

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-92645; File No. SR-EMERALD-2021-23)

August 11, 2021

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 a Tiered-Pricing Structure for Certain Connectivity Fees

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 July 30, 2021, 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 amend certain connectivity fees.

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.

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

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

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 proposes to amend the Fee Schedule to adopt a tiered-pricing structure for the 10 gigabit (“Gb”) ultra-low latency (“ULL”) fiber connection available to Members³ and non-Members. The Exchange believes a tiered-pricing structure will encourage Members and non-Members to be more efficient and economical when determining how to connect to the Exchange. This should also enable the Exchange to better monitor and provide access to the Exchange’s network to ensure sufficient capacity and headroom in the System.⁴

10Gb ULL Tiered-Pricing Structure

The Exchange proposes to amend Sections 5(a)-b) of the Fee Schedule to provide for a tiered-pricing structure for 10Gb ULL connections for Members and non-Members. Currently, the Exchange assesses Members and non-Members a flat monthly fee of \$10,000 per 10Gb ULL connection for access to the Exchange’s primary and secondary facilities.

The Exchange now proposes to move from a flat monthly fee per connection to a tiered-pricing structure per connection under which the monthly fee would vary depending on the number of 10Gb ULL connections each Member or non-Member elects to purchase per exchange. Specifically, the Exchange proposes to decrease the fee for the first and second 10Gb

³ The term “Member” means an individual or organization approved to exercise the trading rights associated with a Trading Permit. Members are deemed “members” under the Exchange Act. See Exchange Rule 100.

⁴ The term “System” means the automated trading system used by the Exchange for the trading of securities. See Exchange Rule 100.

ULL connections for each Member and non-Member from the current flat monthly fee of \$10,000 to \$9,000 per connection. To encourage more efficient connectivity usage, the Exchange proposes to increase the per connection fee for Members and non-Members that purchase more than two 10Gb ULL connections. Specifically, (i) the third and fourth 10Gb ULL connections for each Member or non-Member will increase from the current flat monthly fee of \$10,000 to \$11,000 per connection; and (ii) for the fifth 10Gb ULL connection, and for each 10Gb ULL connection for each Member and non-Member purchased thereafter, the fee will increase from the flat monthly fee of \$10,000 to \$13,000 per connection. The proposed 10Gb ULL tiered-pricing structure and fees are collectively referred to herein as the “Proposed Access Fees.”

The Exchange will continue to assess monthly Member and non-Member network connectivity fees for connectivity to the primary and secondary facilities in any month the Member or non-Member is credentialed to use any of the MIAX Emerald APIs or market data feeds in the production environment. The Exchange proposes to pro-rate the fees when a Member or non-Member makes a change to the connectivity (by adding or deleting connections) with such pro-rated fees based on the number of trading days that the Member or non-Member has been credentialed to utilize any of the MIAX Emerald APIs or market data feeds in the production environment through such connection, divided by the total number of trading days in such month multiplied by the applicable monthly rate. The Exchange will continue to assess monthly Member and non-Member network connectivity fees for connectivity to the disaster recovery facility in each month during which the Member or non-Member has established connectivity with the disaster recovery facility.

Implementation Date

The proposed fee changes will become effective on August 1, 2021.

2. Statutory Basis

The Exchange believes that its proposal to amend its Fee Schedule is consistent with Section 6(b) of the Act⁵ in general, and furthers the objectives of Section 6(b)(4) of the Act⁶ in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among Exchange Members and issuers and other persons using any facility or system which the Exchange operates or controls. The Exchange also believes the proposal furthers the objectives of Section 6(b)(5) of the Act⁷ in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest and is not designed to permit unfair discrimination between customers, issuers, brokers and dealers.

The Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues if they deem fee levels at a particular venue to be excessive. In such an environment, the Exchange must continually adjust its fees for services and products, in addition to order flow, to remain competitive with other exchanges. The Exchange believes that the proposed changes reflect this competitive environment.

The Exchange believes the proposal to move from a flat fee per month for the 10Gb ULL connection to a tiered-pricing structure is reasonable, equitably allocated and not unfairly

⁵ 15 U.S.C. 78f(b).

⁶ 15 U.S.C. 78f(b)(4).

⁷ 15 U.S.C. 78f(b)(5).

discriminatory because the Exchange believes the proposed structure would encourage firms to be more economical and efficient in the number of connections they purchase. The Exchange believes this will enable the Exchange to better monitor and provide access to the Exchange's network to ensure sufficient capacity and headroom in the System.

The Exchange believes that the proposal to move to a tiered-pricing structure for its 10Gb ULL connections is reasonable, equitably allocated and not unfairly discriminatory because the majority of Members and non-Members that purchase 10Gb ULL connections will either save money or pay the same amount after the tiered-pricing structure is implemented. Based on a recently completed billing cycle, of the firms that purchased at least one 10Gb ULL connection, approximately 60% will see a proposed decrease in their monthly fees and approximately 40% will see a proposed increase in their monthly fees as a result of the proposed tiered-pricing structure versus the current flat monthly fee structure. To illustrate, firms that purchase only one 10Gb ULL connection per month currently pay the flat rate of \$10,000 per month for that one 10Gb ULL connection. Pursuant to the proposed tiered-pricing structure, these firms will now pay \$9,000 per month for that one 10Gb ULL connection, saving \$1,000 per month or \$12,000 annually. Further, firms that purchase two 10Gb ULL connections per month currently pay the flat rate of \$20,000 per month ($\$10,000 \times 2$) for those two 10Gb ULL connections. Pursuant to the proposed tiered-pricing structure, these firms will now pay \$18,000 per month ($\$9,000 \times 2$) for those two 10Gb ULL connections, saving \$2,000 per month or \$24,000 annually.

