

June 3, 2022

VIA EMAIL (tradingandmarkets@sec.gov)

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

Re: Request for Exemption from Certain Provisions of the National Market System Plan Governing the Consolidated Audit Trail Related to Reporting of Certain Verbal Activity, Floor and Upstairs Activity

Dear Ms. Countryman:

The Participants¹ in the National Market System Plan Governing the Consolidated Audit Trail (“CAT NMS Plan” or “Plan”)² respectfully request that the Securities and Exchange Commission (“Commission” or “SEC”) provide exemptive relief pursuant to the Commission’s authority under Section 36 of the Securities Exchange Act of 1934 (“Exchange Act”)³ and Rule 608(e) of Regulation NMS under the Exchange Act⁴ from enforcing certain reporting requirements of the CAT NMS Plan for Industry Members conducting certain activities on the floor of national securities exchanges as well as certain activities by Industry Members off exchange floors (“upstairs activity”).

Specifically, and for the reasons discussed in detail below, the Participants request that the Commission make permanent the exemption granted in its order dated November 12, 2020

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.; 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 See 15 U.S.C. § 78mm(a)(1), which provides, in relevant part, that the “Commission, by rule, regulation, or order, may conditionally or unconditionally exempt any person, security, or transaction, or any class or classes of persons, securities, or transactions, from any provision or provisions of this title or of any rule or regulation thereunder, to the extent that such exemption is necessary or appropriate in the public interest, and is consistent with the protection of investors.”

⁴ See 17 CFR § 242.608(e), which provides that “[t]he Commission may exempt from the provisions of this section, either unconditionally or on specified terms and conditions, any self-regulatory organization, member thereof, or specified security, if the Commission determines that such exemption is consistent with the public interest, the protection of investors, the maintenance of fair and orderly markets and the removal of impediments to, and perfection of the mechanisms of, a national market system.”

(the “November 2020 Exemption Order”),⁵ which temporarily exempted each Participant from the requirement in Section 6.4(d) of the CAT NMS Plan that requires each Participant, through its Compliance Rule,⁶ to require its Industry Members to record and electronically report to the Central Repository the following, until July 31, 2023: (1) floor broker verbal announcements of firm orders on an exchange that are otherwise reported as systematized orders; (2) market maker verbal announcements of firm quotes on an exchange trading floor; (3) telephone discussions between an Industry Member and a client that may involve firm bid and offer communications; and (4) unstructured electronic and verbal communications that are not currently captured by Industry Member order management or execution systems (*e.g.*, Bloomberg chats, text messages).

As a condition to the November 2020 Exemption Order, the Commission required that the Participants provide a written status update on the reporting of these quotes and orders by July 31, 2022, including the estimated costs of reporting these quotes and orders and an implementation plan for the reporting of these quotes and orders. In satisfaction of this requirement, the Participants are providing at Appendix A a written status update.⁷ As discussed below, given the absence of a technological or business solution to report such quotes and orders to CAT and the costs and unreliability of reporting them manually, the Participants do not believe it currently is possible to develop a feasible implementation plan.

The Participants believe that the requested relief is “necessary or appropriate in the public interest, and is consistent with the protection of investors,” and is “consistent with the public interest, the protection of investors, the maintenance of fair and orderly markets and the removal of impediments to, and perfection of the mechanisms of, a national market system.”⁸

I. Background

A. CAT Reporting Requirements

Under Rule 613(c)(7) of Regulation NMS and Sections 6.3(d) and 6.4(d) of the CAT NMS Plan, reportable events are based on, among other things, the receipt, routing and execution of orders.⁹ Rule 613(j)(8) and the CAT NMS Plan provide that “orders” 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.” An order is defined in Exchange Act Rule 300

⁵ Exchange Act Release No. 90405 (Nov. 12, 2020), 85 Fed. Reg. 73544 (Nov. 18, 2020), <https://www.sec.gov/rules/exorders/2020/34-90405.pdf>.

