (*e.g.*, R, SAS, Python, Tableau) and permit regulators to use ODBC/JDBC drivers to access the CAT Data.¹⁹⁹ Moreover, based on discussions with the Bidders, the Participants believe that the Plan Processor will provide sufficient data access tools as well as analytical tools in the CAT for the Participants to satisfy their obligations as set forth in SEC Rule 613(f) to “develop and implement a surveillance system, or enhance existing surveillance systems, reasonably designed to make use of the consolidated information contained in the consolidated audit trail.” Regulators expect surveillance methods and techniques to vary over time and across Participants. Different SRO groups (*e.g.*, options exchanges, SEC, FINRA, equities exchanges, exchange groups) will have different approaches. Finally, the Participants believe that it would be counterproductive from a regulatory oversight perspective to provide significant detail regarding the surveillance processes of the regulators.

¹⁹⁶ Fidelity Letter at 3.

¹⁹⁷ Securities Exchange Act Release No. 74892 (May 6, 2015), 80 Fed. Reg. 27514 (May 13, 2015).

¹⁹⁸ SIFMA Letter at 31-32; Data Boiler at 26. *See also* ICI Letter at 8, 10 (supporting use of CAT Data for regulatory and surveillance use only, and stating that Customer Identifying Information should not be used for commercial purposes even if such use is permitted by applicable law).

¹⁹⁹ Plan, Appendix D, Section 8.2 at Appendix D-29.

2. Real-Time Processing

One commenter recommends that the CAT support real-time ingestion, processing and surveillance.²⁰⁰ The Participants do not believe that the CAT should support real-time oversight processes, as SEC Rule 613 prohibits the Plan from requiring real-time reporting.²⁰¹ The Participants note, however, that the Participants may conduct real-time surveillance of their own markets using existing and proprietary surveillance systems.

3. Uniform Formats

One commenter suggests that the Plan require the use of pre-defined extract templates and uniform global formats such as ISO 20022 to support scalability and reduce costs while allowing for exchange of data between both national and global regulators.²⁰² The Participants contend that data extracts should use common industry formats, as required in the Plan. Moreover, the Participants expect that the requests from regulators other than those regulators permitted access to the CAT will be on an ad hoc basis pursuant to applicable information sharing agreements, and would be accommodated on a case-by-case basis.

4. Commercial Use of Data

One commenter states that the Participants should not be allowed to commercialize any of the CAT Data and the Plan should make that point clear.²⁰³ The commenter states that the Plan is inconsistent on the Participants' commercial use of data. Specifically, the commenter notes that Section 6.5(f)(i)(A) of the Plan states that each SRO may use "the CAT Data it reports to the Central Repository for regulatory, surveillance, commercial or other purposes as permitted by applicable law, rule or regulation," and Section 6.5(h) permits a Participant to "use the Raw Data it reports to the Central Repository for regulatory, surveillance, commercial or other purposes as otherwise not prohibited by applicable law, rule or regulation."²⁰⁴ The Participants continue to believe that it is appropriate for the Plan to permit the Participants to use their Raw Data for commercial or other purposes. Therefore, the Participants do not propose to prohibit such use. Nevertheless, to address the commenter's consistency concern, the Participants propose to use the term "Raw Data" in place of the term "CAT Data" in Section 6.5(f)(i)(A) of the Plan.

B. Reporter Access

1. Bulk Data Exports

Two commenters recommend that the Plan permit Industry Member CAT Reporters to access their own CAT Data through bulk data exports.²⁰⁵ Another commenter recommends

²⁰⁰ Data Boiler Letter at 1.
²⁰¹ See, e.g., Rule 613 Adopting Release at 45724.
²⁰² UnaVista Letter at 4.
²⁰³ SIFMA Letter at 31.
²⁰⁴ *Id.*
²⁰⁵ FIF Letter at 1, 9, 60-61; Thomson Reuters Letter at 8.

permitting broker-dealers to access, export and use their data within the Central Repository at no charge.²⁰⁶ One commenter suggested that independent software vendors have access to the CAT Data on their Industry Member CAT Reporter client's behalf.²⁰⁷ Another commenter suggests that access to CAT Data be restricted to SEC and SRO employees with regulatory and oversight responsibilities for security reasons.²⁰⁸

During the development of the Plan, the SROs considered whether to provide Industry Member CAT Reporters with access to their own data through bulk data exports. Based on the data security and cost considerations, the Participants determined that such access was "not a cost-effective requirement for the CAT."²⁰⁹ Accordingly, the Plan was drafted to state that "[n]on-Participant CAT Reporters will be able to view their submissions online in a read-only, non-exportable format to facilitate error identification and correction."²¹⁰

In light of the comments and further evaluation of the issue, however, the Participants believe that there may be merit to providing Industry Member CAT Reporters and their vendors with bulk access to the CAT Reporters' own unlinked CAT Data. For example, the Participants believe that such access may facilitate the CAT Reporters' error analysis and internal surveillance and that it may expedite the retirement of duplicative reporting systems. Providing bulk data access, however, also raises a variety of operational, security, cost and other issues related to the CAT. For example, the Participants would need to address this additional function with the Plan Processor. In addition, the inclusion of this functionality would create additional burdens on the CAT and the Plan Processor and, therefore, may require additional funding from CAT Reporters for such access to the CAT Data. Therefore, the Participants will consider this issue once the CAT is operational.

2. Ownership of CAT Data

One commenter recommends amending the Plan to indicate that broker-dealers retain ownership rights in all data they report to the CAT.²¹¹ SEC Rule 613 does not address broker-dealer CAT Reporters' ownership rights with respect to the CAT Data, and the Participants do not believe that it is appropriate to address such ownership rights in the Plan.

C. Public Access

One commenter recommends making certain delayed CAT Data available to the public,²¹² while one commenter strongly opposes academic access to the CAT.²¹³ The Participants do not plan to make the CAT Data available for use by the public, such as academics

²⁰⁶ KCG Letter at 7-8.

²⁰⁷ Letter from Gary Stone, Bloomberg, L.P., to Brent J. Fields, SEC (July 18, 2016) ("Bloomberg Letter") at 7.

²⁰⁸ Fidelity Letter at 4.

²⁰⁹ Plan, Appendix C, Section C.11(b) at Appendix C-112.

²¹⁰ Plan, Appendix D, Section 10.1 at Appendix D-38.

²¹¹ KCG Letter at 7-8.

²¹² Data Boiler Letter at 1.

²¹³ MFA Letter at 6.

and other third parties, at this time. The Participants recognize that there may be certain benefits to this type of expanded access, such as promoting academic evaluations of the economic costs and benefits of regulatory policy. Nevertheless, the Participants believe that the privacy and security concerns raised by such public access outweigh the potential benefits. This conclusion is in line with the SEC's statements in the adopting release for SEC Rule 613 that, in light of the privacy and security concerns, "it is premature to require that the NMS plan require the provision of data to third parties."²¹⁴

VI. ERROR RATES

A. Definition of Error Rate

One commenter urges the Participants to more specifically define the term "Error Rate," as used in the Plan, including by indicating the timeframe to be measured and whether all errors are treated equally.²¹⁵ Another commenter suggested that the Error Rate should be based on a rolling average over a designated period of time to minimize anomalies and industry-wide problems, and that the Plan should make distinctions between errors of lesser or greater concern for regulatory purposes.²¹⁶ Another commenter queried whether there will be a minimum value of reports submitted before error rate calculations take place, and whether the error rate would cover all submission data types.²¹⁷

The Plan defines the term "Error Rate" in Section 1.1 of the Plan by referring to the definition of "error rate" as set forth in SEC Rule 613(j)(6). SEC Rule 613(j)(6) defines the term "error rate" to mean "the percentage of reportable events collected by the central repository in which the data reported does not fully and accurately reflect the order event that occurred in the market." Therefore, the Participants intend to keep the definition of Error Rate the same as the SEC's definition in SEC Rule 613.²¹⁸

B. Initial Error Rates: 5% and 1%

Based on the industry's experience with OATS reporting, two commenters agree with the proposed initial Error Rate of 5%, which will be phased down to 1% over a four-year period.²¹⁹ Another commenter states that the SEC should tolerate a very low error rate from the outset and treat all CAT Reporters equally.²²⁰ However, two other commenters stated that they did not have sufficient information to determine whether the proposed Error Rates were appropriate.²²¹ As a result, these commenters recommended that the Error Rates be reviewed during the testing

²¹⁴ Rule 613 Adopting Release at 45781.