The Exchange also notes that, for firms that primarily route orders seeking best-execution, a limited number of connections are needed. Therefore, the connectivity costs will likely be lower for these firms based on the proposed tiered-pricing structure. The firms that engage in advanced trading strategies typically require multiple connections and, therefore,

generate higher costs by utilizing more of the Exchange's resources. These firms will absorb the increased connectivity cost based on the proposed tiered-pricing structure, as shown by the 40% of firms that will likely see an increase in their monthly fees. Additionally, the firms that purchase a higher amount of 10Gb ULL connections tend to have specific business oriented market making and taking strategies, as opposed to firms simply engaging in best-execution order routing business.

The Exchange believes that exchanges, in setting fees of all types, should meet very high standards of transparency to demonstrate why each new fee or fee increase meets the requirements of the Act that fees be reasonable, equitably allocated, not unfairly discriminatory, and not create an undue burden on competition among market participants. The Exchange believes this high standard is especially important when an exchange imposes various access fees for market participants to access an exchange's marketplace. The Exchange deems connectivity to be access fees. It records these fees as part of its "Access Fees" revenue in its financial statements. The Exchange believes that it is important to demonstrate that these fees are based on its costs and reasonable business needs. The Exchange believes the Proposed Access Fees will allow the Exchange to offset expense the Exchange has and will incur, and that the Exchange is providing sufficient transparency (as described below) into how the Exchange determined to charge such fees. Accordingly, the Exchange is providing an analysis of its revenues, costs, and profitability associated with the Proposed Access Fees. This analysis includes information regarding its methodology for determining the costs and revenues associated with the Proposed Access Fees.

In order to determine the Exchange's costs to provide the access services associated with the Proposed Access Fees, the Exchange conducted an extensive cost review in which the

Exchange analyzed every expense item in the Exchange's general expense ledger to determine whether each such expense relates to the Proposed Access Fees, and, if such expense did so relate, what portion (or percentage) of such expense actually supports the access services. The sum of all such portions of expenses represents the total cost of the Exchange to provide the access services associated with the Proposed Access Fees. For the avoidance of doubt, no expense amount was allocated twice. The Exchange is also providing detailed information regarding the Exchange's cost allocation methodology – namely, information that explains the Exchange's rationale for determining that it was reasonable to allocate certain expenses described in this filing towards the cost to the Exchange to provide the access services associated with the Proposed Access Fees.

In order to determine the Exchange's projected revenue associated with the Proposed Access Fees, the Exchange analyzed the number of Members and non-Members currently utilizing the 10Gb ULL fiber connection, and, utilizing a recent monthly billing cycle representative of 2021 monthly revenue, extrapolated annualized revenue on a going-forward basis. The Exchange does not believe it is appropriate to factor into its analysis future revenue growth or decline into its projections for purposes of these calculations, given the uncertainty of such projections due to the continually changing access needs of market participants, discounts that can be achieved due to lower trading volume and vice versa, market participant consolidation, etc. Additionally, the Exchange similarly does not factor into its analysis future cost growth or decline. The Exchange is presenting its revenue and expense associated with the Proposed Access Fees in this filing in a manner that is consistent with how the Exchange presents its revenue and expense in its Audited Unconsolidated Financial Statements. The Exchange's most recent Audited Unconsolidated Financial Statement is for 2020. However,

since the revenue and expense associated with the Proposed Access Fees were not in place in 2020 or for the first seven months of 2021, the Exchange believes its 2020 Audited Unconsolidated Financial Statement is not useful for analyzing the reasonableness of the total annual revenue and costs associated with the Proposed Access Fees. Accordingly, the Exchange believes it is more appropriate to analyze the Proposed Access Fees utilizing its 2021 revenue and costs, as described herein, which utilize the same presentation methodology as set forth in the Exchange's previously-issued Audited Unconsolidated Financial Statements. Based on this analysis, the Exchange believes that the Proposed Access Fees are fair and reasonable because they will not result in excessive pricing or supra-competitive profit when comparing the Exchange's total annual expense associated with providing the services associated with the Proposed Access Fees versus the total projected annual revenue the Exchange will collect for providing those services.

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On March 29, 2019, the Commission issued its Order Disapproving Proposed Rule Changes to Amend the Fee Schedule on the BOX Market LLC Options Facility to Establish BOX Connectivity Fees for Participants and Non-Participants Who Connect to the BOX Network (the "BOX Order").⁸ On May 21, 2019, the Commission issued the Staff Guidance on SRO Rule Filings Relating to Fees.⁹ Accordingly, the Exchange believes that the Proposed Access Fees are consistent with the Act because they (i) are reasonable, equitably allocated, not unfairly discriminatory, and not an undue burden on competition; (ii) comply with the BOX

⁸ See Securities Exchange Act Release No. 85459 (March 29, 2019), 84 FR 13363 (April 4, 2019) (SR-BOX-2018-24, SR-BOX-2018-37, and SR-BOX-2019-04).