⁶ Section 1.1 of the CAT NMS Plan defines “Compliance Rule” to mean, “with respect to a Participant, the rule(s) promulgated by such Participant as contemplated by Section 3.11.”

⁷ As discussed below, the Participants do not believe that the status update in Appendix A negates the need for the Commission to conduct a full economic analysis of the costs and benefits that would be associated with reporting the quotes and orders that are the subject of this exemption request.

⁸ 17 CFR § 242.608(e).

⁹ Rule 613(j)(9) provides that “[t]he term *reportable event* shall include, but not be limited to, the original receipt or origination, modification, cancellation, routing, and execution (in whole or in part) of an order, or receipt of a routed order.”

as “any *firm* indication of a willingness to buy or sell a security, as either principal or agent, including any bid or offer quotation, market order, limit order, or other priced order.”¹⁰ In addition, a “bid” or “offer” is defined in Regulation NMS as the bid price or offer price communicated by a member of an exchange or association to any broker-dealer or to any customer, at which it is willing to buy or sell one or more round lots of an NMS security, as principal or agent, *but excluding indications of interest*.¹¹ Because indications of interest and non-firm indications of a willingness to buy or sell a security, are not “orders” or “bids” or “offers” under SEC rules, actions involving them do not constitute reportable events under the CAT NMS Plan.¹² Firm indications of a willingness to buy or sell a security are orders, bids or offers and have reportable events associated with them pursuant to the CAT NMS Plan.

B. Current Temporary Exemptive Relief

The Commission issued the November 2020 Exemption Order in response to the Participants’ exemption request dated July 1, 2020.¹³ The November 2020 Exemption Order granted temporary relief until July 31, 2023, for the reporting of: (1) floor broker verbal announcements of firm orders on an exchange that are otherwise reported as systematized orders; (2) market maker verbal announcements of firm quotes on an exchange trading floor; (3) telephone discussions between an Industry Member and a client that involve firm bid and offer communications; and (4) unstructured electronic communications that are not currently captured by Industry Member order management or execution systems (*e.g.*, Bloomberg chats, text messages). As a condition to this relief, the Commission required that the Participants provide a written status update on the reporting of these quotes and orders by July 31, 2022, including the estimated costs of reporting these quotes and orders and an implementation plan for the reporting of these quotes and orders. The Participants are providing a written status update responsive to the Commission’s request at Appendix A. In addition, as a condition to this relief, Participants must continue to require that firm verbal interest on an exchange floor be expressed pursuant to exchange rules approved by the Commission, and Participants must require that any firm verbal interest expressed by a floor broker must be related to a CAT-reportable systematized order, and any resulting trade must be reported to CAT.

In granting the temporary exemption, the Commission acknowledged the “current difficulties of implementing reporting of such events,” and that “the reporting of such orders and quotes involves complexity and/or costs, especially because capture of this information may require significant manual human intervention.”¹⁴ The Commission based its determination to grant the temporary exemptive relief on its belief that “over time, the costs of capturing this CAT reportable information could decline due to technological or business developments, such as

¹⁰ 17 CFR § 242.300(e) (emphasis added).

¹¹ 17 CFR 242.600(b)(8) (emphasis added).

¹² See FAQ B3 and B38 regarding indications of interest (“IOI”) and requests for quotes (“RFQ”), available at www.catnmsplan.com/faq/index.html.

¹³ Letter from Michael Simon, CAT NMS Plan Operating Committee Chair, to Vanessa Countryman, Secretary, Commission, dated July 1, 2020 (the “July 2020 Exemption Request”), <https://catnmsplan.com/sites/default/files/2020-07/07.01.2020-Exemptive-Request-Re-Verbal-Activity.pdf>.

