VIA EMAIL (NMSPlans@sec.gov)

March 27, 2024

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

Re: File Number 4-698
        Notice of Filing of Amendment to the National Market System Plan Governing the
        Consolidated Audit Trail Regarding Cost Savings Measures

Dear Ms. Countryman:

The Consolidated Audit Trail, LLC ("CAT LLC"), on behalf of the Participants[1] in the National Market System Plan Governing the Consolidated Audit Trail[2] (the "CAT NMS Plan" or "Plan"), is filing with the Securities and Exchange Commission (the "SEC" or "Commission") these proposed amendments to the CAT NMS Plan (the "Cost Savings Amendments") pursuant to Rule 608 of Regulation NMS under the Securities Exchange Act of 1934 (the "Exchange Act").[3]

The Participants and Industry Members, which the Commission has made responsible for funding the costs of the CAT, have a strong interest in ensuring that the CAT achieves its regulatory objectives in an efficient and cost-effective manner. Although CAT LLC has proactively implemented various cost savings measures,[4] operating costs continue to increase substantially due to processing costs, storage costs, and the complexity of reporting requirements that are currently imposed under the CAT NMS Plan. Accordingly, CAT LLC has determined that it is advisable and in the best interests of the Company, the Participants, Industry Members, and investors to seek the Commission's approval of CAT NMS Plan amendments that would facilitate significant cost savings while preserving the regulatory objectives for the CAT.

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[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., 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, New York Stock Exchange LLC, NYSE American LLC, NYSE Arca, Inc., NYSE Chicago, Inc. and NYSE National, Inc.
[2]   The CAT NMS Plan is a national market system plan approved by the Commission pursuant to Section 11A of the Exchange Act and the rules and regulations thereunder. *See* Exchange Act Release No. 79318 (Nov. 15, 2016), 81 Fed. Reg. 84696 (Nov. 23, 2016) ("CAT NMS Plan Approval Order"). The full text of the CAT NMS Plan is available at www.catnmsplan.com. Unless otherwise defined herein, capitalized terms are defined as set forth in the CAT NMS Plan.
[3]   17 C.F.R. § 242.608.
[4]   For a detailed discussion of these cost savings measures, *see* Letter from Brandon Becker, CAT NMS Plan Operating Committee Chair, to Vanessa Countryman, Secretary, Commission, dated July 28, 2023, at 22-26, https://www.sec.gov/comments/4-698/4698-237380-495743.pdf.

As described further below, the Cost Savings Amendments are expected to result in approximately $23.0 million in new annual cost savings in the first year with limited impact on the regulatory function of the CAT.[5] Specifically, the Cost Savings Amendment would:

(1)   optimize processing and storage requirements for Options Market Maker[6] quotes in Listed Options[7] ("Options Market Maker Quotes"), without eliminating them entirely from the CAT;

(2)   permit the Plan Processor to move raw unprocessed data and interim operational copies of CAT Data older than 15 days to a more cost-effective storage tier; and

(3)   permit the Plan Processor to provide an interim CAT-Order-ID on an "as requested" basis rather than each day.

In addition, the Cost Savings Amendments would incorporate into the CAT NMS Plan the Commission's recent exemptive order providing that data from industry testing for both Industry Members and Participants may be deleted after three months, which is estimated to result in additional cost savings of approximately $1 million per year, and would extend such relief to include test data related to the customer account and information system.[8]

The proposed changes to the CAT NMS Plan to implement the Cost Savings Amendments are set forth in <u>Exhibit A</u> to this filing.[9] CAT LLC continues to explore further changes to the CAT NMS Plan and expects to file future amendments that would result in additional cost savings without compromising the regulatory goals of the CAT.

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[5]   All cost and savings projections are estimates only and reflect the current state and costs of CAT operations, including the current number of exchanges. Cost savings estimates are based on, among other factors: current CAT NMS Plan requirements; reporting by Participants, Industry Members and market data providers; observed data rates and volumes; current discounts, reservations and cost savings plans; and associated cloud fees. Actual future savings could be more or less than estimated due to changes in any of these variables. S3 Intelligent Tier storage fees in production are allocated at a ratio of 1 (S3 Frequent Access) : 1 (S3 Infrequent Access) : 8 (S3 Archive Instant Access) based on current operations and regulatory usage. Savings projections are primarily based on production environments, which represent approximately two-thirds of all cloud fees. For additional information on the cost savings estimates relevant to each proposal, *see infra* notes 17, 21, 26 and 27.

[6]   Section 1.1 of the CAT NMS Plan defines an "Options Market Maker" as "a broker-dealer registered with an exchange for the purpose of making markets in options contracts on the exchange."

[7]   Section 1.1 of the CAT NMS Plan defines a "Listed Option" as having "the meaning set forth in Rule 600(b)(35) of Regulation NMS." Rule 600(b)(35) has since been redesignated as Rule 600(b)(43), which defines a "Listed Option" as "any option traded on a registered national securities exchange or automated facility of a national securities association."

[8]   Exchange Act Release No. 99023 (Nov. 27, 2023), 88 Fed. Reg. 84026 (Dec. 1, 2023).

[9]   Because the Commission has acknowledged that Appendix C was not intended to be continually updated once the CAT NMS Plan was approved, CAT LLC is not proposing to update Appendix C to reflect the proposed amendments. *See* Exchange Act Release No. 89632 (Aug. 21, 2020), 85 Fed. Reg. 65990 (Oct. 16, 2020).

Requirements Pursuant to Rule 608(a)

A.   Description of the Proposed Amendments to the CAT NMS Plan

1.   Optimize Processing and Storage Requirements for Options Market Maker Quotes

a.   Overview

Options Market Maker Quotes are the single largest data source for the CAT, comprising approximately 98% of all options exchange events and approximately 75% of all transaction volume stored in the CAT.[10] Under the CAT NMS Plan, Options Exchanges are required to report Options Market Maker Quotes to the CAT, and such quotes must be processed and assembled to create a complete order lifecycle. The number of quotes that result in an execution is extremely low; as a result, the vast majority of Options Market Maker Quote lifecycles consist of just two events—the quote and its subsequent cancellation.

The costs associated with processing and storing Options Market Maker Quotes under the CAT NMS Plan are significant—approximately $30 million in 2023.[11] CAT LLC has been focused on reducing these costs. In November 2023, the Commission granted exemptive relief that would allow the Plan Processor to create options quote lifecycles only once; this options quotes "single pass" proposal is expected to result in annual savings of approximately $5.4 million upon implementation in April 2024.[12] Even with these savings, the costs related to Options Market Maker Quotes continue to far outweigh the regulatory benefit.

Under the proposed amendments, Options Market Maker Quotes in Listed Options and related Reportable Events will be subject to ingestion only and will not be subject to any linkage requirements. These changes would result in approximately $20.0 million in additional annual savings, without eliminating Options Market Maker Quotes entirely from the CAT. Options

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[10]   Under Section 1.1 of the CAT NMS Plan, a "Reportable Event" "includes, but is not limited to, the original receipt or origination, modification, cancellation, routing, execution (in whole or in part) and allocation of an order, and receipt of a routed order." Section 1.1 of the CAT NMS Plan states that an "order" "has, with respect to Eligible Securities, the meaning set forth in SEC Rule 613(j)(8)." SEC Rule 613(j)(8), in turn, states that "[t]he term order shall include: (i) Any order received by a member of a national securities exchange or national securities association from any person; (ii) Any order originated by a member of a national securities exchange or national securities association; or (iii) Any bid or offer." Accordingly, the definition of an "order" includes Options Market Maker Quotes, and Reportable Events include events related to Options Market Maker Quotes.