⁹ See Staff Guidance on SRO Rule Filings Relating to Fees (May 21, 2019), at <https://www.sec.gov/tm/staff-guidance-sro-rule-filings-fees> (the "Guidance").

Order and the Guidance; (iii) are supported by evidence (including comprehensive revenue and cost data and analysis) that they are fair and reasonable because they will not result in excessive pricing or supra-competitive profit; and (iv) utilize a cost-based justification framework that is substantially similar to a framework previously used by the Exchange, and its affiliates Miami International Securities Exchange, LLC (“MIAX”) and MIAX PEARL, LLC (“MIAX Pearl”), to establish or increase other non-transaction fees.¹⁰ Accordingly, the Exchange believes that the Proposed Access Fees are consistent with the Act.

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As of July 29, 2021, the Exchange had a market share of only 3.90% of the U.S. equity options industry for the month of July 2021.¹¹ The Exchange is not aware of any evidence that a market share of approximately 3-4% provides the Exchange with anti-competitive pricing power. If the Exchange were to attempt to establish unreasonable pricing, then no market participant would join or connect, and existing market participants would disconnect.

Separately, the Exchange is not aware of any reason why market participants could not simply drop their access (or not initially access an exchange) if an exchange were to establish prices for its non-transaction fees that, in the determination of such market participant, did not make business or economic sense for such market participant to access such exchange. No options market participant is required by rule, regulation, or competitive forces to be a Member of the Exchange. As evidence of the fact that market participants can and do drop their access

¹⁰ See Securities Exchange Act Release Nos. 90981 (January 25, 2021), 86 FR 7582 (January 29, 2021) (SR-PEARL-2021-01) (proposal to increase connectivity fees); 90980 (January 25, 2021), 86 FR 7602 (January 29, 2021) (SR-MIAX-2021-02) (proposal to increase connectivity fees).

¹¹ See “The market at a glance,” available at <https://www.miaxoptions.com/> (last visited July 27, 2021).

to exchanges based on non-transaction fee pricing, R2G Services LLC (“R2G”) filed a comment letter after BOX’s proposed rule changes to increase its connectivity fees (SR-BOX-2018-24, SR-BOX-2018-37, and SR-BOX-2019-04). The R2G Letter stated, “[w]hen BOX instituted a \$10,000/month price increase for connectivity; we had no choice but to terminate connectivity into them as well as terminate our market data relationship. The cost benefit analysis just didn’t make any sense for us at those new levels.” Similarly, the Exchange noted in a recent filing that once MIAX Emerald issued a notice that it was instituting MEI Port fees, among other non-transaction fees, one MIAX Emerald Member dropped its access to MIAX Emerald as a result of those fees.¹² Accordingly, these examples show that if an exchange sets too high of a fee for connectivity and/or other non-transaction fees for its relevant marketplace, market participants can choose to drop their access to such exchange.

In order to provide more detail and to quantify the Exchange’s costs associated with providing access to the Exchange in general, the Exchange notes that there are material costs associated with providing the infrastructure and headcount to fully-support access to the Exchange. The Exchange incurs technology expense related to establishing and maintaining Information Security services, enhanced network monitoring and customer reporting, as well as Regulation SCI mandated processes, associated with its network technology. While some of the expense is fixed, much of the expense is not fixed, and thus increases as the services associated with the Proposed Access Fees increase. For example, new Members to the

¹² See Securities Exchange Act Release No. 91460 (April 2, 2021), 86 FR 18349 (April 8, 2021) (SR-EMERALD-2021-11) (Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fee Schedule To Adopt Port Fees, Increase Certain Network Connectivity Fees, and Increase the Number of Additional Limited Service MIAX Emerald Express Interface Ports Available to Market Makers) (adopting tiered MEI Port fee structure ranging from \$5,000 to \$20,500 per month).

Exchange may require the purchase of additional hardware to support those Members as well as enhanced monitoring and reporting of customer performance that the Exchange and its affiliates provide. Further, as the total number Members increases, the Exchange and its affiliates may need to increase their data center footprint and consume more power, resulting in increased costs charged by their third-party data center provider. Accordingly, the cost to the Exchange and its affiliates to provide access to its Members is not fixed. The Exchange believes the Proposed Access Fees are reasonable in order to offset a portion of the costs to the Exchange associated with providing access to its network infrastructure.

The Exchange only has four primary sources of revenue: transaction fees, access fees (which includes the Proposed Access Fees), regulatory fees, and market data fees. Accordingly, the Exchange must cover all of its expenses from these four primary sources of revenue.