¹⁴ November 2020 Exemption Order at 11-12.

through the usage of artificial intelligence or automated processes to capture and report such information, instead of reliance on the manual capture of order information.”¹⁵ In this regard, the Commission reasoned that “granting temporary exemptive relief to delay the reporting of verbal quotes and orders could allow Participants and Industry Members time to develop or implement technological changes necessary to capture this information at a lower cost.”¹⁶

II. Request for Exemption

A. The Activities Addressed in the November 2020 Exemption Order Were Not Contemplated by Rule 613 or the CAT NMS Plan and Were Not Included in the Cost-Benefit Analysis in the CAT NMS Plan Adopting Release

As an initial matter, and as described in the July 2020 Exemption Request, the Participants reiterate that the verbal floor activity and unstructured verbal and electronic upstairs activity at issue were not previously contemplated by Rule 613 or the CAT NMS Plan.¹⁷ Most notably, there was no cost-benefit analysis by the Commission related to the capture and reporting of this activity in the Rule 613 Adopting Release nor later in the CAT NMS Plan Adopting Release.¹⁸ The Participants nevertheless requested the exemptive relief to provide clarity to market participants.

The Commission disagreed with the Participants’ view in its November 2020 Exemption Order. However, the November 2020 Exemption Order did not cite to any discussion in the CAT NMS Plan or the CAT NMS Plan Adopting Release regarding the activity at issue. Nor did the Commission address the Participants’ assertion that there was no cost-benefit analysis related to the capture and reporting of this activity in the CAT NMS Plan Adopting Release. Rather, the Commission directed the Participants to undertake such analysis by July 31, 2022, as a condition to the relief.

This is a highly unusual circumstance. The CAT NMS Plan Adopting Release did not include any cost-benefit analysis with regard to capturing and reporting verbal floor activity and unstructured verbal and electronic upstairs activity. But the Commission now asserts that such activity is and always has been subject to Rule 613 and the CAT NMS Plan, and is requiring the Participants to undertake a cost analysis as a condition to exemptive relief. Had the Commission performed a cost-benefit analysis when it approved the CAT NMS Plan, it would not be necessary for the Participants to do so now.

¹⁵ *Id.* at 12.

¹⁶ *Id.*

¹⁷ See July 2020 Exemption Request at 5, 9-10.

¹⁸ See Joint Industry Plan; Order Approving the National Market System Plan Governing the Consolidated Audit Trail, Exchange Act Release No. 79318 (Nov. 15, 2016), 81 Fed. Reg. 84696 (Nov. 23, 2016) (“CAT NMS Plan Adopting Release”), <https://www.sec.gov/rules/sro/nms/2016/34-79318.pdf>.

B. The Technological Advancements Contemplated by the November 2020 Exemption Order for Capturing Verbal Floor and Upstairs Activities in an Automated Manner Have Not Materialized

The November 2020 Exemption Order is premised on the Commission’s belief that technological or business developments by July 2023, including potential breakthroughs in artificial intelligence, could allow the Participants and Industry Members to capture and report verbal/manual quotes and orders in a cost-effective manner and without manual human intervention.

Unfortunately, the technological or business breakthroughs contemplated by the November 2020 Exemption Order have not materialized. Nor do such advancements appear to be on the horizon. It simply is not possible using current technology or business practices to record, analyze and report in an automated manner (1) floor broker verbal announcements of firm orders on an exchange that are otherwise reported as systematized orders; (2) market maker verbal announcements of firm quotes on an exchange trading floor; (3) telephone discussions between an Industry Member and a client that may involve firm bid and offer communications; and (4) unstructured electronic and verbal communications that are not currently captured by Industry Member order management or execution systems (*e.g.*, Bloomberg chats, text messages). Neither natural language processing nor voice recognition technology currently is sophisticated enough to reliably, accurately and consistently capture, parse and analyze and report these interactions in the current trading environments and workflows.¹⁹ Accordingly, the Participants, CAT Advisory Committee members and Industry Member groups including the Financial Information Forum (FIF) that have considered this issue continue to believe that capturing and interpreting this activity in an automated matter is not possible with current technology.