[11]   Although Options Market Maker Quotes are the single largest data source for the CAT, there is not a linear relationship between volume and costs; rather, a combination of volume and processing complexity drive costs. While Options Market Maker Quotes represent a significant percentage of data volume, life-cycling this data is less compute intensive because the vast majority of quotes have just two events and involve only a single venue. Despite this relatively limited processing complexity, the cost impact of storing and processing Options Market Maker Quotes remains a significant percentage of overall CAT costs.

[12]   Exchange Act Release No. 98848 (Nov. 2, 2023); 88 Fed. Reg. 77128 (Nov. 8, 2023). The exemption order allows the Plan Processor to create lifecycle linkages for Options Market Maker Quotes only once by T+2 at 8 a.m. ET (as opposed to requiring both an interim lifecycle by T+1 at 9 p.m. ET and a final lifecycle by T+5 at 8 a.m. ET). To the extent the proposed amendments are approved, the Plan Processor would no longer be required to create any lifecycle linkages for Options Market Maker Quotes.

Exchanges will continue to report Options Market Maker Quotes in the same manner they do today, but the Plan Processor will only ingest and store them. Options Market Maker Quotes will no longer be subject to validation, feedback, linkage and lifecycle processing, or Plan Processor enrichments (*e.g.*, next event timestamp, lifecycle sequence number, CAT-Lifecycle-ID). The elimination of linkage and feedback processes will remove Options Market Maker Quotes from Options Market Replay, OLA Viewer, and All-Related Lifecycle Event queries. Executions that result from Options Market Maker Quotes will identify the *quoteId* of the quote that resulted in an execution, but will appear as orphaned lifecycle events. Options Market Maker Quotes will no longer be accessible via DIVER, but will remain accessible through BDSQL and Direct Read interfaces.

These changes would significantly reduce the costs of the CAT with limited impact on the regulatory function of the CAT. As noted, the vast majority of Options Market Maker Quote lifecycles do not involve any execution or allocation and usage data demonstrates that such data is very rarely accessed by regulators. Under the proposed amendments, regulators will still have access to unlinked Options Market Maker Quotes data by T+1 at 12:00 p.m. ET. All necessary information for the eliminated enrichments would be available to regulators, but regulators would need to derive the enrichments themselves; upon request, the Plan Processor would provide regulators with the code required in order to do so. As a result of these changes, the cost impact of Options Market Maker Quotes on the CAT would be reduced from approximately $24.4 million (inclusive of anticipated savings resulting from the implementation of the options quotes "single pass" proposal referenced above) to approximately $4.0 million annually.

The Participants believe that the anticipated savings associated with this proposal substantially outweigh the limited regulatory impact on the CAT.[13]

b.   Current CAT NMS Plan Requirements

The CAT NMS Plan contains broad requirements relating to the current reporting of, linkage and lifecycle processing of, and regulator access to Options Market Maker Quotes and related Reportable Events.

First, Section 6.3(d) of the CAT NMS Plan requires each Participant to record and electronically report to the Central Repository details for each order and each Reportable Event, including all Options Market Maker Quotes and related Reportable Events.[14] Under Section 6.4(d)(iii) of the CAT NMS Plan, "[w]ith respect to the reporting obligations of an Options Market Maker with regard to its quotes in Listed Options, Reportable Events required pursuant to Section 6.3(d)(ii) and (iv) shall be reported to the Central Repository by an Options Exchange in lieu of the reporting of such information by the Options Market Maker." Section 6.4(d)(iii)

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[13]   The Participants continue to evaluate additional cost savings measures and alternatives, which may include in the future continuing to evaluate eliminating Options Market Maker Quotes entirely from the CAT. Any such changes would require the submission of a proposed Plan amendment or exemption request to the SEC for consideration and approval.

[14]   *See supra* note 10.

also requires that, pursuant to the Compliance Rules of the Options Exchanges, Options Market Makers are required to report to the Options Exchange the time at which a quote in a Listed Option is sent to the Options Exchange (and, if applicable, any subsequent quote modifications and/or cancellation time when such modification or cancellation is originated by the Options Market Maker). Such time information shall be reported to the Central Repository by the Options Exchange in lieu of reporting by the Options Market Maker.

Second, CAT NMS Plan broadly requires all CAT Data reported to the Central Repository to be processed and assembled to create the complete lifecycle of each Reportable Event. The Plan Processor uses a "daisy chain approach" to link all Reportable Events and create a complete lifecycle of each order. Under this approach, "a series of unique order identifiers assigned to all order events handled by CAT Reporters are linked together by the Central Repository and assigned a single CAT-generated CAT-Order-ID that is associated with each individual order event and used to create the complete lifecycle of an order."[15] Data processing timelines are described in Section 6.1 and Section 6.2 of Appendix D of the CAT NMS Plan.

Finally, the CAT NMS Plan provides that regulators will have access to processed CAT Data through an online-targeted query tool and user-defined direct queries and bulk extracts. These requirements are described in Section 8.1 and Section 8.2 of Appendix D of the CAT NMS Plan.

c. Estimated Cost Savings

As described above, the proposed changes would result in approximately $20.0 million in annual cost savings in the first year with limited impact on the regulatory function of the CAT.[16] Given that the vast majority of Options Market Maker Quotes do not involve any execution or allocation and are used for limited regulatory purposes, the current cost associated with processing and storing such quotes—approximately $30 million in 2023—far outweighs the regulatory value. Although they will no longer be subject to validation, feedback, linkage and lifecycle processing, or Plan Processor enrichments (*e.g.*, next event timestamp, lifecycle sequence number, CAT-Lifecycle-ID), Options Market Maker Quotes will continue to be reported and ingested in the same manner they are today, and unlinked data will remain accessible to regulators by T+1 at 12:00 p.m. through BDSQL and Direct Read interfaces.

d. Proposed Revisions to CAT NMS Plan

Given the scope of requirements relating directly or indirectly to the current reporting of, linkage and lifecycle processing of, and regulator access to Options Market Maker Quotes and

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[15]   Appendix D, Section 3 of the CAT NMS Plan at D-8.
[16]   For a discussion of how cost savings estimates are calculated, *see supra* note 5. This estimate represents additional savings to be achieved following the implementation of the options quotes "single pass" proposal targeted for the end of April 2024. This estimate assumes an approximate 65% reduction in compute runtime associated with options exchange events, and an approximate 80% reduction in storage footprint through the elimination of versioned options quote data (e.g., interim, final, DIVER-optimized, OLA copies).

related Reportable Events that currently appear throughout the CAT NMS Plan, CAT LLC proposes to add a general provision to Appendix D that would expressly override any inconsistency with respect to Options Market Maker Quotes. The effect of this provision will be to override any requirements that generally apply to Reportable Events in the specific circumstance of Options Market Maker Quotes.