The Exchange believes that the Proposed Access Fees are fair and reasonable because they will not result in excessive pricing or supra-competitive profit, when comparing the total annual expense that the Exchange projects to incur in connection with providing these access services versus the total annual revenue that the Exchange projects to collect in connection with services associated with the Proposed Access Fees. For 2021¹³, the total annual expense for providing the access services associated with the Proposed Access Fees is projected to be approximately \$7.2 million. The approximately \$7.2 million in projected total annual expense is comprised of the following, all of which are directly related to the access services associated with the Proposed Access Fees: (1) third-party expense, relating to fees paid by the Exchange to third-parties for certain products and services; and (2) internal expense, relating to the

¹³ The Exchange has not yet finalized its 2021 year end results.

internal costs of the Exchange to provide the services associated with the Proposed Access Fees.¹⁴ As noted above, the Exchange believes it is more appropriate to analyze the Proposed Access Fees utilizing its 2021 revenue and costs, which utilize the same presentation methodology as set forth in the Exchange’s previously-issued Audited Unconsolidated Financial Statements.¹⁵ The \$7.2 million in projected total annual expense is directly related to the access services associated with the Proposed Access Fees, and not any other product or service offered by the Exchange. It does not include general costs of operating matching systems and other trading technology, and no expense amount was allocated twice.

As discussed, the Exchange conducted an extensive cost review in which the Exchange analyzed every expense item in the Exchange’s general expense ledger (this includes over 150 separate and distinct expense items) to determine whether each such expense relates to the access services associated with the Proposed Access Fees, and, if such expense did so relate, what portion (or percentage) of such expense actually supports those services, and thus bears a relationship that is, “in nature and closeness,” directly related to those services. The sum of all such portions of expenses represents the total cost of the Exchange to provide access services associated with the Proposed Access Fees.

¹⁴ The percentage allocations used in this proposed rule change may differ from past filings from the Exchange or its affiliates due to, among other things, changes in expenses charged by third-parties, adjustments to internal resource allocations, and different system architecture of the Exchange as compared to its affiliates.

¹⁵ For example, the Exchange previously noted that all third-party expense described in its prior fee filing was contained in the information technology and communication costs line item under the section titled “Operating Expenses Incurred Directly or Allocated From Parent,” in the Exchange’s 2019 Form 1 Amendment containing its financial statements for 2018. See Securities Exchange Act Release No. 87877 (December 31, 2019), 85 FR 738 (January 7, 2020) (SR-EMERALD-2019-39). Accordingly, the third-party expense described in this filing is attributed to the same line item for the Exchange’s 2021 Form 1 Amendment, which will be filed in 2022.

For 2021, total third-party expense, relating to fees paid by the Exchange to third-parties for certain products and services for the Exchange to be able to provide the access services associated with the Proposed Access Fees, is projected to be \$1.7 million. This includes, but is not limited to, a portion of the fees paid to: (1) Equinix, for data center services, for the primary, secondary, and disaster recovery locations of the Exchange’s trading system infrastructure; (2) Zayo Group Holdings, Inc. (“Zayo”) for network services (fiber and bandwidth products and services) linking the Exchange’s and its affiliates’ office locations in Princeton, New Jersey and Miami, Florida, to all data center locations; (3) Secure Financial Transaction Infrastructure (“SFTI”)¹⁶, which supports connectivity and feeds for the entire U.S. options industry; (4) various other services providers (including Thompson Reuters, NYSE, Nasdaq, and Internap), which provide content, connectivity services, and infrastructure services for critical components of options connectivity and network services; and (5) various other hardware and software providers (including Dell and Cisco, which support the production environment in which Members connect to the network to trade, receive market data, etc.).

For clarity, only a portion of all fees paid to such third-parties is included in the third-party expense herein, and no expense amount is allocated twice. Accordingly, the Exchange does not allocate its entire information technology and communication costs to the access services associated with the Proposed Access Fees. Further, the Exchange notes that expenses

¹⁶ In fact, on October 22, 2019, the Exchange was notified by SFTI that it is again raising its fees charged to the Exchange by approximately 11%, without having to show that such fee change complies with the Act by being reasonable, equitably allocated, and not unfairly discriminatory. It is unfathomable to the Exchange that, given the critical nature of the infrastructure services provided by SFTI, that its fees are not required to be rule-filed with the Commission pursuant to Section 19(b)(1) of the Act and Rule 19b-4 thereunder. See 15 U.S.C. 78s(b)(1) and 17 CFR 240.19b-4, respectively.

associated with its affiliates, MIAX and MIAX Pearl, are accounted for separately and are not included within the scope of this filing.

The Exchange believes it is reasonable to allocate such third-party expense described above towards the total cost to the Exchange to provide the access services associated with the Proposed Access Fees. In particular, the Exchange believes it is reasonable to allocate the identified portion of the Equinix expense because Equinix operates the data centers (primary, secondary, and disaster recovery) that host the Exchange's network infrastructure. This includes, among other things, the necessary storage space, which continues to expand and increase in cost, power to operate the network infrastructure, and cooling apparatuses to ensure the Exchange's network infrastructure maintains stability. Without these services from Equinix, the Exchange would not be able to operate and support the network and provide the access services associated with the Proposed Access Fees to its Members and their customers. The Exchange did not allocate all of the Equinix expense toward the cost of providing the access services associated with the Proposed Access Fees, only that portion which the Exchange identified as being specifically mapped to providing the access services associated with the Proposed Access Fees, approximately 62% of the total applicable Equinix expense. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to provide the access services associated with the Proposed Access Fees, and not any other service, as supported by its cost review.

