

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-94915; File No. SR-EMERALD-2022-16)

May 16, 2022

Self-Regulatory Organizations; MIAX Emerald, LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change to Amend the MIAX Emerald Fee Schedule to Adopt Fees for the High Precision Network Time Signal Service

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”),¹ and Rule 19b-4 thereunder,² notice is hereby given that on May 5, 2022, MIAX Emerald, LLC (“MIAX Emerald” or “Exchange”) filed with the Securities and Exchange Commission (“Commission”) a proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

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

The Exchange is filing a proposal to amend the MIAX Emerald Fee Schedule (the “Fee Schedule”) to adopt fees for a new service known as the “High Precision Network Time Signal Service.”³

The text of the proposed rule change is available on the Exchange’s website at <http://www.miaxoptions.com/rule-filings/emerald>, at MIAX’s principal office, and at the Commission’s Public Reference Room.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

³ See, generally, Exchange Rule 531(d).

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

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

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

1. Purpose

The Exchange provides a resilient and robust technology platform, deterministic functionality, transparent trading platform, and a culture of technological innovation to the U.S. options market. In keeping with its culture of innovation, the Exchange recently established a new service known as the “High Precision Network Time Signal Service” (“HPNTSS” or the “Service”),⁴ which is available for purchase by subscribers on a voluntary basis. The Exchange now proposes to adopt fees for the Service, which is described under Exchange Rule 531(d).⁵ In sum, Members are able to utilize the Service to synchronize their time recording systems to those of the Exchange at sub-nanosecond level accuracy for correlated latency measurements between the Exchange’s and the Members’ systems time measurements related to the same message or order. The Service is an optional product available to any Member that chooses to subscribe.

⁴ See Securities Exchange Act Release No. 94335 (March 1, 2022), 87 FR 12756 (March 7, 2022) (SR-EMERALD-2021-38) (Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment No. 1, To Amend Exchange Rule 531 To Provide for a New Service Called the High Precision Network Time Signal Service) (“Approval Order”).

⁵ See Exchange Rule 531(d).

However, the Exchange anticipates that latency sensitive Members would primarily subscribe to the Service to help them measure latency in a manner consistent with their trading behavior and the evolving pace of trading and technology in today's markets. The Exchange anticipates that Members that employ business models that are not latency sensitive, such as those that only enter resting liquidity, may not find interest in the Service and elect not to subscribe to it. The Service may also not be useful for order routing firms that connect to the Exchange solely as part of their best execution obligations or to comply with the trade-through requirements under Chapter XIV of the Exchange's Rules.⁶

The Exchange proposes to assess a monthly fee of \$3,600 for subscribing to the Service. As such, the Exchange proposes to amend the Fee Schedule to adopt new Section 8), Services, to provide that subscribers may purchase the Service for a monthly fee of \$3,600. Subscribers may cancel their subscription at any time. The Exchange proposes to specify that for mid-month subscriptions to the Service, new subscribers will be charged for the full calendar month for which they subscribe. A second time signal is available with each subscription to the Service for redundancy and disaster recovery purposes. The Exchange initially filed the proposed fee change on March 30, 2022 with the fees being effective on April 1, 2022.⁷ The Exchange withdrew that proposed fee change and submitted this filing on May 5, 2022. The purpose of this revised filing is to provide additional description and justification for the proposed fee.

In sum, the Service enables subscribers to synchronize their own primary clock devices to

⁶ See Amendment No. 1 at note 26 and accompanying text available on the Commission's website at <https://www.sec.gov/comments/sr-emerald-2021-38/sremerald202138-20116580-268058.pdf>. See also Chapter XIV of the Exchange's Rules, which incorporates by reference Rule 1401, Order Protection, of the Exchange's affiliate, Miami International Securities Exchange, LLC ("MIAX").

⁷ See Securities Exchange Act Release No. 94697 (April 12, 2022), 87 FR 23000 (April 18, 2022) (SR-EMERALD-2022-12).

the Exchange’s primary clock device, by receiving time signals from the Exchange via a separate and dedicated 1 gigabit (“Gb”) connection that is currently offered by the Exchange and utilized by market participants to connect to the Exchange’s System.⁸ The Service simply provides subscribers with the Exchange’s time signal at a sub-nanosecond level and nothing else. The sub-nanosecond time signal would tell the subscriber the Exchange’s time at a sub-nanosecond level at a particular point in time. The subscriber may then use that time signal to synchronize their own primary clock to the Exchange’s primary clock at the more acute sub-nanosecond level.⁹ Subscribers would utilize their own Enhanced PTP device¹⁰ to synchronize the clocks within the subscriber’s computer and network infrastructure, as appropriate, at a sub-nanosecond level. This would enable the subscriber to record certain times an order or message traveled through and leaves the subscriber’s system at a sub-nanosecond level.