New Section 3.4 of Appendix D would be entitled "Requirements for Options Market Maker Quotes in Listed Options" and would state the following:

> **3.4   Requirements for Options Market Maker Quotes in Listed Options**
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> The provisions of this section shall govern the processing and storage of Options Market Maker Quotes in Listed Options and related Reportable Events and shall override any conflicting provisions in the CAT NMS Plan, this Appendix D, or Exchange Act Rule 17a-1.
>
> Options Market Maker Quotes in Listed Options must be reported to the Central Repository as provided under Section 6.4(d)(iii) of the CAT NMS Plan. This data will undergo ingestion only and such unlinked data will be made available to regulators by T+1 at 12:00 p.m. Eastern Time. Options Market Maker Quotes in Listed Options will not be subject to any requirement to link and create an order lifecycle, and will not undergo any validation, feedback, linkage, or enrichment processing. Options Market Maker Quotes in Listed Options will be accessible through BDSQL and Direct Read interfaces only and will not be accessible through the online targeted query tool."

In addition, CAT LLC proposes to amend certain provisions of Appendix D to include cross-references to new Section 3.4. First, CAT LLC proposes to amend Section 3 of Appendix D of the CAT NMS Plan to add the following statement: "As described in Section 3.4 of Appendix D, Options Market Maker Quotes in Listed Options and related Reportable Events will be subject to ingestion only and will not be subject to any linkage requirements." Second, CAT LLC proposes to amend Section 6.1 of Appendix D of the CAT NMS Plan to add the following statement: "For the avoidance of doubt, processing and storage of Options Market Maker Quotes in Listed Options and related Reportable Events shall be governed by Section 3.4 of Appendix D." Finally, CAT LLC proposes to amend Section 8.1.1 of Appendix D of the CAT NMS Plan to add the following statement: "As described in Section 3.4 of Appendix D, Options Market Maker Quotes in Listed Options and related Reportable Events will be accessible through BDSQL and Direct Read interfaces only and will not be accessible through the online targeted query tool."

> **2.   Move Raw Unprocessed Data and Interim Operational Copies of CAT Data Older Than 15 Days to a More Cost-Effective Storage Tier**
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> > **a.   Overview**

Under the current CAT NMS Plan, CAT Data must be "directly available and searchable electronically without manual intervention for at least six years," and within certain query tool response times.[17] This requirement applies not only to the final corrected data version that is delivered to regulators by T+5 at 8 a.m. ET, but also to raw unprocessed data and the various types of interim operational data that do not provide any value to CAT Reporters or to regulators after T+5, as well as copies of all submission and feedback files provided to CAT Reporters as part of the correction process (collectively, "Operational Data").

Specifically, interim operational data includes all processed, validated and unlinked data made available to regulators by T+1 at 12:00 p.m. ET, and all iterations of processed data made available to regulators between T+1 and T+5 (*i.e.*, the interim data version available at T+1 at 9:00 p.m. ET). Under the CAT NMS Plan, the Plan Processor is required to make such data directly available and searchable electronically by regulators without any manual intervention. When a regulator queries CAT data, the CAT provides the latest, most current version to the user. Interim operational data is supplanted in all CAT query tools by the final version of corrected data that is made available at T+5 at 8:00 a.m. ET, but remains available to regulators after T+5 "without manual intervention" in accordance with the CAT NMS Plan via the use of CAT data management APIs. Regulators generally access the latest, corrected version of CAT data; accordingly, interim operational data generally does not provide any regulatory value after the final corrected data version is delivered by T+5 at 8 a.m. ET. After four years of operation, the Plan Processor has not seen any regulatory usage of this interim operational data.

Subject to the Commission's approval, significant cost savings could be achieved by archiving Operational Data older than 15 days to a more cost-effective storage tier that is optimized for infrequent access. Operational Data not older than 15 days, as well as all final, corrected data, would remain accessible "without manual intervention" within required query tool response times.

In each case, it would require some "manual intervention" by the Plan Processor to obtain such archived data for regulators. Under Section 10.3 of Appendix D of the CAT NMS Plan, the Plan Processor maintains a CAT Help Desk to, among other things, assist Participants' regulatory staff and the SEC with questions and issues regarding obtaining and using CAT Data for regulatory purposes. Upon request by the SEC or one of the Participants to the CAT Help Desk, archived data would be restored by the Plan Processor to an accessible storage tier, at which point it would be available and searchable electronically by regulatory users in the same manner it is today. The Plan Processor will develop policies and procedures to ensure the confidentiality of any regulator requests to obtain Operational Data. Archived data will be

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[17]   CAT Data is available to the Participants' regulatory staff and to the SEC for regulatory purposes only.

restored generally within several hours or business days of a request, depending on the volume and size of the date range of the requested data restore. For example, a request to restore a single day of data may take less than 24 hours, whereas a request to restore a year's worth of data may take several days. To put this in context, when the Commission adopted the CAT NMS Plan, it noted that "[m]ost current data sources do not provide direct access to most regulators, and data requests can take as long as *weeks or even months* to process."[18]

Accordingly, the Participants believe that the anticipated savings associated with optimizing storage costs as described herein substantially outweigh the minimal impact on regulatory access to CAT Data.

b. Current CAT NMS Plan Requirements

Generally, Section 1.4 of Appendix D of the CAT NMS Plan provides that the Plan Processor must "[m]ake data directly available and searchable electronically without manual intervention for at least six years." Section 6.5(b)(i) of the CAT NMS Plan provides that, "[c]onsistent with Appendix D, Data Retention Requirements, the Central Repository shall retain the information collected pursuant to paragraphs (c)(7) and (e)(7) of SEC Rule 613 in a convenient and usable standard electronic data format that is directly available and searchable electronically without any manual intervention by the Plan Processor for a period of not less than six (6) years."

In addition, with respect to raw unprocessed data and interim operational copies of data created between T+1 and T+5, Section 6.2 of Appendix D of the CAT NMS Plan provides that, "[p]rior to 12:00 p.m. Eastern Time on T+1, raw unprocessed data that has been ingested by the Plan Processor must be available to Participants' regulatory staff and the SEC," and "[b]etween 12:00 p.m. Eastern Time on T+1 and T+5, access to all iterations of processed data must be available to Participants' regulatory staff and the SEC."

Under the current CAT NMS Plan, CAT Data must be accessible to regulatory users without "manual intervention." Obtaining data from archive storage initially would require some manual intervention by the Plan Processor (*i.e.*, via request to the FINRA CAT Help Desk). Upon request, data would be restored by the Plan Processor to an accessible storage tier, at which point it would be available and searchable electronically by regulatory users in the same manner it is today.

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[18] Exchange Act Release No. 79318 (Nov. 15, 2016), 81 Fed. Reg. 84696, 84833 (Nov. 23, 2016) (emphasis added). *See also* Exchange Act Release No. 67457, 77 Fed. Reg. 45722, 45729 (Aug. 1, 2012) (noting that obtaining audit trail data "can take days or weeks, depending on the scope of the information requested," and that the Commission "must commit a significant amount of time and resources to process and cross-link the data from the various formats used by different SROs before it can be analyzed and used for regulatory purposes").