The Exchange believes it is reasonable to allocate the identified portion of the Zayo expense because Zayo provides the internet, fiber and bandwidth connections with respect to the network, linking the Exchange with its affiliates, MIAX Pearl and MIAX, as well as the data center and disaster recovery locations. As such, all of the trade data, including the billions

of messages each day per exchange, flow through Zayo's infrastructure over the Exchange's network. Without these services from Zayo, the Exchange would not be able to operate and support the network and provide the access services associated with the Proposed Access Fees. The Exchange did not allocate all of the Zayo expense toward the cost of providing the access services associated with the Proposed Access Fees, only the portion which the Exchange identified as being specifically mapped to providing the Proposed Access Fees, approximately 62% of the total applicable Zayo expense. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to provide the access services associated with the Proposed Access Fees, and not any other service, as supported by its cost review.

The Exchange believes it is reasonable to allocate the identified portions of the SFTI expense and various other service providers' (including Thompson Reuters, NYSE, Nasdaq, and Internap) expense because those entities provide connectivity and feeds for the entire U.S. options industry, as well as the content, connectivity services, and infrastructure services for critical components of the network. Without these services from SFTI and various other service providers, the Exchange would not be able to operate and support the network and provide access to its Members and their customers. The Exchange did not allocate all of the SFTI and other service providers' expense toward the cost of providing the access services associated with the Proposed Access Fees, only the portions which the Exchange identified as being specifically mapped to providing the access services associated with the Proposed Access Fees, approximately 89% of the total applicable SFTI and other service providers' expense. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to provide the access services associated with the Proposed Access Fees.

The Exchange believes it is reasonable to allocate the identified portion of the other hardware and software provider expense because this includes costs for dedicated hardware licenses for switches and servers, as well as dedicated software licenses for security monitoring and reporting across the network. Without this hardware and software, the Exchange would not be able to operate and support the network and provide access to its Members and their customers. The Exchange did not allocate all of the hardware and software provider expense toward the cost of providing the access services associated with the Proposed Access Fees, only the portions which the Exchange identified as being specifically mapped to providing the access services associated with the Proposed Access Fees, approximately 51% of the total applicable hardware and software provider expense. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to provide the access services associated with the Proposed Access Fees.

For 2021, total projected internal expense, relating to the internal costs of the Exchange to provide the access services associated with the Proposed Access Fees, is projected to be approximately \$5.5 million. This includes, but is not limited to, costs associated with: (1) employee compensation and benefits for full-time employees that support the access services associated with the Proposed Access Fees, including staff in network operations, trading operations, development, system operations, business, as well as staff in general corporate departments (such as legal, regulatory, and finance) that support those employees and functions (including an increase as a result of the higher determinism project); (2) depreciation and amortization of hardware and software used to provide the access services associated with the Proposed Access Fees, including equipment, servers, cabling, purchased software and internally developed software used in the production environment to support the network for

trading; and (3) occupancy costs for leased office space for staff that provide the access services associated with the Proposed Access Fees. The breakdown of these costs is more fully-described below. For clarity, only a portion of all such internal expenses are included in the internal expense herein, and no expense amount is allocated twice. Accordingly, the Exchange does not allocate its entire costs contained in those items to the access services associated with the Proposed Access Fees.

The Exchange believes it is reasonable to allocate such internal expense described above towards the total cost to the Exchange to provide the access services associated with the Proposed Access Fees. In particular, the Exchange's employee compensation and benefits expense relating to providing the access services associated with the Proposed Access Fees is projected to be approximately \$3.2 million, which is only a portion of the approximately \$9.7 million total projected expense for employee compensation and benefits. The Exchange believes it is reasonable to allocate the identified portion of such expense because this includes the time spent by employees of several departments, including Technology, Back Office, Systems Operations, Networking, Business Strategy Development (who create the business requirement documents that the Technology staff use to develop network features and enhancements), Trade Operations, Finance (who provide billing and accounting services relating to the network), and Legal (who provide legal services relating to the network, such as rule filings and various license agreements and other contracts). As part of the extensive cost review conducted by the Exchange, the Exchange reviewed the amount of time spent by each employee on matters relating to the provision of access services associated with the Proposed Access Fees. Without these employees, the Exchange would not be able to provide the access services associated with the Proposed Access Fees to its Members and their customers. The

Exchange did not allocate all of the employee compensation and benefits expense toward the cost of the access services associated with the Proposed Access Fees, only the portions which the Exchange identified as being specifically mapped to providing the access services associated with the Proposed Access Fees, approximately 33% of the total applicable employee compensation and benefits expense. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to provide the access services associated with the Proposed Access Fees, and not any other service, as supported by its cost review.