²¹⁵ SIFMA Letter at 6.

²¹⁶ FIF Letter at 51, 57-58.

²¹⁷ UnaVista Letter at 4.

²¹⁸ The Participants also emphasize that the Error Rate is intended to gauge the performance of the CAT. In contrast, the Compliance Thresholds are intended to assist individual CAT Reporters in evaluating their CAT reporting performance.

²¹⁹ FSR Letter at 9; UnaVista Letter at 3-4.

²²⁰ Better Markets Letter at 9.

²²¹ SIFMA Letter at 6; FIF Letter at 50-54.

period for the CAT, through and during the initial months of the launch period and after a year of reporting to determine the appropriate Error Rates based on actual experience with the CAT.²²² Another commenter queried when the Error Rates will be analyzed.²²³

To satisfy the requirement in SEC Rule 613 to set forth a maximum error rate in the Plan, the Participants not only performed a detailed analysis of current and historical OATS error rates,²²⁴ but also considered the magnitude of the new reporting requirements and the fact that many CAT Reporters had never previously been obligated to report data for audit trail purposes. The Participants continue to believe that this analysis, which is described in detail in the Plan,²²⁵ appropriately analyzes the available comparable data and issues raised by the CAT. Therefore, the Participants intend to keep the proposed Error Rates.

The Participants, however, agree with the commenters that actual experience with the CAT itself will provide more accurate and applicable data for determining the appropriate Error Rate. Therefore, the Plan provides for various opportunities for the Error Rate to be reevaluated and reset. Specifically, the Plan states that “[t]he Operating Committee shall set and periodically review a maximum Error Rate for data reported to the Central Repository.”²²⁶ In addition, the Plan states the Error Rate will be “review[ed] and reset, at least on an annual basis.”²²⁷ Therefore, the initial Error Rate will be reevaluated within a year of the approval of the Plan. Moreover, the Plan indicates that the initial Error Rate of 5% is subject to quality assurance testing performed prior to launch.²²⁸ Therefore, the Participants also will evaluate whether 5% remains the appropriate Error Rate after the quality assurance testing has been completed. Finally, the Plan states that “[p]eriodically, the Plan Processor will analyze reporting statistics and Error Rates and make recommendations to the Operating Committee for proposed changes to the maximum Error Rate.”²²⁹

C. Future Error Rates

Two commenters recommend that Error Rates be reviewed when there are significant CAT-related changes, including updates to the CAT (*e.g.*, new security classes)²³⁰ or significant updates to applicable regulations.²³¹ As discussed in the response above, the Plan states that the Error Rate will be reviewed and reset on an annual basis, and the Participants periodically will receive reporting statistics and Error Rates that may alert the Participants to a need for a revised Error Rate. Accordingly, the Participants continue to believe that the Plan provides an

²²² SIFMA Letter at 6; FIF Letter at 51-52, 55-56.

²²³ UnaVista Letter at 4.

²²⁴ Several commenters recognized OATS as a relevant comparable system for this analysis. *See* FIF Letter at 54-55; SIFMA Letter at 6-7; FSR Letter at 9.

²²⁵ Plan, Appendix C, Section A.3(b) at Appendix C-23-24.

²²⁶ Plan, Section 6.5(d)(i).

²²⁷ Plan, Appendix C, Section A.3(b) at Appendix C-22. One commenter stated that the annual reassessment of error rates is reasonable. FIF Letter at 57.

²²⁸ Plan, Appendix C, Section A.3(b) at Appendix C-22.

²²⁹ Plan, Appendix C, Section A.3(b) at Appendix C-22.

²³⁰ FIF Letter at 52, 55.

²³¹ UnaVista Letter at 4.

appropriate process for addressing new developments in the calculation of the appropriate Error Rate.

Moreover, the Participants believe that the Plan requires appropriate change management processes, which includes testing of changes to the functionality and infrastructure of the CAT and review and approval of change by the Operating Committee. The Participants expect that such a robust change management process would minimize the effect of changes on Error Rates.

D. Error Rate based on Post-Correction Data

Four commenters recommend that Error Rates be calculated based on data that is corrected within the error correction period as opposed to at the point of the initial submission of data.²³² The Participants continue to believe that the Error Rate should be based on pre-correction data. Such a standard is intended to encourage CAT Reporters to submit accurate data initially and to reduce the number of corrections. Such an approach allows for regulators to access accurate data in a more timely manner and it reduces the demands on the CAT.

E. Different Error Rates for Different Security Types

Two commenters recommend that the Error Rate should vary based on the type of security. Specifically, one commenter recommends that the Error Rate should be specific to equities, options and customer data rather than a composite score based on each input.²³³ Similarly, another commenter recommended the 5%/1% Error Rate should only apply to equities reporting.²³⁴ SEC Rule 613(e)(6)(i) requires that the Plan specify “a maximum error rate to be tolerated by the central repository for any data reported pursuant to paragraph (c)(3) and (c)(4).” Therefore, the Participants believe that the Plan must provide one overall Error Rate. However, the Participants believe that it is important to evaluate any differences in error rates related to different securities. Accordingly, the Plan requires the Plan Processor to provide the Operating Committee regulatory reports regarding Error Rates by symbol type (*e.g.*, ETF, Index).²³⁵

F. Grace Period for Error Rate

Two commenters recommend that CAT Reporters should be given a compliance grace period for operating within the designated Error Rate following the implementation of the CAT – that is, that the CAT Reporters should not be required to meet the Error Rate during the initial implementation of the CAT.²³⁶

The Participants do not agree that such a grace period should be permitted. SEC Rule 613(g) requires the Participants to enforce compliance by its members with the Plan, and that each member of a Participant comply with the Plan. Accordingly, the Participants believe that

²³² SIFMA Letter at 7; FSR Letter at 9; FIF Letter at 3, 51, 56; Thomson Reuters Letter at 6.

²³³ SIFMA Letter at 6.

²³⁴ FSR Letter at 9.

²³⁵ Plan, Section 6.1(o)(v).

²³⁶ SIFMA Letter at 6,7; UnaVista Letter at 4.

they should have the ability enforce compliance with the Plan, as necessary, at all times that the Plan is in operation.

The Participants note, however, that a CAT Reporter's performance with respect to the Compliance Thresholds related to Error Rates will not signify, as a matter of law, that the CAT Reporter has violated SEC Rule 613 or the rules of any Participant concerning the CAT.²³⁷ Instead, the Compliance Thresholds related to error rates are intended to be used for further review or investigation as necessary.

