

July 22, 2020

VIA EMAIL AND HAND DELIVERY

Ms. Vanessa Countryman
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: CAT NMS Plan Section 6.6(c)(i) Implementation Plan

Dear Ms. Countryman:

The Participants¹ in the National Market System Plan Governing the Consolidated Audit Trail (“CAT NMS Plan” or “Plan”)² respectfully submit the enclosed Implementation Plan pursuant to Section 6.6(c)(i) of the CAT NMS Plan.³ In accordance with Section 6.6(c)(i), the Implementation Plan includes the Participants’ timeline for achieving the objective milestones setting forth how and when the Participants will facilitate the achievement of Full Implementation of CAT NMS Plan Requirements. Please feel free to contact any of the Participants if you have any questions.

Respectfully submitted,

Participants of the CAT NMS Plan

Enclosure

cc: The Hon. Jay Clayton, Chairman
The Hon. Allison Herren Lee, Commissioner
The Hon. Hester M. Peirce, Commissioner
The Hon. Elad L. Roisman, Commissioner
Mr. Brett Redfearn, Director, Division of Trading and Markets
Mr. David S. Shillman, Associate Director, Division of Trading and Markets
Mr. David Hsu, Assistant Director, Division of Trading and Markets
Mr. Mark Donohue, Senior Policy Advisor, Division of Trading and Markets
Ms. Manisha Kimmel, Senior Policy Advisor, Regulatory Reporting to Chairman Clayton

¹ The twenty-five Participants of the CAT NMS Plan are: BOX Exchange LLC; Cboe BYX Exchange, Inc., Cboe BZX Exchange, Inc., Cboe EDGA Exchange, Inc., Cboe EDGX Exchange, Inc., Cboe C2 Exchange, Inc. and Cboe Exchange, Inc.; Financial Industry Regulatory Authority, Inc. (“FINRA”); Investors Exchange LLC; Long-Term Stock Exchange, Inc., MEMX LLC, Miami International Securities Exchange LLC, MIAX Emerald, LLC, MIAX PEARL, LLC; NASDAQ BX, Inc., Nasdaq GEMX, LLC, Nasdaq ISE, LLC, Nasdaq MRX, LLC, NASDAQ PHLX LLC, The NASDAQ Stock Market LLC; and New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago, Inc. and NYSE National, Inc.

² The Limited Liability Company Agreement of Consolidated Audit Trail, LLC is the CAT NMS Plan. Unless otherwise noted, capitalized terms are used as defined in Rule 613, in the CAT NMS Plan or in this letter.

³ A copy of the Implementation Plan also is available on the CAT NMS Plan public website at www.catnmsplan.com.

CAT Implementation Plan

JULY 22, 2020

EXECUTIVE SUMMARY

In accordance with Section 6.6(c)(i) of the CAT NMS Plan, the Participants provide this Implementation Plan, which includes the Participants' timeline for achieving the objective milestones setting forth how and when the Participants will facilitate the achievement of Full Implementation of CAT NMS Plan Requirements. The Implementation Plan includes the targeted or actual completion date and a description of the status for each of the objective milestones set forth in Section C.10 of Appendix C of the CAT NMS Plan and for each of the Financial Accountability Milestones, as defined in Section 1.1 of the CAT NMS Plan. Where the Participants decide to complete any of the milestones identified in the Implementation Plan by releasing functionality in a phased approach, the Implementation Plan describes each phased release necessary to achieve the completion of the relevant milestone and provides completion dates for each such release identified.

As of the date of filing of this Implementation Plan, the Participants have satisfied various milestones set forth in the CAT NMS Plan. Among other things and as described in more detail below, the Participants have selected a Plan Processor. In 2018, the Participants commenced reporting Participant Data to the CAT. Other Data (which, pursuant to the CAT NMS Plan includes, but is not limited to, SIP quote and trade data, OCC data, trade and quote information from Participants and reference data) is being reported to the CAT. Participants and Industry Members are subject to requirements regarding synchronization of their Business Clocks. The Participants have published Industry Member Technical Specifications for Phases 2a, 2b, 2c and 2d. In addition, as of June 22, 2020, Large Industry Members and Small Industry OATS Reporters commenced reporting Phase 2a Industry Member Data to the CAT. Large Industry Members commenced reporting Phase 2b Industry Member Data to the CAT on July 20, 2020. These completed milestones and the additional milestones necessary to complete the implementation of the CAT are set forth below.