The Exchange's depreciation and amortization expense relating to providing the services associated with the Proposed Access Fees is projected to be \$2 million, which is only a portion of the \$3.1 million total projected expense for depreciation and amortization. The Exchange believes it is reasonable to allocate the identified portion of such expense because such expense includes the actual cost of the computer equipment, such as dedicated servers, computers, laptops, monitors, information security appliances and storage, and network switching infrastructure equipment, including switches and taps that were purchased to operate and support the network and provide the access services associated with the Proposed Access Fees. Without this equipment, the Exchange would not be able to operate the network and provide the access services associated with the Proposed Access Fees to its Members and their customers. The Exchange did not allocate all of the depreciation and amortization expense toward the cost of providing the access services associated with the Proposed Access Fees, only the portion which the Exchange identified as being specifically mapped to providing the access services associated with the Proposed Access Fees, approximately 63% of the total applicable depreciation and amortization expense, as these access services would not be possible without relying on such. The Exchange believes this allocation is reasonable because it represents the

Exchange's actual cost to provide the access services associated with the Proposed Access Fees, and not any other service, as supported by its cost review.

The Exchange's occupancy expense relating to providing the services associated with the Proposed Access Fees is projected to be approximately \$0.3 million, which is only a portion of the \$0.5 million total projected expense for occupancy. The Exchange believes it is reasonable to allocate the identified portion of such expense because such expense represents the portion of the Exchange's cost to rent and maintain a physical location for the Exchange's staff who operate and support the network, including providing the access services associated with the Proposed Access Fees. This amount consists primarily of rent for the Exchange's Princeton, NJ office, as well as various related costs, such as physical security, property management fees, property taxes, and utilities. The Exchange operates its Network Operations Center ("NOC") and Security Operations Center ("SOC") from its Princeton, New Jersey office location. A centralized office space is required to house the staff that operates and supports the network. The Exchange currently has approximately 150 employees. Approximately two-thirds of the Exchange's staff are in the Technology department, and the majority of those staff have some role in the operation and performance of the access services associated with the Proposed Access Fees. Without this office space, the Exchange would not be able to operate and support the network and provide the access services associated with the Proposed Access Fees to its Members and their customers. Accordingly, the Exchange believes it is reasonable to allocate the identified portion of its occupancy expense because such amount represents the Exchange's actual cost to house the equipment and personnel who operate and support the Exchange's network infrastructure and the access services associated with the Proposed Access Fees. The Exchange did not allocate all of the occupancy expense toward the cost of providing

the access services associated with the Proposed Access Fees, only the portion which the Exchange identified as being specifically mapped to operating and supporting the network, approximately 53% of the total applicable occupancy expense. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to provide the access services associated with the Proposed Access Fees, and not any other service, as supported by its cost review.

The Exchange notes that a material portion of its total overall expense is allocated to the provision of access services (including connectivity, ports, and trading permits). The Exchange believes this is reasonable and in line, as the Exchange operates a technology-based business that differentiates itself from its competitors based on its trading systems that rely on access to a high performance network, resulting in significant technology expense. Over two-thirds of Exchange staff are technology-related employees. The majority of the Exchange's expense is technology-based. As described above, the Exchange has only four primary sources of fees to recover their costs; thus, the Exchange believes it is reasonable to allocate a material portion of their total overall expense towards access fees.

Accordingly, based on the facts and circumstances presented, the Exchange believes that its provision of the access services associated with the Proposed Access Fees will not result in excessive pricing or supra-competitive profit. To illustrate, on a going-forward, fully-annualized basis, the Exchange projects that annualized revenue for providing the access services associated with the Proposed Access Fees would be approximately \$14.6 million per annum, based on a recent billing cycle.¹⁷ The Exchange projects that their annualized revenue

¹⁷ The Exchange also projects approximately \$2,800 in monthly revenue through 1Gb connections; however, the Exchange does not propose to adjust the fees for those connections at this time.

for providing network connectivity services (all connectivity alternatives) to be approximately \$14.63 million per annum. The Exchange projects that their annualized expense for providing network connectivity services (all connectivity alternatives) to be approximately \$7.2 million per annum. Accordingly, on a fully-annualized basis, the Exchange believes its total projected revenue for the providing the access services associated with the Proposed Access Fees will not result in excessive pricing or supra-competitive profit, as the Exchange will make a profit margin of only approximately 51% inclusive of the Proposed Access Fees and all other connectivity alternatives (\$14.63 million in total connectivity revenue minus \$7.2 million in expense = \$7.43 million in profit per annum). Additionally, this profit margin does not take into account the cost of capital expenditures (“CapEx”) the Exchange historically spent or is projected to spend each year on CapEx going forward.

For the avoidance of doubt, none of the expenses included herein relating to the access services associated with the Proposed Access Fees relate to the provision of any other services offered by the Exchange. Stated differently, no expense amount of the Exchange is allocated twice. The Exchange notes that expenses associated with the Exchange’s affiliates, MIAX and MIAX Pearl, are accounted for separately and are not included within the scope of this filing. Stated differently, no expense amount of the Exchange is also allocated to MIAX or MIAX Pearl.