In addition, the Participants note that the Plan provides CAT Reporters with a variety of methods to minimize their respective error rates. For example, the Plan Processor will provide the CAT Reporters with various test environments and support for different types of testing, which can help minimize errors prior to the commencement of the operation of the CAT.²³⁸ In addition, the Plan provides for various tools to facilitate error correction after operation of the CAT has begun, including a web based portal to view and correct errors, daily error reports, auto correction of identified errors where possible, bulk submission of corrected records, and user support.²³⁹

G. Report Cards

Two commenters emphasize the value of providing detailed error reporting statistics to CAT Reporters. One commenter encourages the Plan Processor to "provide report cards to CAT Reporters as a crucial tool for firms to evaluate their progress and understand how they compare to their peers."²⁴⁰ Another notes that detailed error reporting statistics for CAT Reporters will assist in minimizing the error rate over time.²⁴¹ The Participants agree with these recommendations, and therefore state in the Plan that:

(1) the Plan Processor will provide CAT Reporters with their error reports as they become available and daily statistics will be provided after data has been uploaded and validated by the Central Repository; (2) error reports provided to CAT Reporters will include descriptive details as to why each data record was rejected by the Central Repository; and (3) on a monthly basis, the Plan Processor will produce and publish reports detailing performance and comparison statistics, similar to the Report Cards published for OATS presently, which will enable CAT Reporters to identify how they compare to the rest of their industry peers and help them assess the risk related to their reporting of transmitted data.²⁴²

²³⁷ Plan, Appendix C, Section A.3(b) at Appendix C-22.

²³⁸ See Plan, Appendix D, Section 1.2 at Appendix D-2.

²³⁹ See Plan, Appendix D, Section 10 at Appendix D-35-42.

²⁴⁰ SIFMA Letter at 7.

²⁴¹ FIF Letter at 52.

²⁴² Plan, Appendix C, Section A.3(b) at Appendix C-22. See also Plan, Appendix D, Section 7.3 at Appendix D-23, Section 10.1 at Appendix D-36, D-39, and Section 10.4 at Appendix D-41.

H. Pre-Validation Checks

One commenter notes that a CAT Reporter's performance of pre-validation checks prior to submitting data to the CAT can be an effective way to preserve data integrity and accuracy.²⁴³ The Plan currently does not discuss pre-validation checks. However, in recognition of their potential value in ensuring accurate data submissions, the SROs have discussed with the Bidders various tools that will be made available to CAT Reporters to assist with their data submission, including pre-validation checks. Examples of pre-validation checks and support under consideration include testing of receiving real time feedback on breaks during the onboarding process, and validation of bulk submissions against data format rules.

VII. PRIMARY MARKET TRANSACTIONS

A. Top Account and Sub-Account Allocations

Two commenters agree that, if Primary Market Transactions are included in the CAT, then only the sub-account allocations should be included; the top account allocation should be excluded.²⁴⁴ In contrast, one commenter supported providing both top and sub-account allocations to the CAT.²⁴⁵

The Participants continue to support the inclusion in the CAT of sub-account allocations in Primary Market Transactions, but not top account allocations. As required by SEC Rule 613,²⁴⁶ the Participants completed a feasibility and cost-benefit analysis of allocations in Primary Market Transactions.²⁴⁷ Based on the analysis, the Participants concluded that the reporting of sub-account allocations would be feasible, provide a regulatory benefit and represent a limited additional cost burden to CAT Reporters. In contrast, however, the Participants concluded that reporting top account allocations would likely impose significant costs to CAT Reporters while only providing a marginal additional regulatory benefit over sub-account allocation data.

B. Timing of Implementation

Two commenters recommend that no reporting of data regarding Primary Market Transaction allocations be required during the initial implementation phase of the CAT.²⁴⁸ One of these two commenters noted specifically that such reporting should be delayed until CAT regulatory and surveillance requirements are defined and duplicative reporting systems are retired.²⁴⁹

²⁴³ UnaVista Letter at 4.

²⁴⁴ SIFMA Letter at 36; FIF Letter at 118-120.

²⁴⁵ Hanley Letter at 3-5. This commenter also recommends including in the CAT primary market transactions for non-NMS securities, such as debt, and notes that the time stamps on primary market transactions need not be as granular as milliseconds. *Id.* at 6. The Participants will consider these types of issues after the Effective Date of the Plan.

²⁴⁶ SEC Rule 613(a)(1)(vi).

²⁴⁷ See Plan, Appendix C, Section A.6 at Appendix C-36.

²⁴⁸ SIFMA Letter at 36; FIF Letter at 119.

²⁴⁹ SIFMA Letter at 36.

The Participants have analyzed the feasibility, benefits and costs for broker-dealers to report allocations in Primary Market Transactions for NMS securities, as required by SEC Rule 613(a)(1)(vi).²⁵⁰ The Participants, however, have not yet determined a timeline for reporting such allocations. Nevertheless, at a minimum, the Participants agree that reporting data regarding allocations in Primary Market Transactions should not be required during the initial implementation phase of the CAT.

Pursuant to SEC Rule 613(i), the Plan requires that the Participants provide to the SEC a document outlining how the Participants could incorporate into the CAT information with respect to Primary Market Transactions for non-NMS securities, as well as other types of securities, within six months after the Effective Date of the Plan, including an implementation timeline.²⁵¹ The Participants propose to consider a timeline for reporting allocations in Primary Market Transactions in NMS Securities at the sub-account level in connection with completing the expansion document, if the Participants determine to include such allocations in the CAT.

C. Definition of Primary Market Allocation

One commenter requested that the Plan clarify “what is meant by primary market transaction ‘allocations’” and whether it “references the final step in the allocation process, *i.e.*, when securities purchased in a primary market transaction are placed into a customer’s account, and does not include the preliminary internal allocations made during the book-building process.”²⁵²

As noted in the Plan, as a general matter, an allocation in a Primary Market Transaction includes both sub-account and top account allocations. The Plan states:

Primary Market Transactions generally involve two phases that implicate the allocation of shares. The “book building” phase involves the “process by which underwriters gather and assess investor demand for an offering of securities and seek information important to their determination as to the size and pricing of an issue.” This process may involve road shows to market an offering to potential investors, typically institutional investors, including the discussion of the prospective issuers, and its management and prospects. The book building phase also involves efforts by the underwriter to ascertain indications of interest in purchasing quantities of the underwritten securities at varying prices from potential investors. Using this and other information, the underwriter will then decide how to allocate IPO shares to purchasers. The Participants understand that these are so-called “top account” allocations – allocations to institutional clients or retail broker-dealers, [which] are conditional and may fluctuate until the offering syndicate terminates. Sub-account allocations occur subsequently, and are made by top account institutions and broker-dealers prior to settlement. Sub-account allocations represent the allocation of IPO shares to the actual account

²⁵⁰ Plan, Appendix C, Section A.6 at Appendix C-36.

²⁵¹ Plan, Section 6.11.

²⁵² SIFMA Letter at 36.

receiving the shares and are based on an allocation process that is similar to secondary market transactions.

However, as discussed above in Section A, the Participants support the inclusion of sub-account allocations in Primary Market Transactions, but not top account allocations.

VIII. DISASTER RECOVERY AND BUSINESS CONTINUITY

A. Availability of Technical Environment

One commenter recommends that the Participants amend the Plan to require the Plan Processor to provide 24x7 support for production and test environments.²⁵³ As proposed, the Plan requires that the industry test environment “contain functionality to support industry testing, including . . . [m]inimum availability of 24x6.”²⁵⁴ The Participants plan to discuss with the Bidders the impact of requiring test environments to be available 24x7, rather than 24x6. After discussing the issues with the Bidders, the Participants will consider whether to implement this change.

B. Frequency of Business Continuity Tests

One commenter requests clarification that the bi-annual disaster recovery test of CAT operations at its secondary facility would be conducted twice a year, rather than once every two years.²⁵⁵ The Participants confirm that such tests are required twice a year.