In addition, Section 8.1.2 of Appendix D of the CAT NMS Plan sets forth certain performance requirements for the OTQT, including timeframes in which results must be returned for various types of queries.[19]

c. Estimated Cost Savings

Based on current data volumes, archiving Operational Data older than 15 days is expected to result in approximate annual cost savings of approximately $1.0 million.[20] CAT LLC believes that these cost savings substantially outweigh the minimal impact on regulatory access to CAT Data.

d. Proposed Revisions to CAT NMS Plan

CAT LLC proposes to amend the CAT NMS Plan to permit the Plan Processor to move Operational Data older than 15 days to a more cost-effective storage tier. Specifically, CAT LLC proposes to add new Section 6.3 to Appendix D of the CAT NMS Plan. New Section 6.3 would be entitled "Exceptions to Data Availability Requirements" and would state the following:

"**6.3 Exceptions to Data Availability Requirements**

Notwithstanding any other provision of the CAT NMS Plan, this Appendix D, or Exchange Act Rule 17a-1, the following types of data may be retained in an archive storage tier, in which case they will be made available upon request by Participant regulatory staff or the SEC to the CAT Help Desk. Archived data is not directly available and searchable electronically without manual intervention and will not be subject to any query tool performance requirements until it is restored to an accessible storage tier.

- All raw unprocessed data (i.e., as submitted data) and interim operational data older than 15 days. Interim operational data includes all processed, validated and unlinked data made available to regulators by T+1 at 12:00 p.m. ET, and all iterations of processed data made available to regulators between T+1 and T+5, but excludes the final version of corrected data that is made available at T+5 at 8:00 a.m. ET.

- All submission and feedback files older than 15 days.

In addition, CAT LLC proposes to add references to new Section 6.3 of Appendix D throughout the CAT NMS Plan. Specifically, CAT LLC proposes to add the phrase "subject to

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[19]   *See also* Exchange Act Release No. 98848 (Nov. 2, 2023), 88 Fed. Reg. 77128 (Nov. 8, 2023) (granting conditional exemptive relief from certain performance requirements related to the online targeted query tool).

[20]   For a discussion of how cost savings estimates are calculated, *see supra* note 5. This estimate represents additional savings to be achieved following the implementation of the options quotes "single pass" proposal targeted for the end of April 2024, which eliminates interim operational copies of options quotes.

the exceptions in Section 6.3 of Appendix D" to Section 6.5(d)(i) and Section 1.4 of Appendix D.

3. Provide an Interim CAT-Order-ID on an "As Requested" Basis

a. Overview

CAT LLC proposes to amend the CAT NMS Plan to provide for delivery of an interim CAT-Order-ID on an "as requested" basis, rather than on a regular ongoing basis. Specifically, where there is an immediate regulatory need (for example, in the case of a major market event), upon request of a senior officer of the Division of Trading and Markets, the Division of Enforcement, or the Division of Examinations to CAT LLC, the Plan Processor would be directed create an interim CAT-Order-ID and make it available to regulators by T+1 at 9 p.m. ET if the request is received prior to T+1 at 8 a.m. ET, or generally within 14 hours of receiving the request if such request was received after T+1 at 8 a.m. ET. This would preserve the SEC's ability to obtain an interim CAT-Order-ID on an as needed basis, while avoiding the substantial cost of delivering an interim CAT-Order-ID on a regular ongoing basis.

Subject to the proposals described above with respect to Options Market Maker Quotes, there would be no change to any other aspect of the CAT NMS Plan requirements for the processing of data, error feedback, and final delivery of data to regulators by T+5 at 8 a.m. ET, and no impact to Industry Members. Consistent with current CAT NMS Plan requirements, prior to 12:00 p.m. ET on T+1, regulators will continue to have access to raw unprocessed data that has been ingested by the Plan Processor, and between 12:00 p.m. on T+1 and T+5, regulators will continue to have access to all iterations of unlinked, processed data.

This change is estimated to result in approximately $2 million in annual compute savings, with minimal regulatory impact. Based on current data volumes, the estimated cost of an ad hoc interim CAT-Order-ID delivery is approximately $10,000 to $12,000 per request.[21] CAT LLC would add a separate line item to its budget to reflect costs related to any SEC requests to generate an interim CAT-Order-ID.

The Participants believe that the anticipated savings associated with this change substantially outweigh the minimal regulatory impact.

b. Current CAT NMS Plan Requirements

Appendix D, Section 6.1 of the CAT NMS Plan states that "Noon Eastern Time T+1 (transaction date + one day)" is the deadline for "initial data validation, lifecycle linkages and communication of errors to CAT Reporters." The CAT NMS Plan further explains that the Plan Processor must "link and create the order lifecycle" using a "daisy chain approach," in which , "a

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[21] This cost savings estimate has been calculated assuming the Plan Processor's implementation of functionality to provide a final CAT-Order-ID and lifecycle linkage for options quotes by T+2 at 8 a.m. ET (in lieu of T+5 at 8 a.m. ET), which is expected in April 2024.

series of unique order identifiers assigned to all order events handled by CAT Reporters are linked together by the Central Repository and assigned a single CAT-generated CAT-Order-ID that is associated with each individual order event and used to create the complete lifecycle of an order."[22]

Pursuant to a Commission exemptive order, the Plan Processor assigns an interim CAT-Order-ID by T+1 at 9 p.m. ET, rather than by the T+1 at noon Eastern Time deadline set forth in the CAT NMS Plan.[23] The Plan Processor subsequently provides a final CAT-Order-ID at T+5 at 8 a.m. ET, pursuant to the following timeline:

T+1 @ 8 a.m. ET:	Initial submissions due
T+1 @ 12 p.m. ET:	Initial data validation, communication of errors to CAT Reporters; unlinked data available to regulators
T+1 @ 9 p.m. ET:	Interim CAT-Order-ID available[24]
T+3 @ 8 a.m. ET:	Resubmission of corrected data
T+4 @ 8 a.m. ET:	Final lifecycle assembly begins, reprocessing of late submissions and corrections
T+5 @ 8 a.m. ET:	Corrected data available to Participant regulatory staff and the SEC

CAT LLC proposes to clarify that the Plan does not require assignment of interim CAT-Order-IDs on a regular ongoing basis; rather, interim CAT-Order-IDs shall be provided on an "as requested" basis. Specifically, upon request of a senior officer of the Division of Trading and Markets, the Division of Enforcement, or the Division of Examinations to CAT LLC, the Plan Processor would be directed create an interim CAT-Order-ID and make it available to regulators by T+1 at 9 p.m. ET if the request is received prior to T+1 at 8 a.m. ET, or generally within 14 hours of receiving the request if such request was received after T+1 at 8 a.m. ET. There would be no change to any other aspect of the processing timeline.

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[22]   Appendix D, Section 3 of the CAT NMS Plan at D-8.