The Exchange believes it is reasonable, equitable and not unfairly discriminatory to allocate the respective percentages of each expense category described above towards the total cost to the Exchange of operating and supporting the network, including providing the access services associated with the Proposed Access Fees because the Exchange performed a line-by-line item analysis of all the expenses of the Exchange, and has determined the expenses that

directly relate to providing access to the Exchange. Further, the Exchange notes that, without the specific third-party and internal items listed above, the Exchange would not be able to provide the access services associated with the Proposed Access Fees to its Members and their customers. Each of these expense items, including physical hardware, software, employee compensation and benefits, occupancy costs, and the depreciation and amortization of equipment, have been identified through a line-by-line item analysis to be integral to providing access services. The Proposed Access Fees are intended to recover the costs of providing access to its System. Accordingly, the Exchange believes that the Proposed Access Fees are fair and reasonable because they do not result in excessive pricing or supra-competitive profit, when comparing the actual costs to the Exchange versus the projected annual revenue from the Proposed Access Fees.

The Exchange believes the proposed changes are reasonable, equitably allocated and not unfairly discriminatory, and do not result in a “supra-competitive”¹⁸ profit. Of note, the Guidance defines “supra-competitive profit” as profits that exceed the profits that can be obtained in a competitive market.¹⁹ With the proposed changes, the Exchange anticipates it will have a profit margin of approximately 51%, inclusive of the Proposed Access Fees and all other connectivity alternatives. Based on the 2020 Audited Financial Statements of competing options exchanges (since the 2021 Audited Financial Statements will likely not become publicly available until early July 2022, after the Exchange has submitted this filing), the Exchange’s profit margin is similar to or below the operating profit margins of other competing exchanges. For example, Nasdaq ISE, LLC’s (“ISE”) operating profit margin for all of 2020 was

¹⁸ See supra note 9.

¹⁹ See id.

approximately 85%; Nasdaq PHLX LLC's ("PHLX") operating profit margin for all of 2020 was approximately 49%; the Nasdaq Stock Market LLC's ("Nasdaq") operating profit margin for all of 2020 was approximately 62%; NYSE Arca, Inc.'s ("Arca") operating profit margin for all of 2020 was approximately 55%; NYSE American LLC's ("Amex") operating profit margin for all of 2020 was approximately 59%; Cboe Exchange, Inc.'s ("Cboe") operating profit margin for all of 2020 was approximately 74%; and Cboe BZX Exchange, Inc.'s ("BZX") operating profit margin for all of 2020 was approximately 52%.

The Exchange believes that the Proposed Access Fees are reasonable, equitably allocated and not unfairly discriminatory because, for one 10Gb ULL connection, the Exchange provides each Member or non-Member access to all twelve matching engines on MIAX Emerald. Under the proposed pricing-structure, the Exchange will assess each Member or non-Member \$9,000 for the first 10Gb ULL connection. For that \$9,000 monthly fee, each Member or non-Member has access to all twelve matching engines each month. This results in a per matching engine connectivity cost of only \$750 (\$9,000 divided by 12). The Exchange believes its connectivity cost to be less than or similar to connectivity fees charged by competing options exchanges.²⁰

²⁰ See The Nasdaq Stock Market LLC ("NASDAQ") Rules, General 8: Connectivity, Section 1. Co-Location Services (charging a monthly fee of \$10,000 per 10Gb fiber connection, \$15,000 per 10Gb Ultra fiber connection, and \$20,000 per 40Gb fiber connection, plus installation fees ranging from \$1,000 to \$1,500). The Exchange notes that the same connectivity fees described above for NASDAQ also apply to its affiliates, Nasdaq ISE, LLC and NASDAQ PHLX LLC. See Nasdaq ISE Rules, General 8: Connectivity and NASDAQ PHLX Rules, General 8: Connectivity (both incorporating by reference the fees in NASDAQ Rules, General 8: Connectivity). See also NYSE American LLC Options Fee Schedule, Section IV (charging the following connectivity fees: \$6,000 per connection initial charge plus \$5,000 monthly per 1Gb circuit connection; \$15,000 per connection initial charge plus \$22,000 monthly per 10Gb LX LCN circuit connection; and \$15,000 per connection initial charge plus \$22,000 monthly charge per 40Gb LCN circuit connection).

The Exchange further believes its proposed fees are reasonable, equitably allocated and not unfairly discriminatory because the Exchange believes that it benefits overall competition in the marketplace to allow relatively new entrants like the Exchange and its affiliates, MIAX Pearl and MIAX, to propose fees that may help these new entrants recoup their substantial investment in building out costly infrastructure. The Exchange and its affiliates have historically set their fees purposefully low in order to attract business and market share, and the proposed tiered-pricing structure will help make the rates consistent with other exchanges while not raising costs for a majority of the Exchange's Members and non-Members.

The Guidance provides that in determining whether a proposed fee is constrained by significant competitive forces, the Commission will consider whether there are reasonable substitutes for the product or service that is the subject of a proposed fee. As described below, the Exchange believes substitute products and services are available to market participants, including, among other things, other options exchanges that market participants may connect to in lieu of the Exchange, indirect connectivity to the Exchange via a third-party reseller and/or trading of any options products, including proprietary products, in the Over-the-Counter ("OTC") markets.