APPENDIX C MILESTONES

	Targeted Completion Date or Actual Completion Date ¹	Milestone(s)	Description	Description of Status
1	1/17/2017	Row 1 of App. C-10(a) ²	Selection of Thesys CAT ("TCAT") as the Initial Plan Processor	Completed
2	1/17/2017	Row 1 of App. C-10(e)	Operating Committee finalizes Other Data requirements	Completed
3	3/15/2017	Row 2 of App. C-10(c)	Participants to synchronize Business Clocks	Completed
4	3/15/2017	Row 4 of App. C-10(c) Row 6 of App. C-10(c)	Industry Members Synchronize Business Clocks that capture time in milliseconds	Completed
5	5/14/2017	Row 1 of App. C-10(b)	TCAT Plan Processor begins development of Participant Technical Specifications	Completed
6	5/14/2017	Row 2 of App. C-10(b)	TCAT Plan Processor publishes iterative drafts of Participant Technical Specifications ³	Completed
7	5/15/2017	Row 1 of App. C-10(d)	TCAT Plan Processor provides draft Central Repository Access Technical Specifications	Completed
8	2/9/2018	Row 4 of App. C-10(c) Row 6 of App. C-10(c)	Industry Members Synchronize Business Clocks that do not capture time in milliseconds	Completed
9	5/5/2018	Row 5 of App. C-10(b)	TCAT Plan Processor plans Participant testing dates	Completed
10	6/5/2018	Row 3 of App. C-10(e)	TCAT Plan Processor begins testing with Other Data sources	Completed
11	6/5/2018	Row 4 of App. C-10(e)	TCAT Plan Processor begins accepting Other Data sources	Completed
12	6/5/2018	Row 1 of App. C-10(c)	Using order and MM data submitted during planned testing, TCAT Plan Processor creates linkages of the lifecycle events based on the received data	Completed

¹ The "Completion Date" indicates the targeted completion date for the milestone, unless the status for the milestone has been designated as "Completed." In that case, the "Completion Date" indicates the date by which the milestone was completed.

² The references to Rows of Appendix C refer to the rows of the charts set forth in Section 10 of Appendix C of the CAT NMS Plan.

³ The dates provided for iterative drafts for Participant and Industry Member Technical Specifications is the date on which the first draft of the relevant Technical Specification was published. Additional drafts were published after this date prior to finalizing the Technical Specifications for the commencement of reporting for the relevant phase.

	Targeted Completion Date or Actual Completion Date ¹	Milestone(s)	Description	Description of Status
13	7/10/2018	Row 2 of App. C-10(e)	TCAT Plan Processor determines Other Data requirements/publishes Technical Specifications (if applicable)	Completed
14	7/16/2018	Row 4 of App. C-10(b)	TCAT Plan Processor begins testing for Participant reporting	Completed
15	9/9/2018	Row 3 of App. C-10(b)	Participant Technical Specifications Published ⁴	Completed
16	10/30/2018	Row 6 of App. C-10(b)	TCAT Plan Processor begins developing Technical Specifications for Equities Phase 2a	Completed
17	10/30/2018	Row 7 of App. C-10(b)	TCAT Plan Processor publishes iterative drafts of Draft Technical Specifications for Equities Phase 2a	Completed
18	10/30/2018	Row 6 of App. C-10(b)	TCAT Plan Processor begins developing Technical Specifications for Options Phase 2b	Completed
19	10/30/2018	Row 7 of App. C-10(b)	TCAT Plan Processor publishes iterative drafts of Draft Technical Specifications for Options Phase 2b	Completed
20	12/11/2018	Row 2 of App. C-10(d)	TCAT Plan Processor publishes Central Repository Access Technical Specifications	Completed
21	9/30/2019	Row 3 of App. C-10(e)	FINRA CAT ("FCAT") Plan Processor commences UAT with Other Data from Exegy	Completed
22	10/8/2019	Row 6 of App. C-10(b)	FCAT Plan Processor begins developing Technical Specifications for Phase 2c	Completed
23	10/17/2019	Row 1 of App. C-10(d)	FCAT Plan Processor provides draft Central Repository Access Technical Specifications	Completed
24	10/30/2019	Row 8 of App. C-10(b)	Technical Specifications Published for Equities Phase 2a	Completed
25	10/30/2019	Row 8 of App. C-10(b)	Technical Specifications Published for Options Phase 2b	Completed
26	11/1/2019	Row 7 of App. C-10(b)	FCAT Plan Processor publishes iterative drafts of Draft Technical Specifications for Phase 2c	Completed
27	11/8/2019	Row 3 of App. C-10(d)	FCAT Plan Processor provides (1) test information, either from Participant testing or from other test data, for regulators to test use of the Central	Completed