The Service is not a connectivity product and subscribers are able to utilize an existing

⁸ The Exchange did not provide a new connectivity option to receive time signals via the Service. The Service is not a connectivity product and subscribers would only need to utilize an existing connectivity method offered by the Exchange to utilize the Service via a dedicated connection. See Approval Order, *supra* note 4 at note 22 and accompanying text. See also MIAX Emerald Options Alert, “Update: The Introduction of the High Precision Network Time Signal (Enhanced PTP/White Rabbit) Beginning April 1, 2022,” March 3, 2022 (notifying potential subscribers that the Service requires a dedicated 1Gb connection), available at <https://www.miaxoptions.com/alerts/2022/03/03/miax-emerald-options-update-introduction-high-precision-network-time-signal>. See Fee Schedule, Section 5, System Connectivity Fees, for information regarding 1 Gb connectivity. A Member that subscribes to the Service would also have to pay \$1,400 per month for a 1Gb connection. *Id.*

⁹ See *supra* note 4 for a detailed description of the Service. See also MIAX Emerald Options - Update: The Introduction of the High Precision Network Time Signal (Enhanced PTP/White Rabbit) Beginning April 1, 2022 (March 3, 2022), available at <https://www.miaxoptions.com/alerts/2022/03/03/miax-emerald-options-update-introduction-high-precision-network-time-signal>.

¹⁰ An Enhanced PTP clock synchronization device captures time and coordinates time synchronization within a network at a sub-nanosecond level.

connectivity method (separate and dedicated 1 Gb connection) offered by the Exchange to utilize the Service. The Service simply provides enhanced time synchronization that may be utilized by a subscriber to adjust their own systems. The Service is not a market data product or access/connectivity service. Subscribers may continue to use their existing methods to connect to and send orders to the Exchange. The Service will not include any trading data regarding the subscriber's activity on the Exchange or include any data from other trading activity on the Exchange.

The Exchange established the Service in response to demand for tighter and more accurate clock synchronization options with the Exchange's network and requests for tools that would enable Members to better measure traversal times between their network and that of the Exchange at a more granular level. As described above, the Exchange anticipates that a small subset of Members who are latency sensitive would find the Service useful. The Service is offered to subscribers on a completely voluntary basis in that the Exchange is not required by any rule or regulation to make the Service available. It is a business decision of each Member whether to subscribe to the Service and each Member may choose to do so based on their business models and needs.

The Exchange began to offer the Service and charge the proposed fees on April 1, 2022. The Exchange anticipates that at most five to six Members may find the Service useful and ultimately choose to subscribe.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with Section 6(b) of the Act,¹¹ in general, and furthers the objectives of Section 6(b)(5) of the Act,¹² in particular, in that it is not designed to permit unfair discrimination among customers, brokers, or dealers. The Exchange also believes that its proposal to adopt fees for the Service is consistent with Section 6(b)(4) of the Act¹³ because it represents an equitable allocation of reasonable dues, fees and other charges among market participants.

The Exchange operates in a highly competitive environment in which 16 U.S. registered equity options exchanges compete for market share. Based on publicly available information, no single options exchange has more than 13% of the equity options market share and currently the Exchange represents only approximately 3.97% of the market share.¹⁴ The Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. Particularly, in Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and recognized that current regulation of the market system “has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies.”¹⁵ The Service provides subscribing Members with a tool to assist them in recalibrating their own models and trading strategies to improve their overall

¹¹ 15 U.S.C. 78f(b).

¹² 15 U.S.C. 78f(b)(5).

¹³ 15 U.S.C. 78f(b)(4).

¹⁴ See “The Market at a Glance,” (last visited April 26, 2022), available at <https://www.miaxoptions.com/>.

¹⁵ See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) (“Regulation NMS Adopting Release”).

experience on the Exchange, thereby potentially improving execution and order fill rates. This may improve the Exchange's overall market quality through increased liquidity and improved execution opportunities for resting orders, enhancing the Exchange's overall competitive position. The proposed fees are a result of the competitive environment of the U.S. options industry as the Exchange seeks to adopt fees to attract purchasers of the recently introduced Service.

If the Exchange proposed fees that market participants viewed as excessively high, then the proposed fees would simply serve to reduce demand for the Exchange's Service, which as noted, is entirely optional. Other options exchanges are also free to introduce their own comparable products with lower prices to better compete with the Exchange's offering. The Service may not provide utility to all Members based on their business models, and such Members may choose to use existing time synchronization methods, or rely on other methods, including similar products potentially offered by other exchanges, to measure latency between the Member's system and an exchange's system or to test their systems' performance to ensure it is operating as intended. As such, the Exchange believes that the proposed fees are reasonable and set at a level to compete with other options exchanges that may choose to offer similar services. Moreover, if a market participant views another exchange's potential service as more attractive, then such market participant can merely choose not to subscribe to the Exchange's Service and instead subscribe to another exchange's similar product, which may offer similar data points, albeit based on that other market's trading systems.