IX. PLAN PROCESSOR SELECTION

A. Acceleration of Plan Processor Selection

One commenter emphasize that the choice of Plan Processor will have a significant effect on the implementation costs, the retirement of systems, CAT policies and procedures and other aspects related to the CAT.²⁵⁶ Therefore, to minimize the implementation uncertainty, the commenter recommends that the Participants accelerate the selection of the Plan Processor.²⁵⁷

The Participants believe that the selection of the Plan Processor will determine the CAT solution as well as significantly impact implementation issues and related costs. The Participants, however, do not believe that it is feasible to accelerate the selection of the Plan Processor prior to the SEC’s approval of the Plan. Until the Plan is finalized and approved by the SEC, the requirements of the CAT could change, which could impact the selection of th Plan

²⁵³ FIF Letter at 13, 123.

²⁵⁴ Plan, Appendix D, Section 1.2 at Appendix D-3. *See also* Plan, Appendix C, Section D.12(h) at Appendix C-123 (stating that “the CAT provide a dedicated test environment that is functionally equivalent to the production environment and available on a 24x6 basis”).

²⁵⁵ FSI Letter at 5.

²⁵⁶ Thomson Reuters Letter at 4.

²⁵⁷ *Id.*

Processor.²⁵⁸ Moreover, SEC Rule 613 ensures that the selection of the Plan Processor will occur without delay once the SEC approves the Plan. SEC Rule 613 requires the selection of the Plan Processor within two months after effectiveness of the Plan.²⁵⁹

B. Selection of FINRA as Plan Processor

One commenter recommends the selection of FINRA as the Plan Processor, given FINRA's current experience and comparable existing systems.²⁶⁰ The Participants determined that utilizing a competitive bidding process to select the Plan Processor would be the most appropriate way to promote an innovative and efficient CAT solution.²⁶¹ Pursuant to that process, the Participants have reduced the number of Bidders to three Shortlisted Bidders. The final selection of the Plan Processor will occur within two months of the effectiveness of the Plan.

C. Plan Processor Evaluation

One commenter recommends that the Commission consider re-opening the Plan Processor's agreement with the CAT LLC every five years and to provide a process for public input on that re-evaluation to ensure that the Plan remains state-of-the-art.²⁶²

The Participants agree that it is important to ensure that the CAT solution remains effective and efficient going-forward. Accordingly, the Participants have proposed a process for regularly reviewing the performance of the Plan Processor throughout the term of the Plan Processor's agreement and for modifying the Plan if necessary to avoid an outdated CAT solution, among other reasons. As set forth in the Plan, the Operating Committee will review the Plan Processor's performance under the Plan at least once each year, or more often than once each year upon the request of two Participants that are not Affiliated Participants.²⁶³ In addition, the Plan sets forth the process for removing the Plan Processor. Specifically, "[t]he Operating Committee, by Supermajority Vote, may remove the Plan Processor from such position at any time."²⁶⁴ In addition, "[t]he Operating Committee may, by Majority Vote, remove the Plan Processor from such position at any time if it determines that the Plan Processor has failed to perform its functions in a reasonably acceptable manner in accordance with the provisions of this [Plan]."²⁶⁵ If the Participants were to vote to remove the Plan Processor, the Operating Committee would select a new Plan Processor through a competitive bidding process.²⁶⁶

²⁵⁸ The Participants note that the Selection Plan contemplates the selection of the Plan Processor after the approval of the Plan. National Market System Plan Governing the Process of Selecting a Plan Processor and Developing a Plan for the Consolidated Audit Trail, Section VII.

²⁵⁹ SEC Rule 613(a)(3)(i).

²⁶⁰ Anonymous Letter at 1, 19-20.

²⁶¹ Plan, Section VI.

²⁶² Better Markets Letter at 7.

²⁶³ Plan, Section 6.1(n).

²⁶⁴ Plan, Section 6.1(q).

²⁶⁵ Plan, Section 6.1(r).

²⁶⁶ Plan, Section 6.1(t).

X. SECURITY

A. Information Security Program Detail Generally

A number of commenters recommend, as a general matter, that the Plan include additional detail concerning the information security and confidentiality controls of the CAT system. One commenter notes that the “CAT NMS Plan lacks proper guidance concerning the requirements for security and confidentiality controls of the CAT system.”²⁶⁷ Another commenter states that the proposed Plan “does not provide enough granularity related to actual controls, service levels and technical support that will be implemented by the Plan Processor.”²⁶⁸ Still others urge the Commission to require the Participants to share more details about the data loss prevention, business continuity planning and cybersecurity incident response plans of the CAT.²⁶⁹

SEC Rule 613 requires that the Plan discuss the security and confidentiality of information reported to the Central Repository.²⁷⁰ More specifically, SEC Rule 613(e)(4) requires that the Plan include policies and procedures to ensure the confidentiality of all information provided to the Central Repository by requiring that (1) all Plan sponsors and their employees, as well as employees of the Central Repository, agree to use appropriate safeguards to ensure the confidentiality of such data and agree not to use such data for any purpose other than surveillance and regulatory purposes (provided that Plan sponsors may use data reported to the Central Repository for regulatory, surveillance, commercial or other purposes as otherwise permitted by applicable law, rule or regulation); (2) each Plan sponsor adopt and enforce rules requiring information barriers between regulatory staff and non-regulatory staff with regard to access and use of data in the Central Repository, and permit only persons designated by Plan sponsors to have access to the data in the Central Repository; (3) the Plan Processor develop and maintain a comprehensive information security program for the Central Repository, have a mechanism to confirm the identity of all persons permitted to access the data and maintain a record of all instances where such persons access the data; and (4) Plan sponsors adopt penalties for non-compliance with any information security policies and procedures.

Moreover, in adopting SEC Rule 613, the Commission noted that the Plan is not required to set forth all details of the security and confidentiality policies and procedures required under the rule:

The Commission believes that an outline or overview description of the policies and procedures that would be implemented under the NMS plan submitted to the Commission for its consideration would be sufficient to satisfy the requirement of the Rule. The Commission believes it is important for the NMS plan submitted to the Commission to establish the fundamental framework of these policies and procedures, but recognizes the utility of allowing the plan sponsors flexibility to

²⁶⁷ FIF Letter at 131.

²⁶⁸ FSR Letter at 6.

²⁶⁹ Fidelity Letter at 4; MFA Letter at 5-8.

²⁷⁰ SEC Rule 613(a)(iv).

subsequently delineate them in greater detail with the ability to make modifications as needed.²⁷¹

Thus, the Plan is only required to provide an outline or overview of the information security and confidentiality policies and procedures.

Each of the requirements of SEC Rule 613 are set forth in the Plan. Section 6.12 of the Plan requires the Plan Processor to develop and maintain a comprehensive information security program for the central repository, to be approved and reviewed at least annually by the Operating Committee. Appendix D of the Plan discusses the fundamental framework of this program, including (1) appropriate solutions and controls to ensure data confidentiality and security during all communication between CAT Reporters and Data Submitters and the Plan Processor, data extraction, manipulation and transformation, loading to and from the Central Repository and data maintenance by the CAT System; (2) security controls for data retrieval and query reports by Participants and the SEC; and (3) appropriate tools, logging, auditing and access controls for all components of the CAT System.²⁷²

Other aspects of data security and confidentiality that the Plan Processor must address in its comprehensive security plan include physical assets and personnel of the CAT, training of all persons who have access to the Central Repository, encryption, remote access to the CAT system, the handling of PII, data storage (including penetration testing and third party audits), and access to PII and other data, and breach management. The Plan also provides minimum industry standards that must be followed by the Plan Processor in developing and implementing the security and confidentiality policies and procedures for the Plan.²⁷³ As discussed in Appendix C to the Plan, the Participants included numerous questions to the Bidders requesting detailed information on their approaches to each of these data security issues.²⁷⁴ Thus, the Participants believe that the Plan provides sufficient detail on the framework of the information security and confidentiality policies and procedures that will govern the Plan. In addition, the Participants believe that publicly releasing too many details about the data security and information policies and procedures of the CAT system presents its own security concerns and is not advisable.