C. Manually Capturing and Reporting Verbal Activity Would be Costly, Inconsistent, Prone to Error and Disruptive

The alternative—*i.e.*, manually capturing these events by requiring a human being to listen to every verbal interaction of every floor broker, market maker or upstairs trader either live or from tape, and/or to sift through electronic communications to determine if and precisely when a quote was given—is impracticable. Determining whether unstructured electronic and

¹⁹ Many commentators have observed that current AI technology is unable to complete tasks involving abstraction and judgment. *See, e.g.*, Isabelle Bousquette, *Mayo Clinic Assessing Google AI Tool as It Seeks More Insights From Patient Records*, WALL ST. J. (Mar. 24, 2022) (“[N]atural language processing . . . has made strides in recent years, say experts, although it remains early days.”); Ann-Marie Alcantara, *AI Customer-Service Startup Netomi Raises \$30 Million*, WALL ST. J. (Nov. 17, 2021) (noting that “conversational artificial intelligence is still in its infancy”); Steve Lohr, *What Ever Happened to IBM’s Watson?*, N.Y. TIMES (July 16, 2021) (reporting that IBM Watson “might well fail a second-grade reading comprehension test”); Jared Council, *Behind Microsoft’s Nuance Deal: Natural Language Processing, Explained*, WALL ST. J. (Apr. 13, 2021) (“NLP systems currently in use are designed for very specific uses, and their performance tends to break down when they encounter something outside of that zone.”); Harry Surden, *Artificial Intelligence and Law: An Overview*, 35 GA. ST. U. L. REV. 1305, 1337 (2019) (explaining that current AI technology “is not very good at dealing with abstractions, understanding meaning, transferring knowledge from one activity to another, and handling completely unstructured or open-ended tasks”).

verbal activity involves a firm bid or offer would be a manual, subjective process that could be highly prone to error resulting in overreporting and/or underreporting to the CAT. As discussed in Appendix A, manual review would be cost prohibitive as Industry Members that are floor brokers and market makers—many of which are small firms—will be required to hire additional staff and develop new technology resources to capture and analyze this activity. Such review also would be resource intensive, which could cause a CAT Reporter to miss the requirement to report CAT data by T+1 by 8 am ET.

In addition, due to the inherent subjectivity associated with manual review, capturing this activity manually will likely result in inconsistent or less accurate data across CAT Reporters. For instance, broker-dealers on opposite sides of a negotiation may reach different results with respect to whether and when a bid/offer has occurred (*i.e.*, one party may view a discussion of potential pricing as a mere indication, while the recipient may view it as a bid/offer). This ambiguity will cause Industry Members to capture the same activity differently, resulting in a misleading or incomplete view of the transaction. Likewise, this inherent subjectivity will limit regulators' ability to determine compliance with any reporting requirement. Recording the time of verbal interactions either live or from tape would suffer from additional challenges as such conversations involve aspects of negotiations that are not reportable to CAT (*e.g.*, RFQs and IOIs) and that must be distinguished from firm orders that are reportable to CAT. Furthermore, capturing and reporting these events would create significant new recordkeeping requirements; the Participants believe that the Commission should not expand recordkeeping requirements without appropriate rulemaking.

For these reasons, neither floor brokers, exchange market makers nor Industry Members conducting telephone and other verbal discussions or unstructured electronic communications currently have the means to collect the data for these events for purposes of CAT reporting. Attempting to capture these events would significantly disrupt floor trading, current market practices and business models, and could adversely impact the execution quality and efficiencies. The Participants believe that the difficulty and costs that would be associated with reporting verbal and upstairs activity are such that a requirement to do so will change market behavior—to the detriment of customers. Rather than incur the costs and disruption necessary to report such activity, firms and markets are likely to gravitate toward the use of indications of interest (which are clearly not reportable) rather than firm orders/bids and offers. The Participants do not see how that is in the interests of investors. Given the likelihood that reporting will result in such changes, if the Commission believes that it should nonetheless require reporting of verbal floor-based and upstairs activity, the Participants believe that, as a matter of good policy, it should do so through the rulemaking process—not through a CAT reporting requirement that would have the effect of making current market practices impracticable.