The Exchange also believes the proposed fees are reasonable as they would support the introduction of a new product to subscribers. As discussed above, the Service is an optional product available to any Member that chooses to subscribe. To date, no Member has elected to

subscribe to the Service and the Exchange anticipates that five to six latency sensitive Members may find the Service useful and ultimately choose to subscribe. If the Exchange prices the fees for the Service too high, these Members may choose not to subscribe and potentially utilize other methods to measure latency or monitor the health of their systems. Members that employ business models that are not latency sensitive, such as those that only enter resting liquidity and order routing firms that connect to the Exchange solely as part of their best execution obligations or to comply with the trade-through requirements, may not find the Service useful for their business models and elect not to subscribe to it regardless of the level of the fee. The Exchange anticipates a small subset of its overall membership would find utility in the Service and must consider this fact when pricing the Service to encourage those Members to subscribe.

The Exchange believes the proposed fees are reasonable in order to support the introduction of the new Service, which may be used for numerous optional purposes. For example, the Service would allow subscribers to more precisely measure latency between their network and that of the Exchange at a sub-nanosecond level, allowing subscribers to better understand the times at which their order or message reached certain points when traveling from their network to the Exchange. The Service would also allow subscribers to analyze the efficiency of their network and connections when not only routing orders to the Exchange, but also when receiving messages back from the Exchange (including communications regarding whether their order was accepted, rejected, or executed). Subscribers utilizing the Service may measure message traversal times by comparing their messages' (e.g. order, quote, cancellation) timestamps to the Exchange's matching engine timestamps from the Exchange-generated acknowledgement messages (e.g. order acknowledgment, quote acknowledgment, cancellation

acknowledgment).¹⁶ Subscribers would then be able to enhance their own systems to ensure that they are receiving such communications in a timelier manner and to verify that their systems are working as intended.

In addition, subscribers may utilize these enhanced latency measurements to better analyze latencies within their own systems and use this analysis to optimize their network, models and trading patterns to potentially improve their interactions with the Exchange.¹⁷ In particular, subscribers may use these metrics to better assess the health of their network and that their systems are working as intended. For example, a subscriber may use this information when analyzing the efficacy of their various connections and whether a connection is performing as expected or experiencing a delay. A subscriber may then decide to rebalance the amount of orders and/or messages over its various connections to ensure each connection is operating with maximum efficiency. Subscribers may also use the Service for other purposes, such as enhancing their ability to determine compliance with certain regulatory requirements¹⁸ and trade surveillance. Subscribers may also utilize time synchronization to assist them in better evaluating compliance with certain clock synchronization requirements. The Exchange therefore believes the proposed fees are reasonable because of the numerous benefits provided to

¹⁶ The Exchange sends subscribers an acknowledgement message that their order or message was received by the Exchange. This acknowledgement includes the time of receipt at a nanosecond level.

¹⁷ Based on their business models and needs, Members may elect to purchase an enhanced PTP device from a third party and use that device to measure latency at a sub-nanosecond level within their own systems. In such case, the Member would be limited to time measurements within its own system and would not be privy to the Exchange's own sub-nanosecond timestamp.

¹⁸ See, e.g., Chapter III of the Exchange's Rules, which incorporates by reference Rule 301, Interpretation and Policy .02 (Just and Equitable Principles of Trade), of the Exchange's affiliate, MIAx; and Financial Industry Regulatory Authority, Inc. ("FINRA") Rule 5320.

subscribers that subscribe to the Service. Selling different products and services, such as HPNTSS, is also a means by which exchanges compete to attract business. To the extent that the Exchange is successful in attracting subscribers for the Service, it may earn trading revenues and further enhance market participants' interactions on the Exchange, which would increase value of its products and services. If the market deems the proposed fees to be unfair or inequitable, firms can choose not to use or discontinue their use of the Service. The Exchange therefore believes that the proposed fees for the Service reflect the competitive environment of U.S. exchanges and would be properly assessed to market participants that subscribe to the Service. The Exchange also believes the proposed fees are equitable and not unfairly discriminatory as the fees would apply equally to all users who choose to subscribe to the Service. It is a business decision of each market participant that chooses to subscribe to the Service. The Exchange's proposed fees would not differentiate between subscribers that purchase the Service and are set at a modest level that would allow any interested market participant to purchase the Service based on their business needs.