In response to commenters request for additional security information about the Plan, however, the Participants have attached as an Exhibit to this letter a high level description of the security requirements for the CAT.²⁷⁵ The Exhibit describes the architecture level controls, the program level controls and the data usage and regulator controls applicable to the CAT. The Plan Processor will apply these controls to its CAT solution.

²⁷¹ Rule 613 Adopting Release at 45782.

²⁷² Plan, Appendix D, Section 4 at Appendix D-10.

²⁷³ Plan, Appendix D, Section 4 at Appendix D-10-15.

²⁷⁴ Plan, Appendix C, Section A.4 at Appendix C-29-34.

²⁷⁵ See High Level CAT Security Requirements, Consolidated Audit Trail (*available at*

http://www.catnmsplan.com/web/groups/catnms/@catnms/documents/appsupportdocs/cat_nms_security_requirements_032416.pdf). This description has been posted on the CAT website throughout the comment period.

B. Industry Member Review of Plan Security Controls

Some commenters suggest that experts from Industry Members be permitted to review and provide feedback on the security controls, policies and procedures of the Plan Processor.²⁷⁶ The Participants do not believe that such a review is warranted for several reasons. First, as noted, each of the Bidders has provided information on the various data security issues discussed in the Plan. As a result, the Plan Processor will have more than sufficient information from which to formulate appropriate data security and information policies and procedures. Proposed policies and procedures will be subject to the review and approval of the Operating Committee. In addition, the Operating Committee intends to seek the views of the Advisory Committee, which consists of Industry Members of all types as well as academics, on such proposed data security policies and procedures. Therefore, and given the security concern noted above with respect to broad dissemination of data security and information policies, the Participants do not believe that it is necessary to allow Industry Members to review the security controls, policies and procedures of the Plan Processor.

C. User Access to the CAT Repository

Commenters also address the requirements for authorized users of the Central Repository. Commenters noted that the Plan Processor should require policies and procedures and/or training programs to ensure that all authorized users are properly educated and trained in cybersecurity best practices.²⁷⁷ Two commenters suggested that persons authorized to access the CAT repository should have to undergo comprehensive background checks.²⁷⁸ Others advocated using hierarchical, role-based user access controls,²⁷⁹ the ability of the Plan Processor to restrict the CAT Plan user's ability to view and manipulate CAT data,²⁸⁰ the use of system tools to detect abusive use of the CAT,²⁸¹ and the automatic deactivation of users who have not accessed the CAT repository for a specified period of time.²⁸²

The Plan states that the Plan Processor must develop and maintain policies and procedures reasonably designed to prevent, detect and mitigate the impact of unauthorized access or usage of data in the central repository. Such policies and procedures are required to include, at a minimum, (1) information barriers governing access to and usage of data in the CAT repository; (2) monitoring processes to detect unauthorized access to or usage of data in the Central Repository; and (3) escalation procedures in the event that unauthorized access to or usage of data is detected.²⁸³ As suggested by the commenters, a Role Based Access Control model must be used to permission users with access to different areas of the CAT System.²⁸⁴ The Plan Processor must log every instance of access to the Central Repository, provide the SEC

²⁷⁶ FIF Letter at 130; FSR at 2.

²⁷⁷ FIF Letter at 132; ICI Letter at 9 and UnaVista Letter at 4-5.

²⁷⁸ FSI Letter at 5; FSR Letter at 5.

²⁷⁹ UnaVista Letter at 4. *See also* Data Boiler Letter at 28 (segregation of duties).

²⁸⁰ ICI Letter at 8.

²⁸¹ Data Boiler Letter at 27.

²⁸² SIFMA Letter at 21.

²⁸³ Plan, Appendix D, Section 4.1.4 at Appendix D-12.

²⁸⁴ *Id.*

and the Participants with periodic lists of their respective users of the CAT, and the SEC and Participants must provide a report confirming that the list of users is accurate.²⁸⁵ The Plan also requires that passwords be stored according to industry best practices and be recovered by secure channels. Access to PII will be restricted and is required to be further secured by multiple-factor authentication.²⁸⁶ The Plan Processor will have discretion to consider additional controls on user access in formulating the data security policies and procedures for the CAT System, including, without limitation, deactivating dormant users who have not access the CAT System for a specified period of time.

Several commenters note that CAT Data should only be accessible within the CAT System, and should not be exported.²⁸⁷ One commenter notes that CAT Data should never be removed, duplicated or copied from the CAT other than to facilitate the elimination of duplicative regulatory systems or to provide Industry Members access to their own CAT Data.²⁸⁸ The commenter also states that the Plan Processor's systems should be "air-gapped" from the internet to eliminate access to the internet and/or any internal, non-CAT System used by the Plan Processor.²⁸⁹ One commenter suggests that PII should not be exported once submitted to and stored in the CAT.²⁹⁰ Other commenters similarly favor restricting the removal of CAT Data, and also noted that if the Commission permits the removal of CAT Data from the repository, the detailed security provisions of the Plan should apply to downloaded data.²⁹¹

SEC Rule 613 requires regulators to develop and implement a surveillance system, or enhance existing surveillance systems to make use of CAT Data. The Participants believe that regulators should have flexibility in designing such surveillance systems, including the ability to access and transfer data where necessary and consistent with appropriate data security safeguards. Such access must be via secure channels (*e.g.*, secure FTP, API or over encrypted lines) as required in the Plan.²⁹² The Plan also requires that Participants have appropriate policies and procedures in place to protect such data. Specifically, the Plan requires that Participants establish, maintain and enforce written policies and procedures reasonably designed to ensure the confidentiality of CAT Data.²⁹³ The Participants also believe that all regulators, including the SEC, should be obligated to establish security measures to protect the security and confidentiality of CAT Data for security purposes.²⁹⁴

²⁸⁵ Plan, Appendix D, Section 4.1.4 at Appendix D-13.

²⁸⁶ *Id.*; *see also* Data Boiler Letter at 29 (stating that the protection and security in the CAT is adequate); MFA Letter at 6 (recommending multiple factor authentication)

²⁸⁷ Fidelity Letter at 4.

²⁸⁸ SIFMA Letter at 20.

²⁸⁹ *Id.*

²⁹⁰ FSR Letter at 7-8.

²⁹¹ FSR Letter at 6 (stating that PII should be available to the Commission and Participants on a "need to know basis"); ICI Letter at 7.

²⁹² Plan, Appendix D, Section 4.1.1. at Appendix D-11.

²⁹³ Plan, Section 6.5(g).

²⁹⁴ *See* FIF Letter at 133-34 (noting that exclusion of SEC from safeguard requirement in the Plan is inappropriate without a description of safeguards that will be executed by the SEC); NYSE Letter at 3 (urging that policies and procedures governing use and security of CAT Data should apply equally to all users with access, including employees of the SEC).

D. Encryption of Data

Some commenters state that the CAT should use specific encryption technology for data in-transit, data at-rest and data in-use.²⁹⁵ Under the Plan, all CAT Data must be encrypted in flight using industry best practices. All PII data must be encrypted both at rest and in flight, and storage of unencrypted PII is not permissible. The Plan Processor must describe how PII encryption is performed and the key management strategy. CAT Data stored in a public cloud must be encrypted at rest. Non-PII CAT Data stored in a Plan Processor private environment is not required to be encrypted at rest.²⁹⁶

E. Additional Categories of Data

One commenter states that the categories of information in the Plan should be expanded beyond PII and non-PII data. Specifically, the commenter indicated that the Plan should be tailored to reflect the sensitivity of data that is commercially sensitive but not PII, and that CAT Data should be stored in a manner corresponding to the sensitivity of the Data.²⁹⁷

The Participants consider all CAT Data to be highly sensitive and therefore require the Plan Processor to develop and maintain a comprehensive information security program, including encryption, role-based access controls and the separation of PII into separate architecture. PII is, by its very nature, more sensitive than commercial information and thus warrants more stringent controls. However, given the required comprehensiveness of the information security program, the Participants do not believe that it is necessary to expand the categories of other CAT Data.