D. Including These Activities in the CAT Would Provide Limited Added Benefit for Regulatory and Surveillance Purposes

The Participants do not believe that adding the events addressed in November 2020 Exemption Order to the CAT would provide meaningful value from a regulatory/surveillance perspective. As described in the July 2020 Exemption Request, every order that is verbalized on

an exchange floor has already been systematized and the systematization (*i.e.*, the origination or receipt of an order) is already reportable to CAT.²⁰ Likewise with respect to upstairs activity, manual orders already are reportable to CAT.

Similarly, the Advisory Committee believes that bilateral negotiations in upstairs activity, such as between asset brokers and broker-dealers, or between two broker-dealers, are currently captured when the broker either creates an order, as in from an asset manager, or accepts an order, as in from another broker-dealer, and when the trade execution occurs. In all of these “event types,” all the necessary information required to fulfill CAT requirements—customer, broker-dealer, time stamps, FDID, etc.—are captured; no additional information, such as the verbal discussion preceding the order and trade, needs to be captured to satisfy CAT requirements.

The ultimate regulatory value of reporting the verbal floor and verbal and unstructured electronic upstairs activities at issue is questionable, given the scope of data that is already available in CAT. Moreover, because they are not widely disseminated, these activities do not lend themselves to the types of market manipulation considered in the adoption of Rule 613.²¹ Any incremental value added for regulatory/surveillance purposes would be significantly outweighed by costs imposed on, and adverse impact to, Industry Members (including their customers) and Participants.

III. Written Status Update

The November 2020 Exemption Order requires the Participants to provide a written status update on the reporting of these quotes and orders by July 31, 2022, including the estimated costs of reporting these quotes and orders and an implementation plan for the reporting of these quotes and orders. The Participants are providing at Appendix A the written status update required by the November 2020 Exemption Order. As noted above, the Participants do not believe that it is practicable to report the quotes and orders subject to the November 2020 Exemption Order, negating the ability to develop a reasonable implementation plan.

IV. Request for Exemption

For the reasons discussed above, and to provide clarity to market participants, the Participants request that the Commission amend the existing exemption relief to make it permanent.

* * * * *

²⁰ See July 2020 Exemption Request, Exhibit A (providing a detailed description of workflow processes on each exchange floor).

²¹ See, e.g., Exchange Act Release No. 67457 (July 18, 2012), 77 Fed. Reg. 45722 (Aug. 1, 2012) (explaining that the CAT would be useful in investigating frontrunning, spoofing and layering in today’s high-speed electronic markets).

Ms. Vanessa Countryman

June 3, 2022

Page 8

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Mike Simon". The signature is fluid and cursive, with a prominent initial "M" and "S".

Mike Simon

CAT NMS Plan Operating Committee Chair

cc: The Hon. Gary Gensler, Chair
The Hon. Hester M. Peirce, Commissioner
The Hon. Allison Herren Lee, Commissioner
The Hon. Caroline A. Crenshaw, Commissioner
Hugh Beck, Senior Advisor for Regulatory Reporting
Haoxiang Zhu, Director, Division of Trading and Markets
David S. Shillman, Associate Director, Division of Trading and Markets
David Hsu, Assistant Director, Division of Trading and Markets
Mark Donohue, Senior Policy Advisor, Division of Trading and Markets
Erika Berg, Special Counsel, Division of Trading and Markets

APPENDIX A

Written Status Update Required by the November 2020 Exemption Order Estimated Costs and Implementation Plan

As a condition to the November 2020 Exemption Order, the Commission required that the Participants provide a written status update on the reporting of these quotes and orders by July 31, 2022, including the estimated costs of reporting these quotes and orders and an implementation plan for the reporting of these quotes and orders. This written status update is being provided to the Commission as required by the November 2020 Exemption Order.