There is also no regulatory requirement that any market participant connect to any one options exchange, that any market participant connect at a particular connection speed or act in a particular capacity on the Exchange, or trade any particular product offered on an exchange. Moreover, membership is not a requirement to participate on the Exchange. A market participant may submit orders to the Exchange via a Sponsored User.²¹ Indeed, the Exchange is

²¹ See Exchange Rule 210. The Sponsored User is subject to the fees, if any, of the Sponsoring Member. The Exchange notes that the Sponsoring Member is not required to publicize, let alone justify or file with the Commission its fees, and as such could charge

unaware of any one options exchange whose membership includes every registered broker-dealer. Based on a recent analysis conducted by the Cboe Exchange, Inc. (“Cboe”), as of October 21, 2020, only three (3) of the broker-dealers, out of approximately 250 broker-dealers, were members of at least one exchange that lists options for trading and were members of all 16 options exchanges.²² Additionally, the Cboe Fee Filing found that several broker-dealers were members of only a single exchange that lists options for trading and that the number of members at each exchange that trades options varies greatly.²³

The Exchange notes that non-Member third-parties, such as Service Bureaus and Extranets, resell the Exchange’s connectivity. This indirect connectivity is another viable alternative for market participants to trade on the Exchange without connecting directly to the Exchange (and thus not pay the Exchange’s connectivity fees), which alternative is already being used by non-Members and further constrains the price that the Exchange is able to charge for connectivity and other access fees to its market. The Exchange notes that it could, but chooses not to, preclude market participants from reselling its connectivity. The Exchange also chooses not to adopt fees that would be assessed to third-party resellers on a per customer basis (i.e., fees based on the number of firms that connect to the Exchange indirectly via the third-party). Indeed, the Exchange does not receive any connectivity revenue when connectivity is resold by a third-party, which often is resold to multiple customers, some of whom are agency broker-

the Sponsored User any fees it deems appropriate, even if such fees would otherwise be considered supra-competitive, or otherwise potentially unreasonable or uncompetitive.

²² See Securities Exchange Act Release No. 90333 (November 4, 2020), 85 FR 71666 (November 10, 2020) (SR-CBOE-2020-105) (the “Cboe Fee Filing”). The Cboe Fee Filing cited to the October 2020 Active Broker Dealer Report, provided by the Commission’s Office of Managing Executive, on October 8, 2020.

²³ Id.

dealers that have numerous customers of their own.²⁴ In sum, the Exchange believes this creates and fosters a competitive environment and subjects the Exchange to competitive forces in pricing its connectivity and access fees. Particularly, in the event that a market participant views the Exchange's direct connectivity and access fees as more or less attractive than competing markets, that market participant can choose to connect to the Exchange indirectly or may choose not to connect to the Exchange and connect instead to one or more of the other 15 options markets. Accordingly, the Exchange believes that the Proposed Access Fees are fair and reasonable and do not result in excessive pricing or supra-competitive profit.

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

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With respect to intra-market competition, the Exchange does not believe that the proposed rule change would place certain market participants at the Exchange at a relative disadvantage compared to other market participants or affect the ability of such market participants to compete. As stated above, the Exchange does not believe its proposed pricing will impose a barrier to entry to smaller participants and notes that its proposed connectivity pricing structure for its 10Gb ULL connections is associated with relative usage of the various market participants. Further, the majority of firms that purchase 10Gb ULL connections may either save money or pay the same amount after the tiered-pricing structure is implemented.

While total cost may be increased for market participants with larger capacity needs or for

²⁴ The Exchange notes that resellers are not required to publicize, let alone justify or file with the Commission their fees, and as such could charge the market participant any fees it deems appropriate (including connectivity fees higher than the Exchange's connectivity fees), even if such fees would otherwise be considered potentially unreasonable or uncompetitive fees.

business/technical preferences, such options provide far more capacity and are purchased by those that consume more resources from the network. Accordingly, the proposed tiered-pricing structure does not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation reflects the network resources consumed by the various usage of market participants – lowest bandwidth consuming members pay the least, and highest bandwidth consuming members pays the most, particularly since higher bandwidth consumption translates to higher costs to the Exchange.

The Exchange also does not believe that the proposed rule change will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As discussed above, options market participants are not forced to connect to all options exchanges. The Exchange operates in a highly competitive environment, and as discussed above, its ability to price access and connectivity is constrained by competition among exchanges and third parties. There are other options markets of which market participants may connect to trade options. There is also a possible range of alternative strategies, including routing to the exchange through another participant or market center or accessing the Exchange indirectly. For example, there are 15 other U.S. options exchanges, which the Exchange must consider in its pricing discipline in order to compete for market participants. In this competitive environment, market participants are free to choose which competing exchange or reseller to use to satisfy their business needs. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges. Accordingly, the Exchange does not believe its proposed fee changes impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

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,²⁵ and Rule 19b-4(f)(2)²⁶ 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.

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-2021-23 on the subject line.

²⁵ 15 U.S.C. 78s(b)(3)(A)(ii).

²⁶ 17 CFR 240.19b-4(f)(2).

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-2021-23. 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-2021-23 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.²⁷

J. Matthew DeLesDernier
Assistant Secretary

²⁷ 17 CFR 200.30-3(a)(12).