F. Breach Procedures

A number of commenters discuss the procedures that should be adopted by the Plan Processor in the event of a breach in CAT information security or confidentiality. For example, one commenter states that the Plan Processor should be required to describe specific procedures it will implement upon a breach of the CAT, including notifying Participants and Industry Members and allowing them to suspend CAT submissions temporarily in the event of an ongoing breach.²⁹⁸ The commenter also requests that the Plan require the notification of investors of a breach of the CAT, and include a process for reviewing data incidents to determine corrective actions to reduce the likelihood of a recurrence.²⁹⁹ Another commenter suggests that the Plan Processor be required to notify the Operating Committee, affected broker-dealers, federal and state law enforcement and other market participants of data breaches.³⁰⁰ Another commenter

²⁹⁵ FSR Letter at 5-6; Data Boiler Letter at 8; SIFMA Letter at 21.

²⁹⁶ Plan, Appendix D, Section 4.1.2 at Appendix D-11.

²⁹⁷ ICI Letter at 6.

²⁹⁸ FSI Letter at 4. This commenter also suggested that the Plan address various security deficiencies identified in an April 2016 GAO report that discussed the SEC's cybersecurity weaknesses. *Id.* at 5. *See also* MFA Letter at 9.

²⁹⁹ *Id.*; *see also* ICI Letter at 7-8.

³⁰⁰ SIFMA Letter at 21.

suggests that the Plan Processor and Participants report any data confidentiality or security breach to the Commission.³⁰¹

As noted above, the Plan Processor is required to work with the Operating Committee to develop a breach protocol in accordance with industry practices.³⁰² However, as noted above, the Participants believe that providing more details on these processes or procedures raises security issues. Moreover, as discussed below, the CAT is subject to applicable regulations involving database security, including Regulation Systems Compliance and Integrity under the Exchange Act (“Reg SCI”) and its requirement to provide notice to the Commission and to disseminate information about SCI events to affected CAT Reporters.

G. Regulation SCI and Other Security Standards

Commenters indicate that the Plan does not mention how the security requirements of Reg SCI will be incorporated into the CAT System.³⁰³ Another commenter recommends that the Plan clarify that the CAT will be subject to the full requirements of Reg SCI.³⁰⁴ Another commenter suggested that the CAT should be subject to other existing data security and privacy standards.³⁰⁵ As the Commission has noted, the CAT will be a facility of each of the Participants and will be a Reg SCI system.³⁰⁶ The Plan states that the Plan Processor will satisfy all applicable regulations involving database security, including Reg SCI, and the Participants have discussed with the Bidders their responsibilities under Reg SCI on numerous occasions.³⁰⁷ For the reasons noted above in the discussion of information security program details, the Participants do not believe that it is appropriate that the Plan provide details on how it will comply with Reg SCI.

H. Physical Security of the CAT System

Commenters also emphasize that data centers housing the CAT System need to be secure. While the Plan currently notes that data centers housing the CAT System must, at a minimum, be SOC 2 certified by an independent third party auditor, one commenter suggested that this requirement should be further strengthened and clarified to require that the data centers be AICPA SOC 2 certified, with such certification annually attested to by a qualified third party auditor that is not affiliated with any of the Participants or the Plan Processor.³⁰⁸

The Participants agree (and intended) that data centers housing the CAT System should be AICPA SOC 2 certified. In this regard, the Participants propose to amend the first paragraph of Appendix D, Section 4.1.3 of the Plan (Data Storage and Environment) to read:

³⁰¹ ICI Letter at 9.

³⁰² Plan, Appendix D, Section 4.1.5 at Appendix D-13.

³⁰³ FIF Letter at 130; FSR Letter at 6.

³⁰⁴ MFA Letter at 4.

³⁰⁵ SIFMA Letter at 21.

³⁰⁶ *See* Securities Exchange Act Rel. No. 73639 (Nov. 19, 2014), 79 Fed. Reg. 72252, 72275 n.246 (Dec. 5, 2014).

³⁰⁷ Plan, Section 6.9(b)(xi).

³⁰⁸ SIFMA Letter at 21.

“Data Centers housing CAT Systems (whether public or private) must, at a minimum, be AICPA SOC 2 certified by [an independent third party auditor] a qualified third-party auditor that is not an affiliate of any of the Participants or the CAT Processor. The frequency of the audit must be at least once per year.”
[Additions underlined; deletions bracketed]

I. Liability for Breaches in CAT Data Security Program

One commenter requests clarification from the Plan Processor regarding its liability to investors in the event of a CAT Data security breach and suggests that the Plan contain language to that effect.³⁰⁹ The commenter also notes that, as the Plan Processor will be solely responsible for the CAT System’s information security controls, it should expressly indemnify Participants for any costs or damages incurred as a result of a data breach occurring after they have provided data to the CAT.³¹⁰ Other commenters state that Industry Members should not bear the costs associated with a data breach and suggested that the CAT LLC should purchase an insurance policy that covers potential breaches and extends to Industry Members.³¹¹ Another commenter suggests that responsibility for monitoring and preventing misuse of CAT Data will depend on the dynamics of the CAT management team and abilities of the persons involved.³¹² This commenter notes that the CISO should have responsibility for monitoring the use of CAT Data, and the Chief Executive Officer/Chief Operations Officer would have ultimate accountability.³¹³

The Participants are in the process of negotiating an agreement with the potential Plan Processors. This Agreement will cover liability, insurance and indemnification. In addition, the Participants currently are exploring the scope, cost and other aspects of insurance related to the CAT. Under the Plan, the Plan Processor will be responsible for ensuring the security and confidentiality of data during transmission and processing, as well as data at rest.³¹⁴

J. Users Subject to Security Requirements

One commenter states that the security of the CAT Data “must be of the highest quality and that no authorized users with access to CAT Data should be exempt from any provision regarding security requirements and standards set forth in the Plan.”³¹⁵ Accordingly, this commenter recommends that the employees of the SEC with access to the data stored in the Central Repository or other CAT system be subject to the same security standards, including those set forth in Section 6.5(f)(i)(A) and Section 6.5(g), as other users.³¹⁶

³⁰⁹ FSI Letter at 4.

³¹⁰ *Id.* at 5. See also SIFMA Letter at 22 (regarding indemnification of broker-dealers in the event of a breach occurring due in no part to the fault of the broker-dealers).

³¹¹ FSR Letter at 2, 7-8; SIFMA Letter at 22.

³¹² Data Boiler Letter at 28.

³¹³ *Id.* The Participants note that it is unclear whether this comment refers to the CAT LLC or the Plan Processor, but notes that Section 4.6 of the Plan, which describes the officers of CAT LLC, does not contemplate a CEO or CCO of CAT LLC.

³¹⁴ Plan, Appendix C, Section A.4(a) at Appendix C-32.

³¹⁵ NYSE Letter at 2-3.

³¹⁶ NYSE Letter at 2-4. See also FSI Letter at 5.

The Participants agree with the commenter that the Plan's security program must take into consideration all users with access to CAT Data, including the SEC. The Participants originally proposed to apply the provisions of Section 6.5(f)(i)(A) and (B) to the SEC. As noted in the cover letter to the proposed amendment to the Plan dated December 2015, however, "[a]t the request of the SEC staff, the Participants propose[d] to exclude employees and Commissioners of the SEC from the requirements in both paragraphs (A) and (B)" of Section 6.5(f)(i).³¹⁷ We understand that the SEC is evaluating the security issues related to its use and access to the CAT.