The Exchange reiterates that the decision as to whether or not to purchase the Service is entirely optional for all potential subscribers. Indeed, no market participant is required to purchase the Service and the Exchange is not required to make the Service available to all investors. It is entirely a business decision of each market participant to subscribe to the Service. The Exchange offers the Service as a convenience to market participants to provide them with the ability to synchronize their own primary clock devices to the Exchange's primary clock device at a sub-nanosecond level. A market participant that chooses to subscribe to the Service may discontinue the use of the Service at any time if that market participant determines that the

synchronization of its primary clock devices to the Exchange’s primary clock device is no longer useful.

The Exchange believes it is reasonable to not pro-rate mid-month subscriptions and to charge mid-month subscribers for the full month in which they initially subscribe to the Service. The Exchange seeks to encourage Members to subscribe to the Service at the beginning of each month to ease the strain on administrative resources and synchronize potential new subscriptions to the Service. The Exchange believes not pro-rating mid-month subscriptions is a reasonable means to achieve this goal. Members that elect to subscribe mid-month would be aware that they would be liable for the full monthly fee and may elect to wait until the first of the next month to subscribe if they wish to receive the Service for the first full month they subscribe. Lastly, not pro-rating mid-month subscriptions is not novel and is currently done by the Exchange for other products and other exchanges.¹⁹

B. Self-Regulatory Organization’s Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange made the Service available in order to keep pace with changes in the industry and evolving customer needs and demands, and believes the product will contribute to robust

¹⁹ For example, the Exchange does not currently pro-rate mid-month subscriptions to its Open-Close Report or its Liquidity Taker Event Report. See Sections 6) and 7) of the Exchange’s Fee Schedule, available at https://www.miaxoptions.com/sites/default/files/fee_schedule-files/MIAX_Emerald_Fee_Schedule_04182022.pdf. Cboe BZX Exchange, Inc. (“BZX”) and Cboe EDGX Exchange, Inc. (“EDGX”) also do not pro-rate mid-month subscriptions for certain products. See, e.g., the Market Data and Cboe LiveVol, LLC Market Data Fees sections of BZX’s options fee schedule and EDGX’s options fee schedule, available at https://www.cboe.com/us/options/membership/fee_schedule/bzx/ (last visited April 26, 2022) and https://www.cboe.com/us/options/membership/fee_schedule/edgx/ (last visited April 26, 2022).

competition among national securities exchanges. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges.

The Exchange believes the proposed fees would not cause any unnecessary or inappropriate burden on intermarket competition as other exchanges are free to introduce their own comparable product with lower prices to better compete with the Exchange's offering. The Exchange operates in a highly competitive environment, and its ability to price the Service is constrained by the optional nature of the Service and competition among exchanges who choose to adopt a similar product. The Exchange must consider this in its pricing discipline in order to compete for market share. The Exchange anticipates that most, if not all, subscribers to the Service would be those Members whose trading models are latency sensitive and primarily seek to remove liquidity. These Members may increase their volume of liquidity removing orders as a result of re-calibrating their trading models based on their use of the Service. The increase in incoming liquidity removing orders may result in higher execution rates for Members who are less latency sensitive and primarily place resting orders on the Exchange's Simple Order Book²⁰ and/or Strategy Book.²¹ The proposed Service may benefit those market participants who would receive greater fill rates, thereby improving the Exchange's competitive standing through increased order flow, execution rates, and enhancing the quality of the Exchange's market.

The Exchange believes that if it were to propose fees that are excessively higher than fees for potentially similar products, it would simply serve to reduce demand for the Exchange's product, which as discussed, market participants are under no obligation to utilize. In this

²⁰ The "Simple Order Book" is the Exchange's regular electronic book of orders and quotes. See Exchange Rule 518(a)(15).

²¹ The "Strategy Book" is the Exchange's electronic book of complex orders and complex quotes. See Exchange Rule 518(a)(17).

competitive environment, potential purchasers are free to choose which, if any, similar product to purchase to satisfy their need for time synchronization. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges.

The Exchange does not believe the proposed rule change would cause any unnecessary or inappropriate burden on intramarket competition. Particularly, the proposed product and fees apply uniformly to any purchaser in that the Exchange does not differentiate between subscribers that purchase the Service. The proposed fees are set at a modest level that would allow any interested market participant to purchase the Service based on their business needs.

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

Written comments were neither solicited nor received.

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

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act,²² and Rule 19b-4(f)(2)²³ thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

²² 15 U.S.C. 78s(b)(3)(A)(ii).

²³ 17 CFR 240.19b-4(f)(2).

IV. Solicitation of Comments

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

Electronic comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-EMERALD-2022-16 on the subject line.

Paper comments:

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

All submissions should refer to File Number SR-EMERALD-2022-16. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying

information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-EMERALD-2022-16 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.²⁴

J. Matthew DeLesDernier
Assistant Secretary

²⁴ 17 CFR 200.30-3(a)(12).