While it is difficult to predict costs that would be involved in reporting the activity subject to the November 2020 Exemption Order with precision, it is clear that reporting these events would have a material and costly impact on exchange floors, floor brokers and Industry Member business models and, in turn, their clients, as information on these events is not currently captured and it is impracticable to capture such information with current technology.

The cost concerns in this regard are further pronounced when viewed in context with the already significant and increasing overall CAT operating costs.

* * *

A. *Scope.* The Participants considered the following activity: (1) floor broker verbal announcements of firm orders on an exchange that are otherwise reported as systematized orders; and (2) market maker verbal announcements of firm quotes on an exchange trading floor. The Participants also considered the views and costs estimates of members of the CAT Advisory Committee and FIF with respect to: (1) telephone discussions between an Industry Member and a client that may involve firm bid and offer communications; and (2) unstructured electronic and verbal communications that are not currently captured by Industry Member order management or execution systems (*e.g.*, Bloomberg chats, text messages).

For purposes of this analysis, the Participants assume a “status quo” in market behavior. As described in the letter, if the Commission requires this floor and upstairs activity to be reported to CAT, firms and markets are likely to gravitate toward the use of indications of interest (which are clearly not reportable) rather than firm orders/bids and offers. The November 2020 Exemption Order does not call for, and the Participants have not assessed, the potential negative impact on the price discovery process or market structure generally that could result from this shift in market behavior. As noted above, the Participants do not believe that a shift away from the use of orders to indications of interest would be in the interests of investors.

B. *Process.* The Participants analyzed two primary methods for facilitating the reporting of verbal floor and verbal and unstructured electronic upstairs activity to the CAT: (1) automated reporting using technology (*e.g.*, via voice recognition technology, natural language processing, and artificial intelligence), without human intervention; and (2) manual reporting using new personnel (*i.e.*, via the hiring of additional compliance personnel).

1. *Technological/Automated Methods.* The November 2020 Exemption Order is premised on the Commission’s belief that technological or business developments by July 2023,

including potential breakthroughs in artificial intelligence or other automated processes, could allow the Participants and Industry Members to capture and report verbal floor and verbal and unstructured electronic upstairs activity in a cost-effective manner and without manual human intervention.

The Participants evaluated whether technology or business methods have in fact evolved sufficiently since the issuance of the November 2020 Exemption Order to provide a viable method for reporting these orders and quotes in an automated fashion. To this end, the Participants consulted an industry expert in technology communications methods and queried their own internal experts, including experts in floor activity, and found that the advancements in technology contemplated by the November 2020 Exemption Order have not materialized.

The Participants also solicited, via FIF, experts associated with Industry Members. In an FIF meeting on April 13, 2022, participating Industry Members unanimously confirmed that the underlying technology for capturing the activity at issue has not changed in significant ways since the November 2020 Exemption Order. The discussion considered pure verbal interactions, interactions over instant messaging, interactions over email, and combinations of the foregoing. The firms agreed that they had not employed any new technology, nor were they aware of any proven technology, that would make this problem easier to solve. Specifically, the participating firms cited the following confounding issues:

- For “talk to text” technology—voice recognition technology is still too error prone and performs poorly in noisy environments;
- For capturing and analyzing unstructured communications from instant messages or email—no firms are currently using natural language processing in this manner, and they do not feel it has advanced significantly enough to capture and analyze the activity at issue. Further, not only are these unstructured messages, but traders in some firms have developed a short-hand with certain clients, which is not consistent between clients, and which cannot be accurately and consistently analyzed without human intervention.
- For combinations of the above—synthesizing input across modalities compounds the foregoing issues and is very difficult.