Nevertheless, in light of the comments, the Participants propose to apply the requirements of Section 6.5(f)(i)(A) and (B), as well as Section 6.5(g) to the SEC. Specifically, the Participants propose to amend the Plan as follows:

Section 6.5

* * * * *

(f) Data Confidentiality

(i) The Plan Processor shall, without limiting the obligations imposed on Participants by this Agreement and in accordance with the framework set forth in, Appendix D, Data Security, and Functionality of the CAT System, be responsible for the security and confidentiality of all CAT Data received and reported to the Central Repository. Without limiting the foregoing, the Plan Processor shall:

(A) require all individuals who have access to the Central Repository (including the respective employees and consultants of the Participants and the Plan Processor[, but excluding employees and Commissioners of the SEC]) to agree: (1) to use appropriate safeguards to ensure the confidentiality of CAT Data stored in the Central Repository; and (2) not to use CAT Data stored in the Central Repository for purposes other than surveillance and regulation in accordance with such individual's employment duties; provided that a Participant will be permitted to use the CAT Data it reports to the Central Repository for regulatory, surveillance, commercial or other purposes as permitted by applicable law, rule, or regulation;

(B) require all individuals who have access to the Central Repository (including the respective employees and consultants of the Participants and the Plan Processor[, but excluding employees and Commissioners of the SEC]) to execute a personal "Safeguard

³¹⁷ Letter from the Participants to Brent J. Fields, SEC (Dec. 23, 2015) at 7.

of Information Affidavit” in a form approved by the Operating Committee providing for personal liability for misuse of data;

* * * * *

(g) Participants Confidentiality Policies and Procedures. The Participants and the SEC shall establish, maintain and enforce written policies and procedures reasonably designed to (1) ensure the confidentiality of the CAT Data obtained from the Central Repository; and (2) limit the use of CAT Data obtained from the Central Repository solely for surveillance and regulatory purposes. Each Participant shall periodically review the effectiveness of the policies and procedures required by this paragraph, and take prompt action to remedy deficiencies in such policies and procedures.

[Additions underlined; deletions bracketed]

K. Regular Assessments and Independent Audits of the Security of CAT Data

Commenters also note the need for an on-going assessment of the risks associated with the CAT System and data to meet the NIST industry standards referenced in the Plan.³¹⁸ In discussing the confidentiality and sensitivity of CAT Data, another commenter notes that “[t]he emphasis shouldn’t be favoring on a particular prescribed standard . . . but the key is: CAT needs independence [sic] privacy and security assessment at regular intervals. The assessment will include: vulnerability scan and identifying system nuisances that can cause or already caused privacy and security issues.”³¹⁹

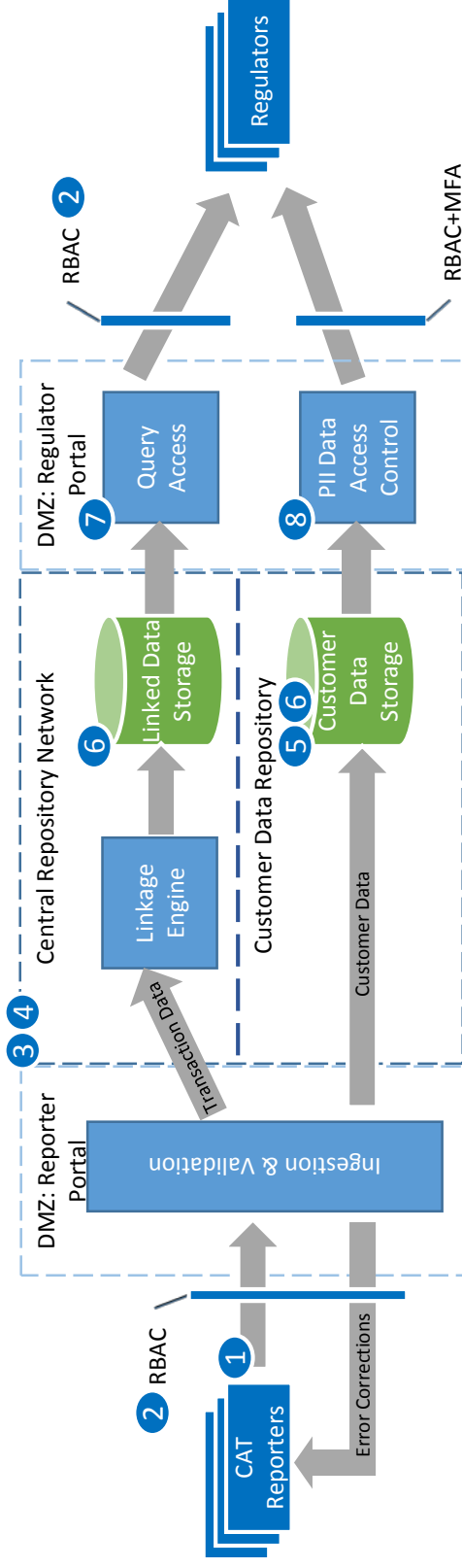
The Participants agree that the CAT System should be regularly assessed for security risks. Section 6.2(a) of the Plan provides that the CCO, in collaboration with the CISO, will retain independent third parties with appropriate data security expertise to review and audit on an annual basis the policies, procedures, standards and real time tools that monitor and address data security issues for the Plan Processor and the Central Repository.

³¹⁸ FIF Letter at 130-31.
³¹⁹ Data Boiler Letter at 29.

High Level CAT Security Requirements

EXHIBIT

The below represents some of the high-level security controls required by the CAT NMS Plan. Actual architecture may vary depending on the specific solution provided by the Plan Processor.



Architecture level Controls

- 1 Encrypted connectivity to CAT (e.g. private lines, VPNs) (App.D.4.1.1)
- 2 Role Based Access Controls (RBAC) governing data access; all access logged (App.D.4.1.4)
- 3 CAT Data not accessible via public internet (App.D.4.1.1, 4.1.3)
- 4 Segregation of CAT compute and network infrastructure from other cloud tenets (App.D.4.1.3)
- 5 Customer data segregated into separate database (App.D.4.1.6)
- 6 All data encrypted in flight and at rest (App.D.4.1.2)
- 7 No PII data included in query results (App. D.8.1.1, 8.1.3)
- 8 Separate PII request & retrieval process; Multi-Factor Authentication (MFA) required and all access logged and audited (App.D.4.1.4)

Program level Controls

- The Plan Processor must designate an employee as CISO, with responsibilities including creating and enforcing policies, procedures, and control structures to monitor and address data security issues (6.2.v)
- Documented policies and procedures must be provided for:
 - A comprehensive data security plan, reviewed annually, and including regular penetration testing and code security audits (App.D.4.1)
 - Key management practices, including rotation and revocation (App.D.4.1.2)
 - Access control policies, including auditing, real-time monitoring of all access to CAT transaction and PII data, and data destruction policies (App.D.4.1.2)
 - CRO must annually review and certify all persons with PII access (App.D.4.1.6)
 - Breach detection and management policies, including monitoring and escalation practices, and incident response plan (App.D.4.1.5)
 - Employee data access policies, including background checks, separation of duties, entitlement management, and data access monitoring (App.D.4.1.4)
- All datacenters must be at least SOC-2 certified, with audits at least annually (App.D.4.1.3)
- Compliance with applicable industry standards recommended by NIST, FFIEC, and ISO (App.D.4.2)
- Participants must have policies and procedures to ensure the confidentiality of CAT Data and limit its use to surveillance and regulatory purposes (6.5.f.i.A)