[23]   Exchange Act Release No. 98848 (Nov. 2, 2023), 88 Fed. Reg. 77128 (Nov. 8, 2023). *See also* Exchange Act Release No. 97530 (May 18, 2023), 88 Fed. Reg. 33655 (May 24, 2023); Exchange Act Release No. 95234 (July 8, 2022), 87 Fed. Reg. 42247 (July 14, 2022); Exchange Act Release No. 90688 (Dec. 16, 2020), 85 Fed. Reg. 83634 (Dec. 22, 2020).

[24]   The Commission's exemptive order provides that the Plan Processor will no longer be required to provide an interim CAT-Order-ID for Options Quotes once it has developed and implemented the functionality to provide a final CAT-Order-ID and lifecycle linkage for Options Quotes by T+2 at 8 a.m. ET, including all enrichments currently provided for such order events at T+5 at 8 a.m. ET. When late or corrected data is received for Options Quotes between T+1 at 8 a.m. ET and T+4 at 8 a.m. ET, the Plan Processor must run, on an ad hoc basis, a second processing cycle such that lifecycle linkage and all enrichments currently provided for such order events are performed by T+5 at 8 a.m. ET. *See* Exchange Act Release No. 98848 (Nov. 2, 2023), 88 Fed. Reg. 77128, 77130 (Nov. 8, 2023). To the extent the proposed amendments are approved, the Plan Processor would no longer be required to create any lifecycle linkages for Options Market Maker Quotes.

c.   **Estimated Cost Savings**

Based on current data volumes, providing for delivery of an interim CAT-Order-ID on an "as requested" basis, rather than on a regular ongoing basis, is estimated to result in approximately $2 million in annual savings.[25] CAT LLC believes that these cost savings are readily justified given the minimal impact on regulatory access to CAT Data.

Based on current data volumes, the estimated cost of an ad hoc interim CAT-Order-ID delivery is approximately $10,000 to $12,000 per request.[26] CAT LLC would add a separate line item to its budget to reflect costs related to any SEC requests to generate an interim CAT-Order-ID.

While CAT LLC believes it would be reasonable and appropriate to incur such cost to address a pressing regulatory need on an as needed basis, such as in the event of a market event, the substantial cost of delivering an interim CAT-Order-ID on a continuous basis outweighs any regulatory benefit.

d.   **Proposed Revisions to CAT NMS Plan**

CAT LLC proposes to amend the CAT NMS Plan to eliminate the requirement to provide an interim CAT-Order-ID on a regular ongoing basis. Specifically, CAT LLC proposes to delete the phrase "lifecycle linkages" from the following bullet in Section 6.1 of Appendix D of the CAT NMS Plan: "Noon Eastern Time T+1 (transaction date + one day) – Initial data validation, lifecycle linkages and communication of errors to CAT Reporters." Similarly, CAT LLC proposes to delete the phrase "Life Cycle Linkage" from the second box in Figure A in Section 6.1 of Appendix D of the CAT NMS Plan. The box currently states the following: "12:00 PM ET T+1 Initial Validation, Life Cycle Linkage, Communication of Errors." With the change, this box would state "12:00 PM ET T+1 Initial Validation, Communication of Errors."

CAT LLC also proposes to amend the CAT NMS Plan to require CAT LLC to provide an interim CAT-Order-ID on an "as requested" basis. Specifically, CAT LLC proposes to add the following provision to Section 6.1 of Appendix D of the CAT NMS Plan: "Where there is an immediate regulatory need (for example, in the case of a major market event), upon request of a senior officer of the Division of Trading and Markets, the Division of Enforcement, or the

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[25]   For a discussion of how cost savings estimates are calculated, *see supra* note 5. This estimate represents additional savings to be achieved following the implementation of the options quotes "single pass" proposal targeted for the end of April 2024, which eliminates options quotes from the interim lifecycle processing. The average typical daily compute costs for interim lifecycle processing (Linker and ETL data processing) is estimated to be approximately $8,000/day to $10,000/day for a typical day based on current data volumes (including savings attributable to the daily ODCR and Compute Savings Plans), which totals approximately $2 million per year based on 252 trading days per year.

[26]   This estimate includes compute and storage costs for a daily ad hoc interim lifecycle processing, assuming the implementation of the options quotes "single pass" proposal, and is based on on demand rates for a typical day with average data volumes, less options quotes data volumes and their associated storage needs. The estimated number of authorized ad hoc runs per year that would be requested by the SEC cannot be predicted by CAT LLC or the Plan Processor.

Division of Examinations to CAT LLC, the Plan Processor shall be directed to create an interim CAT-Order-ID and make it available to regulators by T+1 at 9 p.m. ET if the request is received prior to T+1 at 8 a.m. ET, or generally within 14 hours of receiving the request if such request was received after T+1 at 8 a.m. ET."

4. Incorporate Exemptive Relief Permitting Deletion of Industry Test Data Older Than Three Months and Include CAIS Data

a. Overview; Prior Commission Exemptive Order

CAT Reporters engage in testing related to the reporting of order and transaction data to the CAT, both pursuant to required testing and on a voluntary basis. In connection with this testing, CAT LLC, through the Plan Processor, retains the test data submitted by Industry Members and Participants, feedback files related to such data, and output files that hold the detailed transactions, referred to herein as "Industry Test Data".[27]

On June 2, 2023, CAT LLC requested exemptive relief from Rule 17a-1 under the Exchange Act and certain provisions of the CAT NMS Plan relating to the retention of Industry Test Data beyond three months.[28] On November 27, 2023, the Commission granted the requested relief.[29] The exemptive request and the Commission's order apply only to Industry Test Data related to the CAT order and transaction system, not to the customer account and information system ("CAIS").

CAT LLC is now proposing to incorporate the exemptive relief into the CAT NMS Plan to clarify that data from industry testing for both Industry Members and Participants may be deleted after three months. In addition, the amendments would apply to Industry Test Data related to both transaction system and CAIS data.

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[27] Separately, CAT LLC, through the Plan Processor, also retains operational metrics associated with industry testing for six years in accordance with the Plan. Specifically, Section 1.2 of Appendix D of the CAT NMS Plan requires that "[o]perational metrics associated with industry testing (including but not limited to testing results, firms who participated, and amount of data reported and linked) must be stored for the same duration as the CAT production data." The proposed amendments do not affect such operational metrics.

[28] *See* Letter from Brandon Becker, CAT NMS Plan Operating Committee Chair, to Vanessa Countryman, Secretary, Commission, dated June 2, 2023, https://catnmsplan.com/sites/default/files/2023-06/06.02.23-Exemptive-Request-Test-Data-Retention.pdf. As noted in the exemptive request, CAT LLC does not believe that Industry Test Data constitutes documents covered by Rule 17a-1 under the Exchange Act and adheres to its view that the specific three-month period for Industry Test Data supersedes the more general, longer retention periods in the CAT NMS Plan, but submitted the exemptive request to obtain regulatory clarity in light of the SEC staff's comments that the longer retention periods set forth in Rule 17a-1 under the Exchange Act and the CAT NMS Plan may apply to Industry Test Data.