Finally, the Participants also consulted publicly-available reports regarding the state of current technology, particularly with respect to voice recognition technology and natural language processing. News reports and other commentators have observed that current AI technology is unable to complete tasks involving abstraction and judgment, which is critical to

reliably, accurately and consistently capturing, parsing, analyzing and reporting these interactions in the current trading environments and workflows.¹

For these reasons, the Participants have determined that capturing and interpreting verbal floor and verbal and unstructured electronic upstairs activity in an automated matter is not possible with current technology.

2. Manual Methods. Given that automated processing of verbal floor and verbal and unstructured electronic upstairs activity is not possible with current technology, the only available alternative would be to capture these events by manual methods. Manual capture of these events would require a human being to listen to and analyze every floor broker, market maker or upstairs trader communication either live or from tape, and/or to review and analyze electronic communications to determine if and precisely when a quote was given.

With respect to floor activity, the Participants believe that the discussions of each floor broker and market maker would need to be tracked on a one-to-one basis by a permanent full-time equivalent (FTE) responsible for parsing and interpreting when a CAT-reportable event has occurred.²

The Participants also considered whether floor brokers and market makers could capture their own verbal interactions in real-time (*i.e.*, to pause in order to record a verbalized quote in real-time), but concluded this would not be possible without severely impacting existing workflows and the floor brokers and market makers' ability to participate in a fast-moving market. The Participants also considered equipping each floor broker and market maker with a sound recording device, and having separate compliance personnel listen to and analyze those recordings on a same-day basis, but concluded that this would be impracticable and prone to error, and would create additional burdensome recordkeeping requirements.

With respect to verbal and unstructured electronic upstairs activity, similar manual intervention would be required to consistently capture, parse, analyze and report these interactions.

As described in the letter, the Participants believe that manual review is a subjective process that will likely result in inconsistent or less accurate data across CAT Reporters, and

¹ See, e.g., Isabelle Bousquette, *Mayo Clinic Assessing Google AI Tool as It Seeks More Insights From Patient Records*, WALL ST. J. (Mar. 24, 2022) (“[N]atural language processing . . . has made strides in recent years, say experts, although it remains early days.”); Ann-Marie Alcantara, *AI Customer-Service Startup Netomi Raises \$30 Million*, WALL ST. J. (Nov. 17, 2021) (noting that “conversational artificial intelligence is still in its infancy”); Steve Lohr, *What Ever Happened to IBM’s Watson?*, N.Y. TIMES (July 16, 2021) (reporting that IBM Watson “might well fail a second-grade reading comprehension test”); Jared Council, *Behind Microsoft’s Nuance Deal: Natural Language Processing, Explained*, WALL ST. J. (Apr. 13, 2021) (“NLP systems currently in use are designed for very specific uses, and their performance tends to break down when they encounter something outside of that zone.”); Harry Surden, *Artificial Intelligence and Law: An Overview*, 35 GA. ST. U. L. REV. 1305, 1337 (2019) (explaining that current AI technology “is not very good at dealing with abstractions, understanding meaning, transferring knowledge from one activity to another, and handling completely unstructured or open-ended tasks”).

² This is a conservative estimate. Each floor broker and market maker may require more than one FTE.

could result in overreporting and/or underreporting to the CAT. For purposes of this analysis, the Participants have not separately calculated the costs of such inconsistencies and/or errors.

C. *Estimated Costs.* Subject to the foregoing, the Participants estimated the cost of manually capturing and analyzing the floor and upstairs activity at issue based on the following assumptions.