Key



High Level CAT Security Requirements

Architecture level Controls

- 1 Encrypted connectivity to CAT** (App.D.4.1.1)
 - CAT Reporters must use secure methods such as private lines or (for smaller broker-dealers) Virtual Private Network connections
- 2 Role Based Access Controls** (RBAC) (App.D.4.1.4)
 - Data access is governed at the attribute level following the “least privileged” practice; all access is logged
 - Periodic reports with the current list of authorized users and the date of their most recent access must be provided to Participants, the SEC and the Operating Committee
- 3 CAT Data not accessible via public internet** and deployed within the network infrastructure (App.D.4.1.1)
 - If public cloud infrastructure is used, virtual private networking and firewalls/access control lists or equivalent controls such as private network segments or private tenant segmentation must be used to isolate CAT Data from unauthenticated public access
 - Remote access to the Central Repository must be limited to authorized Plan Processor staff and must use secure multi-factor authentication
- 4 Segregation of CAT compute and network infrastructure** from other cloud tenants (App.D.4.1.3)
 - CAT compute infrastructure may not be co-mingled with other non-regulatory systems
 - Systems hosting the CAT processing for any applications must be segmented from other systems as far as is feasible on a network level (firewalls, security groups, ACL’s, VLAN’s, authentication proxies/bastion hosts and similar)
 - For systems using inherently shared infrastructure/storage (e.g., public cloud storage services), an encryption/key management/access control strategy that effectively renders the data private must be documented
- 5 Customer data segregated** into separate database (App.D.4.1.6)
 - The CAT must capture and store Customer and Customer Account Information in a secure database physically separated from the transactional database
- 6 All data encrypted in flight and at rest** including archival data storage (App.D.4.1.2)
 - Data encrypted in flight via TLS/SSL
 - Symmetric key encryption must use a minimum key size of 128 bits or greater (e.g., AES-128), larger keys are preferable
 - The Plan Processor must describe how PII encryption is performed (e.g. AES-256, 3DES)
 - Asymmetric key encryption (e.g., PGP) for exchanging data between Data Submitters and the Central Repository is desirable
 - Non-PII CAT Data stored in a Plan Processor private environment is not required to be encrypted at rest
- 7 No PII data included in query results** (App.D.8.1.1, 8.1.3)
 - Results will display existing non-PII unique identifiers (e.g., Customer-ID or Firm Designated ID)
- 8 Separate PII request & retrieval process** (App.D.4.1.2, 4.1.4, 4.1.6)
 - Multi-Factor Authentication (MFA) capability for all logins (including non-PII) is required to be implemented by the Plan Processor
 - All PII access must be logged and audited
 - Unencrypted storage of PII is prohibited
 - CRO must annually review and certify all persons with PII access

High Level CAT Security Requirements

Program level Controls

CISO and CCO Responsibilities (6.2.v; App.C.4.a; App.D.4.1.6)

- The Plan Processor must designate an employee as CISO, with responsibilities including creating and enforcing policies, procedures, and control structures to monitor and address data security issues
- Comprehensive data security plan, reviewed annually by the CCO, and including regular penetration testing and code security audits
- The CCO and the CISO shall have access to daily PII reports that list all users who are entitled for PII access, as well as the audit trail of all PII access that has occurred for the day being reported on

CAT Data Access and Confidentiality (6.5.f.i.A; App.D.4.1.4)

- Participants must have policies and procedures to ensure the confidentiality of CAT Data and limit its use to surveillance and regulatory purposes
- User access control policies, including auditing, real-time monitoring of all access to CAT transaction and PII data, and data destruction policies
- Employee data access policies, including background checks, information barriers, separation of duties, internal segmentation, and entitlement management

Datacenter Standards (App.D.4.1.3)

- All datacenters must be at least SOC-2 certified, with audits at least annually

Industry Standards (App.D.4.2)

- Compliance with applicable industry standards recommended by NIST, FFIEC, and ISO
- Plan Processor shall seek membership in the FS-ISAC and other comparable organizations

Key Management (App.D.4.1.2, 4.1.3)

- If public cloud managed services are used, key management surrounding the encryption of that data must be documented (particularly whether the cloud provider manages the keys, or if the Plan Processor maintains that control), as well as policies for rotation and revocation
- PII encryption methodology must include a secure documented key management strategy such as the use of HSM(s)
- Auditing and real-time monitoring of the service for when cloud provider personnel are able to access/decrypt CAT Data, as well as a response plan to address chain of custody must be documented in detail

Penetration Testing (6.2.b.v.H; App.D.4.1.3)

- The Plan Processor must include penetration testing and an application security code audit by a reputable (and named) third party prior to launch as well as periodically as defined in the SLA(s)
- The penetration test reviews of the Central Repository's network, firewalls, and development, testing and production systems should help the CAT evaluate the system's security and resiliency in the face of attempted and successful systems intrusions
- Penetration test reviews shall occur at least every year or earlier, or at the request of the Operating Committee

Breach detection and management policies (App.D.4.1.5)

- Policies should include monitoring and escalation practices, and incident response plan
- The incidence response plan may include items such as: Guidance on crisis communications, Security and forensic procedures, Customer notifications, "playbook" or quick reference guides that allow responders quick access to key information.

High Level CAT Security Requirements

Data Usage and Regulator Controls

User Roles and Data Access (App.D.4.1.4, 4.1.6, 8.1.3, 8.2.1, 8.2.2)

- Periodic reports detailing the current list of authorized users and the date of their most recent access must be provided to SROs, the SEC and the Operating Committee. The required frequency of this report will be defined by the Operating Committee
- Authorized regulators from SROs and the SEC may access all CAT Data, with the exception of PII data. A subset of the authorized regulators from the Participants and the SEC will have permission to access and view PII data
- The Plan Processor must work with SROs and SEC to implement an administrative and authorization process to provide regulator access. The Plan Processor must have procedures and a process to verify the list of active users on a regular basis
- The user-defined direct query tool must provide an automated delivery method of scheduled query results to the appropriate Participant. Delivery methods must comply with all information security guidelines (encryption, etc.)
- Bulk extraction of data must be consistently in line with all permissioning rights granted by the Plan Processor. Extracted data returned must be encrypted, password protected and sent via secure methods of transmission

Separate PII request & Retrieval process (App.D.4.1.2, 4.1.4, 4.1.6)

- Multi-Factor Authentication (MFA) capability for all logins (including non-PII) is required to be implemented by the Plan Processor
- All PII access must be logged and audited
- Unencrypted storage of PII is prohibited
- CRO must at least annually review and certify all persons with PII access

Data Usage Policies and Procedures (6.1.m; 6.5.f.i.A, f.i.B, f.ii, g)

- SROs must have written policies and procedures reasonably designed to ensure the confidentiality of the CAT Data obtained from the Central Repository and limit the use of CAT Data obtained from the Central Repository solely for surveillance and regulatory purposes
- Effectiveness of related policies and procedures must be reviewed and remediated periodically as needed
- The Plan Processor shall develop and implement a training program that addresses the security and confidentiality of all information accessible from the CAT, as well as the operational risks associated with accessing the Central Repository. The training program will be made available to all individuals who have access to the Central Repository on behalf of the Participants or the SEC, prior to such individuals being granted access to the Central Repository
- All individuals who have access to the Central Repository (including the respective employees and consultants of the Participants and the Plan Processor, but excluding employees and Commissioners of the SEC) must execute a personal "Safeguard of Information Affidavit"
- SROs must implement information barriers for regulatory and non-regulatory staff with regard to access and use of CAT, permit only designated persons to have access to the CAT Data stored in the Central Repository, and impose penalties for staff non-compliance with any of its or the Plan Processor's policies or procedures with respect to information security

Incident Response (6.5.f.iii)

- SROs and SEC shall alert the CAT chief compliance officer as promptly as reasonably practicable, and within 24 hours, in the case of noncompliance with the policies and procedures adopted by an SRO or the SEC or a breach of the security of the CAT