[29] Exchange Act Release No. 99023 (Nov. 27, 2023), 88 Fed. Reg. 84026 (Dec. 1, 2023).

b. Current CAT NMS Plan Requirements; Exchange Act Rule 17a-1

Appendix D of the CAT NMS Plan specifically requires the retention of Industry Test Data for three months only.[30] Specifically, Appendix D of the CAT NMS Plan states that "[d]ata from industry testing must be saved for three months."[31] Separate from this specific three-month retention requirement in Appendix D of the CAT NMS Plan, Rule 17a-1 under the Exchange Act and other more general recordkeeping provisions of the CAT NMS Plan set forth lengthier record retention periods of five and six years, respectively. Rule 17a-1 under the Exchange Act requires every national securities exchange and national securities association "to keep and preserve at least one copy of all documents, including all correspondence, memoranda, papers, books, notices, accounts, and other such records as shall be made or received by it in the course of its business as such and in the conduct of its self-regulatory activity,"[32] and to keep all such documents "for a period of not less than five years, the first two years in an easily accessible place, subject to the destruction and disposition provisions of Rule 17a-6."[33] The CAT is a facility of each of the Participants to the CAT NMS Plan. In addition, Section 9.1 of the CAT NMS Plan, the general recordkeeping provision for the CAT NMS Plan, incorporates by reference the requirements of Rule 17a-1 under the Exchange Act. Specifically, Section 9.1 of the CAT NMS Plan states, in relevant part, that "[t]he Company shall maintain complete and accurate books and records of the Company in accordance with SEC Rule 17a-1."

c. Estimated Cost Savings

Prior to the Commission's exemptive order, the Plan Processor had been retaining Industry Test Data beyond the three-month period prescribed by Appendix D of the CAT NMS Plan; eliminating Industry Test Data older than three months as permitted by the exemptive order is expected to achieve approximately $1 million per year in savings. The proposed amendments would not generate additional cost savings beyond those achievable pursuant to the exemptive order, but would incorporate the exemptive relief into the CAT NMS Plan itself.

d. Proposed Revisions to CAT NMS Plan

CAT LLC proposes to amend the CAT NMS Plan to clarify that Industry Test Data related to both the CAT order and transaction system and to CAIS may be deleted after three months. Specifically, CAT LLC proposes to revise the following bullet in Section 1.2 of Appendix D of the CAT NMS Plan: "Data from industry testing must be saved for three months. Operational metrics associated with industry testing (including but not limited to testing results, firms who participated, and amount of data reported and linked) must be stored for the same duration as the CAT production data." CAT LLC proposes to add the following as the second sentence of the bullet: "Notwithstanding any other provision of the CAT NMS Plan, this

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[30]   Ordinarily, specific provisions in a statute or regulation prevail over general provisions which might appear to the contrary. *See, e.g.*, *RadLAX Gateway Hotel, LLC v. Amalgamated Bank*, 566 U.S. 639, 645 (2012) (*citing Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 384 (1992)).

[31]   Appendix D, Section 1.2 of the CAT NMS Plan at D-4.

[32]   Rule 17a-1(a) under the Exchange Act.

[33]   Rule 17a-1(b) under the Exchange Act.

Appendix D, or Exchange Act Rule 17a-1, such test data (whether related to the CAT order and transaction system or the customer account and information system) may be deleted by the Plan Processor after three months." With this phrase, the bullet would state: "Data from industry testing must be saved for three months. Notwithstanding any other provision of the CAT NMS Plan, this Appendix D, or Exchange Act Rule 17a-1, such test data (whether related to the CAT order and transaction system or the customer account and information system) may be deleted by the Plan Processor after three months. Operational metrics associated with industry testing (including but not limited to testing results, firms who participated, and amount of data reported and linked) must be stored for the same duration as the CAT production data."

B.   Governing or Constituent Documents

Not applicable.

C.   Implementation of Amendment

The Participants propose to implement the proposal upon approval of the proposed amendment to the CAT NMS Plan.

D.   Development and Implementation Phases

Not applicable.

E.   Analysis of Impact on Competition

CAT LLC does not believe that the proposed amendment would result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Exchange Act. Indeed, CAT LLC believes that the proposed amendments will have a positive impact on competition, efficiency and capital formation. The proposed amendments will provide substantial savings in CAT costs while providing minimal impact on the regulatory use of CAT Data. Such substantial savings would inure to the benefit of all participants in the markets for NMS Securities and OTC Equity Securities, including Participants, Industry Members, and most importantly, the investors.

F.   Written Understanding or Agreements Relating to Interpretation of, or Participation in Plan

Not applicable.

G.   Approval by Plan Sponsors in Accordance with Plan

Section 12.3 of the CAT NMS Plan states that, subject to certain exceptions, the CAT NMS Plan may be amended from time to time only by a written amendment, authorized by the affirmative vote of not less than two-thirds of all of the Participants, that has been approved by the SEC pursuant to Rule 608 of Regulation NMS under the Exchange Act or has otherwise

become effective under Rule 608 of Regulation NMS under the Exchange Act. In addition, the proposed amendment was discussed during Operating Committee meetings. The Participants, by a vote of the Operating Committee taken on March 26, 2024, have authorized the filing of this proposed amendment with the SEC in accordance with the CAT NMS Plan.

H.   Description of Operation of Facility Contemplated by the Proposed Amendment

Not applicable.

I.   Terms and Conditions of Access

Not applicable.

J.   Method of Determination and Imposition, and Amount of, Fees and Charges

Not applicable.

K.   Method and Frequency of Processor Evaluation

Not applicable.

L.   Dispute Resolution

Not applicable.

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Thank you for your attention to this matter. If you have any questions or comments, please contact me at branbecker@deloitte.com.

Respectfully submitted,

/s/ Brandon Becker

Brandon Becker
CAT NMS Plan Operating Committee Chair

cc: The Hon. Gary Gensler, Chair
        The Hon. Hester M. Peirce, Commissioner
        The Hon. Caroline A. Crenshaw, Commissioner
        The Hon. Mark T. Uyeda, Commissioner
        The Hon. Jaime Lizárraga, Commissioner
        Mr. Hugh Beck, Senior Advisor for Regulatory Reporting
        Mr. Haoxiang Zhu, 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. Erika Berg, Special Counsel, Division of Trading and Markets
        CAT NMS Plan Participants

EXHIBIT A

Proposed Revisions to CAT NMS Plan

Additions **underlined**; deletions **[bracketed]**

* * * * *

ARTICLE VI

FUNCTIONS AND ACTIVITIES OF CAT SYSTEM

. . .

Section 6.5.   Central Repository.

. . .

(b)   Retention of Data.

(i)   Consistent with Appendix D, Data Retention Requirements, the Central Repository shall retain the information collected pursuant to paragraphs (c)(7) and (e)(7) of SEC Rule 613 in a convenient and usable standard electronic data format that is directly available and searchable electronically without any manual intervention by the Plan Processor for a period of not less than six (6) years**, subject to the exceptions in Section 6.3 of Appendix D**. Such data when available to the Participant regulatory staff and the SEC shall be linked.

(ii)   The Plan Processor shall implement and comply with the records retention policy contemplated by Section 6.1(d)(i) (as such policy is reviewed and updated periodically in accordance with Section 6.1(d)(i)).