⁴ The date provided for the publication of the Participant and Industry Member Technical Specifications is the date of the final publication prior to commencement of the relevant reporting phase.

	Targeted Completion Date or Actual Completion Date ¹	Milestone(s)	Description	Description of Status
			Repository and (2) regulators connectivity to the Central Repository test environment and production environments	
28	11/25/2019	Row 2 of App. C-10(d)	FCAT Plan Processor publishes Central Repository Access Technical Specifications	Completed
29	11/25/2019	Row 4 of App. C-10(d)	FCAT Plan Processor provides regulators access to test data for Industry Members (other than Small Industry Members)	Completed
30	11/25/2019	Row 5 of App. C-10(d)	FCAT Plan Processor provides regulators access to test data for Small Industry Members	Completed
31	11/25/2019	Row 4 of App. C-10(e)	FCAT Plan Processor goes live with OPRA and Options NBBO Other Data	Completed
32	12/16/2019	Row 10 of App. C-10(b) Row 13 of App. C-10(b)	FCAT Plan Processor makes Phase 2a testing environment available	Completed
33	12/16/2019	Row 11 of App. C-10(b) Row 14 of App. C-10(b)	FCAT Plan Processor and Industry Members begin testing for 2a reporting	Completed
34	12/16/2019	Row 10 of App. C-10(b) Row 13 of App. C-10(b)	FCAT Plan Processor makes Phase 2b testing environment available	Completed
35	12/16/2019	Row 11 of App. C-10(b) Row 14 of App. C-10(b)	FCAT Plan Processor and Industry Members begin testing for 2b reporting	Completed
36	1/31/2020	Row 8 of App. C-10(b)	Technical Specifications Published for Phase 2c	Completed
37	3/16/2020	Row 2 of App. C-10(a)	FCAT Plan Processor begins development of CAIS Technical Specifications	Completed
38	5/11/2020	Row 6 of App. C-10(b)	FCAT Plan Processor begins developing Technical Specifications for Phase 2d	Completed
39	5/2020	Row 9 of App.C-10(b)	Participant exchanges that support options MM make Quote Sent Time available	Completed
40	6/30/2020	Row 7 of App. C-10(b)	FCAT Plan Processor publishes iterative drafts of Draft Technical Specifications for Phase 2d	Completed
41	6/30/2020	Row 3 of App. C-10(a)	FCAT Plan Processor publishes iterative drafts of CAIS Technical Specifications	Completed
42	7/20/2020	Row 12 of App. C-10(b)	Industry Members are required to begin reporting Quote Sent Time on OMM quotes	Completed

	Targeted Completion Date or Actual Completion Date ¹	Milestone(s)	Description	Description of Status
43	11/30/2020	Row 8 of App. C-10(a)	Technical Specifications Published for Phase 2d	
44	1/4/2021	Row 3 of App. C-10(c)	FCAT Plan Processor creates linkages of the lifecycle of order events based on the received data through Phase 2b	
45	1/29/2021	Row 4 of App. C-10(a)	Full CAIS Final Technical Specification Published	
46	1/31/2021	Row 10 of App. C-10(b) Row 13 of App. C-10(b)	FCAT Plan Processor makes Phase 2c testing environment available	
47	1/31/2021	Row 11 of App. C-10(b) Row 14 of App. C-10(b)	FCAT Plan Processor and Industry Members begin testing for 2c reporting	
48	6/30/2021	Row 10 of App. C-10(b) Row 13 of App. C-10(b)	FCAT Plan Processor makes Phase 2d testing environment available	
49	6/30/2021	Row 11 of App. C-10(b) Row 14 of App. C-10(b)	FCAT Plan Processor and Industry Members begin testing for 2d reporting	
50	12/13/2021	Row 3 of App. C-10(c) Row 5 of App. C-10(c)	FCAT Plan Processor creates linkages of the lifecycle of order events based on the received data through Phase 2d	
51	1/31/2022	Row 5 of App. C-10(a) Row 7 of App. C-10(a)	Customer Account Information – Test Environment Opens (All Industry Members)	
52	7/11/2022	Row 6 of App. C-10(a) Row 8 of App. C-10(a)	Customer and Account Information – Production Environment Go-Live (All Industry Members)	