1. *Estimated Costs for Exchange Floor Activity.* The Participants have considered how to estimate the cost of hiring additional staff to manually capture, analyze and report verbal floor activity. As described above, the Participants believe that the discussions of each floor broker and market maker would need to be tracked on a one-to-one basis by a permanent full-time equivalent (FTE) employee responsible for parsing and interpreting when a CAT-reportable event has occurred. The Participants conservatively estimate that each FTE would cost approximately \$130,000 to \$228,000 annually, inclusive of compensation and benefits. On the relevant NYSE, Cboe and Nasdaq exchanges alone—which are among the largest at issue—there are approximately 495 floor brokers and designated market makers, resulting in an estimated annual cost of \$64.35 million to \$112.86 million per year to capture exchange floor activity. (These informal cost projections related to verbal exchange floor activity do not include the separate, additional cost of capturing and reporting upstairs negotiations, which are addressed separately below.)

It is important to note that, as the reporting obligations at issue apply to Industry Members, the burden of this reporting requirement would fall disproportionately on small independent-broker dealers who comprise the bulk of floor traders. Smaller brokerage firms do not have the resources to build out the compliance infrastructure necessary to implement manual review and many may be driven out of business by the Commission’s interpretation absent permanent relief. In addition, the Participants believe that the manual collection, analysis and reporting of verbal floor activity will be fraught with the potential for lack of granularity, errors and inconsistencies, effectively undermining the utility of the data used by regulators.

In addition to direct personnel costs, the relevant exchanges do not currently have room for the additional compliance staff to be present on the floor. Accordingly, there would be additional costs for building additional space required to support the increased number of people. For its part, Cboe estimates an initial one-time cost of approximately \$20-30 million.

2. *Estimated Costs for Verbal and Unstructured Electronic Upstairs Activity.* In 2020, the CAT Advisory Committee/Financial Information Forum estimated that the cost of hiring additional trader assistants/compliance staff and updating firm systems in order to capture and report upstairs negotiations to be approximately \$485 to \$590 million.³ As described in the July 2020 Exemption Request, these cost projections recognize that Industry Members do not currently collect data for these scenarios, and do not have the means today to collect such today. The Participants understand that FIF currently is updating its 2020 estimate.

3. *Total Cost Estimate.* Accordingly, excluding expenditures relating to the cost of building additional space to accommodate increased personnel, the estimated annual cost of

³ See July 2020 Exemption Request at 10.

capturing the activity at issue is approximately \$549.35 million to \$702.86 million per year, which would be borne primarily by the industry.

D. *Implementation Plan.* Given the absence of a technological or business solution to report such quotes and orders to CAT and the costs and unreliability of reporting them manually as described above, the Participants do not believe it currently is possible to develop a feasible implementation plan.⁴

The November 2020 Exemption Order expires on July 31, 2023. The practical consequence of this deadline and the scope and nature of activity at issue is that, absent further exemptive relief, Industry Members and Participants will be required to incur millions of dollars in costs well in advance of July 2023, and there will be no way to recover those investments once made. The costs and burden of implementation would fall primarily on Industry Members in the form of personnel and compliance costs, as described above. For example, it is currently anticipated that Industry Members would need to begin to hire and train additional compliance staff to manually capture, analyze and report the activity at issue in the first half of 2023. Similarly, certain Participants would be required to incur one-time costs associated with building additional space to accommodate additional compliance staff on exchange floors. Initial construction planning would need to commence no later than the second half of 2022 in order to ensure a completion date of July 31, 2023.

In light of the above analysis, the Participants have determined to address the continuing cost and practical difficulties of reporting this activity by seeking the permanent exemptive relief set forth in the letter. As described in the letter, and as this written status update demonstrates, capturing and analyzing this activity by automated means without manual intervention is not possible with current technology, and doing so manually via new personnel is impracticable. As a practical matter, if the Commission requires this activity to be reported to CAT, existing workflows are likely to shift to rely more heavily on indications of interest or similar methods outside the definition of an order, thereby avoiding CAT reporting requirements.

⁴ The Participants note that, from a Plan Processor perspective, accepting the reporting of the quotes and orders that are the subject of the exemption request would require minimal systems changes; what is infeasible is manually capturing, parsing, analyzing and reporting these interactions in the current trading environments and workflows.