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APPENDIX D

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1.2   Technical Environments

The architecture must include environments for production, development, quality assurance testing, disaster recovery, industry-wide coordinated testing, and individual on-going CAT Reporter testing. The building and introduction of environments available to CAT Reporters may be phased in to align with the following agreed upon implementation milestones:

- Development environment – the development environment must be created to build, develop, and maintain enhancements and new requirements. This environment must be separate from those listed below.

- Quality assurance environment – a quality assurance (QA) environment must be created to allow simulation and testing of all applications, interfaces, and data integration points contained in the CAT System.

    o The QA environment shall be able to simulate end-to-end production functionality and perform with the same operational characteristics, including processing speed, as the production environment.
    o The QA environment shall support varied types of changes, such as, but not limited to, the following:

        - Application patches;
        - Bug fixes;
        - Operating system upgrades;
        - Introduction of new hardware or software components;
        - New functionality;
        - Network changes;
        - Regression testing of existing functionality;
        - Stress or load testing (simulation of production-level usage); and
        - Recovery and failover.

    o A comprehensive test plan for each build and subsequent releases must be documented.

- Production environment – fully operational environment that supports receipt, ingestion, processing and storage of CAT Data. Backup/disaster recovery components must be included as part of the production environment.

- Industry test environment –

    o The Plan Processor must provide an environment supporting industry testing (test environment) that is functionally equivalent to the production environment, including:

- End-to-end functionality (e.g., data validation, processing, linkage, error identification, correction and reporting mechanism) from ingestion to output, sized to meet the standards of the production SLA;
- Performance metrics that mirror the production environment; and
- Management with the same information security policies applicable to the production environment.

o The industry test environment must also contain functionality to support industry testing, including:

- Minimum availability of 24x6;
- Replica of production data when needed for testing;
- Data storage sized to meet varying needs, dependent upon scope and test scenarios; and
- Support of two versions of code (current and pending).

o The industry test environment must support the following types of industry testing:

- Technical upgrades made by the Plan Processor;
- CAT code releases that impact CAT Reporters;
- Changes to industry data feeds (e.g., SIP, OPRA, etc.);
- Industry-wide disaster recovery testing;
- Individual CAT Reporter and Data Submitter testing of their upgrades against CAT interfaces and functionality; and
- Multiple, simultaneous CAT Reporter testing.

o The industry test environment must be a discrete environment separate from the production environment.
o The Plan Processor must provide the linkage processing of data submitted during coordinated, scheduled, industry-wide testing. Results of the linkage processes must be communicated back to Participants as well as to the Operating Committee.
o Data from industry testing must be saved for three months. **Notwithstanding any other provision of the CAT NMS Plan, this Appendix D, or Exchange Act Rule 17a-1, such test data (whether related to the CAT order and transaction system or the customer account and information system) may be deleted by the Plan Processor after three months.** Operational metrics associated with industry testing (including but not limited to testing results, firms who participated, and amount of data reported and linked) must be stored for the same duration as the CAT production data.

- o The Plan Processor must provide support for industry testing, including testing procedures, coordination of industry testing, publish notifications, and provide help desk support during industry testing.
- o The Participants and the SEC must have access to industry test data.

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1.4 Data Retention Requirements

The Plan Processor must develop a formal record retention policy and program for the CAT, to be approved by the Operating Committee, which will, at a minimum:

- Contain requirements associated with data retention, maintenance, destruction, and holds;

- Comply with applicable SEC record-keeping requirements;

- Have a record hold program where specific CAT Data can be archived offline for as long as necessary;

- Store and retain both raw data submitted by CAT Reporters and processed data; and

- Make data directly available and searchable electronically without manual intervention for at least six years**, subject to the exceptions in Section 6.3 of Appendix D**.

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3. Reporting and Linkage Requirements

All CAT Data reported to the Central Repository must be processed and assembled to create the complete lifecycle of each Reportable Event. Reportable Events must contain data elements sufficient to ensure the same regulatory coverage currently provided by existing regulatory reporting systems that have been identified as candidates for retirement.

Additionally, the Central Repository must be able to:

- Assign a unique CAT-Reporter-ID to all reports submitted to the system based on sub-identifiers, (e.g., MPIDs, ETPID, trading mnemonic) currently used by CAT Reporters in their order handling and trading processes.

- Handle duplicate sub-identifiers used by members of different Participants to be properly associated with each Participant.

- Generate and associate one or more Customer-IDs with all Reportable Events representing new orders received from a Customer(s) of a CAT Reporter. The Customer-ID(s) will be generated from a Firm Designated ID provided by the CAT Reporter for each such event, which will be included on all new order events.

- Accept time stamps on order events handled electronically to the finest level of granularity captured by CAT Reporters. Additionally, the CAT must be able to expand the time stamp field to accept time stamps to an even finer granularity as trading systems expand to capture time stamps in ever finer granularity. The Plan Processor must normalize all processed date/time CAT Data into a standard time zone/format.

In addition, the data required from CAT Reporters will include all events and data elements required by the Plan Processor in the Technical Specifications to build the:

- Life cycle of an order for defined events within a CAT Reporter;

- Life cycle of an order for defined events intra-CAT Reporter; and

- State of all orders across all CAT Reporters at any point in time.

The Plan Processor must use the "daisy chain approach" to link and create the order lifecycle. In the daisy chain approach, a series of unique order identifiers, assigned to all order events handled by CAT Reporters are linked together by the Central Repository and assigned a single CAT-generated CAT-Order-ID that is associated with each individual order event and used to create the complete lifecycle of an order.

By using the daisy chain approach the Plan Processor must be able to link all related order events from all CAT Reporters involved in the lifecycle of an order. At a minimum, the Central Repository must be able to create the lifecycle between:

- All order events handled within an individual CAT Reporter, including orders routed to internal desks or departments with different functions (e.g., an internal ATS);

- Customer orders to "representative" orders created in firm accounts for the purpose of facilitating a customer order (e.g., linking a customer order handled on a riskless principal basis to the street-side proprietary order);

- Orders routed between broker-dealers;

- Orders routed from broker-dealers to exchanges;

- Orders sent from an exchange to its routing broker-dealer;

- Executed orders and trade reports;

- Various legs of option/equity complex orders; and

- Order events for all equity and option order handling scenarios that are currently or may potentially be used by CAT Reporters, including:

    o Agency route to another broker-dealer or exchange;
    o Riskless principal route to another broker-dealer or exchange capturing within the lifecycle both the customer leg and street side principal leg;
    o Orders routed from one exchange through a routing broker-dealer to a second exchange;
    o Orders worked through an average price account capturing both the individual street side execution(s) and the average price fill to the Customer;
    o Orders aggregated with other orders for further routing and execution capturing both the street side executions for the aggregated order and the fills to each customer order;
    o Complex orders involving one or more options legs and an equity leg, with a linkage between the option and equity legs;
    o Complex orders containing more legs than an exchange's order management system can accept, causing the original order to be broken into multiple orders;
    o Orders negotiated over the telephone or via a negotiation system;
    o Orders routed on an agency basis to a foreign exchange;
    o Execution of customer order via allocation of shares from a pre-existing principal order;
    o Market maker quotes; and
    o Complex orders involving two or more options legs.