FINANCIAL ACCOUNTABILITY MILESTONES

	Targeted Completion Date or Actual Completion Date	Milestone(s)	Description	Description of Status
1	7/31/2020	FAM Period 1	<p>Completion of Initial Industry Member Core Equity and Option Reporting, defined under CAT NMS Plan Section 1.1 as the reporting by Industry Members (excluding Small Industry Members that are not OATS reporters) of both:</p> <ul style="list-style-type: none"> (a) equities transaction data, excluding Customer Account Information, Customer-ID, and Customer Identifying Information; and (b) options transaction data, excluding Customer Account Information, Customer-ID, and Customer Identifying Information. 	
2	12/31/2020	FAM Period 2	<p>Completion of Full Implementation of Core Equity Reporting, defined under CAT NMS Plan Section 1.1 as the point at which:</p> <ul style="list-style-type: none"> (a) Industry Member reporting (excluding reporting by Small Industry Members that are not OATS reporters) for equities transactions, excluding Customer Account Information, Customer-ID, and Customer Identifying Information, is developed, tested, and implemented at a 5% Error Rate or less and with sufficient intra-firm linkage, inter-firm linkage, national securities exchange linkage, and trade reporting facilities linkage to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, excluding linkage of representative orders, from order origination through order execution or order cancellation; and (b) the query tool functionality required by Section 6.10(c)(i)(A) and Appendix D, Sections 8.1.1-8.1.3 and Section 8.2.1 incorporates the Industry Member equities transaction data described in condition (a) and is available to the Participants and to the Commission 	
3	12/31/2021	FAM Period 3	<p>Completion of Full Availability and Regulatory Utilization of Transactional Database Functionality, defined under CAT NMS Plan Section 1.1 as the point at which:</p>	

			<p>(a) reporting to the Order Audit Trail System (“OATS”) is no longer required for new orders;</p> <p>(b) Industry Member reporting for equities transactions and simple electronic options transactions, excluding Customer Account Information, Customer-ID, and Customer Identifying Information, with sufficient intra-firm linkage, inter-firm linkage, national securities exchange linkage, trade reporting facilities linkage, and representative order linkages (including any equities allocation information provided in an Allocation Report) to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, is developed, tested, and implemented at a 5% Error Rate or less;</p> <p>(c) Industry Member reporting for manual options transactions and complex options transactions, excluding Customer Account Information, Customer-ID, and Customer Identifying Information, with all required linkages to permit the Participants and the Commission to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, including any options allocation information provided in an Allocation Report, is developed, tested, and fully implemented;</p> <p>(d) the query tool functionality required by Section 6.10(c)(i)(A) and Appendix D, Sections 8.1.1-8.1.3, Section 8.2.1, and Section 8.5 incorporates the data described in conditions (b)-(c) and is available to the Participants and to the Commission; and</p> <p>(e) the requirements of Section 6.10(a) are met.</p>	
4	12/30/2022	FAM Period 4	<p>Completion of Full Implementation of CAT NMS Plan Requirements, defined under CAT NMS Plan Section 1.1 as the point at which the Participants have satisfied all of their obligations to build and implement the CAT, such that all CAT system functionality required by Rule 613 and the CAT NMS Plan has been developed, successfully tested, and fully implemented at the initial Error Rates specified by Section 6.5(d)(i) or less, including functionality that efficiently permits the Participants and the Commission to access all CAT Data required to be stored in the Central Repository pursuant to Section 6.5(a), including Customer Account Information, Customer-ID, Customer Identifying</p>	

			Information, and Allocation Reports, and to analyze the full lifecycle of an order across the national market system, from order origination through order execution or order cancellation, including any related allocation information provided in an Allocation Report.	
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