Additionally, the Central Repository must be able to:

- Link each order lifecycle back to the originating Customer;

- Integrate and appropriately link reports representing repairs of original submissions that are rejected by the CAT due to a failure to meet a particular data validation;

- Integrate into the CAT and appropriately link reports representing records that are corrected by a CAT Reporter for the purposes of correcting data errors not identified in the data validation process;

- Assign a single CAT-Order-ID to all events contained within the lifecycle of an order so that regulators can readily identify all events contained therein; and

- Process and link Manual Order Events with the remainder of the associated order lifecycle.

As described in Section 3.4 of Appendix D, Options Market Maker Quotes in Listed Options and related Reportable Events will be subject to ingestion only and will not be subject to any linkage requirements.

. . .

3.4   Requirements for Options Market Maker Quotes in Listed Options

The provisions of this section shall govern the processing and storage of Options Market Maker Quotes in Listed Options and related Reportable Events and shall override any conflicting provisions in the CAT NMS Plan, this Appendix D, or Exchange Act Rule 17a-1.

Options Market Maker Quotes in Listed Options must be reported to the Central Repository as provided under Section 6.4(d)(iii) of the CAT NMS Plan. This data will undergo ingestion only and such unlinked data will be made available to regulators by T+1 at 12:00 p.m. Eastern Time. Options Market Maker Quotes in Listed Options will not be subject to any requirement to link and create an order lifecycle, and will not undergo any validation, feedback, linkage, or enrichment processing. Options Market Maker Quotes in Listed Options will be accessible through BDSQL and Direct Read interfaces only and will not be accessible through the online targeted query tool.

. . .

6.1   Data Processing

CAT order events must be processed within established timeframes to ensure data can be made available to Participants' regulatory staff and the SEC in a timely manner. The processing timelines start on the day the order event is received by the Central Repository for processing. Most events must be reported to the CAT by 8:00 a.m. Eastern Time the Trading Day after the order event occurred (referred to as transaction date). The processing timeframes below are presented in this context. All events submitted after T+1 (either reported late or submitted later because not all of the information was available) must be processed within these timeframes based on the date they were received.

The Participants require the following timeframes (Figure A) for the identification, communication and correction of errors from the time an order event is received by the processor:

- Noon Eastern Time T+1 (transaction date + one day) – Initial data validation**[, lifecycle linkages]** and communication of errors to CAT Reporters;

- 8:00 a.m. Eastern Time T+3 (transaction date + three days) – Resubmission of corrected data; and

- 8:00 a.m. Eastern Time T+5 (transaction date + five days) – Corrected data available to Participant regulatory staff and the SEC.

Late submissions or re-submissions (after 8:00 a.m.) may be considered to be processed that day if it falls within a given time period after the cutoff. This threshold will be determined by the Plan Processor and approved by the Operating Committee. In the event that a significant portion of the data has not been received as monitored by the Plan Processor, the Plan Processor may decide to halt processing pending submission of that data.

Figure A: CAT Central Repository Data Processing Timelines
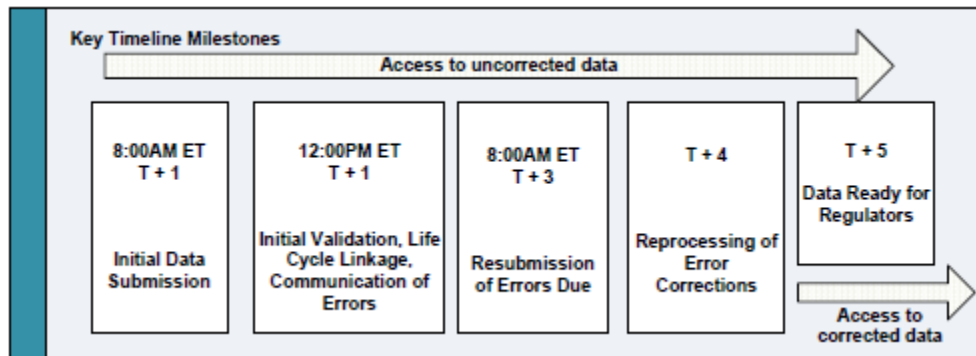
{**changes to second box in chart:** 12:00 PM ET T+1 Initial Validation, **[Life Cycle Linkage,]** Communication of Errors}

Where there is an immediate regulatory need (for example, in the case of a major market event), upon request of a senior officer of the Division of Trading and Markets, the Division of Enforcement, or the Division of Examinations to CAT LLC, the Plan Processor shall be directed to create an interim CAT-Order-ID and make it available to regulators by T+1 at 9 p.m. ET if the request is received prior to T+1 at 8 a.m. ET, or generally within 14 hours of receiving the request if such request was received after T+1 at 8 a.m. ET.

For the avoidance of doubt, processing and storage of Options Market Maker Quotes in Listed Options and related Reportable Events shall be governed by Section 3.4 of Appendix D.

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6.3   Exceptions to Data Availability Requirements

Notwithstanding any other provision of the CAT NMS Plan, this Appendix D, or Exchange Act Rule 17a-1, the following types of data may be retained in an archive storage tier, in which case they will be made available upon request by Participant regulatory staff or the SEC to the CAT Help Desk. Archived data is not directly available and searchable electronically without manual intervention and will not be subject to any query tool performance requirements until it is restored to an accessible storage tier.

- **All interim raw unprocessed data (i.e., as submitted data) and operational data older than 15. Interim operational data includes all processed, validated and unlinked data and made available to regulators by T+1 at 12:00 p.m. ET, and all iterations of processed data made available to regulators between T+1 and T+5, but excludes the final version of corrected data that is made available at T+5 at 8:00 a.m. ET.**

- **All submission and feedback files older than 15 days.**

. . .

8.1   Regulator Access

The Plan Processor must provide Participants' regulatory staff and the SEC with access to all CAT Data for regulatory purposes only. Participants' regulatory staff and the SEC will access CAT Data to perform functions, including economic analyses, market structure analyses, market surveillance, investigations, and examinations.

The CAT must be able to support, at a minimum, 3,000 regulatory users within the system. It is estimated that approximately 20% of all users will use the system on a daily or weekly basis while approximately 10% of all users will require advanced regulator-user access, as described below. Furthermore, it is estimated that there may be approximately 600 concurrent users accessing the CAT at any given point in time. These users must be able to access and use the system without an unacceptable decline in system performance.[34]

As stated in Appendix D, Data Security, the Plan Processor must be able to support an arbitrary number of user roles. Defined roles must include, at a minimum:

- Basic regulator users – Individuals with approved access who plan to use the Central Repository to run basic queries (e.g., pulling all trades in a single stock by a specific party).

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[34] Specific performance requirements will be included in the SLA.

- <u>Advanced regulator users</u> – Individuals with approved access who plan to use the Central Repository to construct and run their own complex queries.

Regulators will have access to processed CAT Data through two different methods, an online-targeted query tool and user-defined direct queries and bulk extracts.

As described in Section 3.4 of Appendix D, Options Market Maker Quotes in Listed Options and related Reportable Events will be accessible through BDSQL and Direct Read interfaces only and will not be accessible through the online targeted query tool.