

SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34-94717; File No. SR-EMERALD-2022-13)

April 14, 2022

Self-Regulatory Organizations; MIAX Emerald LLC; Notice of Filing of a Proposed Rule Change to Amend the MIAX Emerald Fee Schedule to Increase Certain Connectivity Fees; Suspension of and Order Instituting Proceedings to Determine Whether to Approve or Disapprove the Proposed Rule Change

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”),<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on April 1, 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 and II 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 and is, pursuant to Section 19(b)(3)(C) of the Act, hereby: (i) temporarily suspending the rule change; and (ii) instituting proceedings to determine whether to approve or disapprove the proposed rule change.

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 Options 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.

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

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 [sic] 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 increase the fees for Members<sup>3</sup> and non-Members to access the Exchange’s System Networks<sup>4</sup> via a 10 gigabit (“Gb”) ultra-low latency (“ULL”) fiber connection.<sup>5</sup> Specifically, the Exchange proposes to amend Sections 5)a)-

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<sup>3</sup> 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.

<sup>4</sup> The Exchange’s System Networks consist of the Exchange’s extranet, internal network, and external network.

<sup>5</sup> The Exchange initially filed a proposal on July 30, 2021 to adopt a tiered-pricing structure for the 10Gb ULL fiber connections. The proposal to adopt a tiered pricing structure was withdrawn and refiled several times, each time providing more detail and additional justification in response to questions raised by the Commission in its Suspension Orders and in response to comments received. Ultimately, in response to questions raised by the Commission in its Suspension Orders and comment letters submitted by SIG on the proposed tiered pricing structure, the Exchange reluctantly withdrew that proposal on March 30, 2022, despite the fact that the proposed a tiered-pricing structure reduced the monthly 10Gb ULL connectivity fees for approximately 60% of the Exchange’s subscribers. See Securities Exchange Act Release Nos. 92645 (August 11, 2021), 86 FR 46048 (August 17, 2021) (SR-EMERALD-2021-23); 93166 (September 28, 2021), 86 FR 54760 (October 4, 2021) (SR-EMERALD-2021-29); 93644 (November 22, 2021), 86 FR 67750 (November 29, 2021); 93776 (December 14, 2021), 86 FR 71983 (December 20, 2021) (SR-EMERALD-2021-42); 94089 (January 27, 2022); 94257 (February 15, 2022), 87 FR 9678 (February 22, 2022) (SR-EMERALD-2022-04). See also letters from Richard J. McDonald, Susquehanna International Group,

b) of the Fee Schedule to increase the 10Gb ULL fee for Members and non-Members from \$10,000 per month to \$12,000 per month (“10Gb ULL Fee”). Prior to the proposed fee change, the Exchange assessed 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 believes that other exchanges’ connectivity fees offer useful examples of alternative approaches to providing and charging for connectivity and includes the below table for comparison purposes only to show how its proposed fees compare to fees currently charged by other options exchanges for similar connectivity. As shown by the below table, the Exchange’s proposed fees are less than fees charged for similar connectivity provided by other options exchanges with comparable market share.

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LLC (“SIG”), to Vanessa Countryman, Secretary, Commission, dated September 7, 2021, October 1, 2021, October 26, 2021, and March 15, 2022. See letters from Richard J. McDonald, SIG, to Vanessa Countryman, Secretary, Commission, dated October 1, 2021 (“SIG Letter 2”) and October 26, 2021 (“SIG Letter 3”). See also letter from Tyler Gellasch, Executive Director, Healthy Markets Association (“HMA”), to Hon. Gary Gensler, Chair, Commission, dated October 29, 2021 (commenting on SR-CboeEDGA-2021-017, SR-CboeBYX-2021-020, SR-Cboe-BZX-2021-047, SR-CboeEDGX-2021-030, SR-MIAX-2021-41, SR-PEARL-2021-45, and SR-EMERALD-2021-29 and stating that “MIAX has repeatedly filed to change its connectivity fees in a way that will materially lower costs for many users, while increasing the costs for some of its heaviest of users. These filings have been withdrawn and repeatedly refiled. *Each time, however, the filings contain significantly greater information about who is impacted and how than other filings that have been permitted to take effect without suspension*”) (*emphasis added*) (“HMA Letter”); and Ellen Green, Managing Director, Equity and Options Market Structure, Securities Industry and Financial Markets Association (“SIFMA”), to Vanessa Countryman, Secretary, Commission, dated November 26, 2021 (“SIFMA Letter”).

<b>Exchange</b>	<b>Type of Connection</b>	<b>Monthly Fee (per connection)</b>
MIAX Emerald (as proposed) (equity options market share of 3.95% as of March 29, 2022 for the month of March) <sup>6</sup>	10Gb ULL	\$12,000.00
The NASDAQ Stock Market LLC (“NASDAQ”) <sup>7</sup> (equity options market share of 8.62% as of March 29, 2022 for the month of March) <sup>8</sup>	10Gb Ultra fiber	\$15,000.00
Nasdaq ISE LLC (“ISE”) <sup>9</sup> (equity options market share of 5.83% as of March 29, 2022 for the month of March) <sup>10</sup>	10Gb Ultra fiber	\$15,000.00
NYSE American LLC (“Amex”) <sup>11</sup> (equity options market share of 7.15% as of March 29, 2022 for the month of March) <sup>12</sup>	10Gb LX LCN	\$22,000.00
Nasdaq GEMX, LLC (“GEMX”) <sup>13</sup> (equity options market share of 2.48% as of March 29, 2022 for the month of March) <sup>14</sup>	10Gb Ultra	\$15,000.00

<sup>6</sup> See “The market at a glance,” available at <https://www.miaxoptions.com/> (last visited March 29, 2022).

<sup>7</sup> See NASDAQ Rules, General 8: Connectivity, Section 1. Co-Location Services.

<sup>8</sup> See *supra* note 6.

<sup>9</sup> See ISE Rules, General 8: Connectivity.

<sup>10</sup> See *supra* note 6.

<sup>11</sup> See NYSE American Options Fee Schedule, Section IV.

<sup>12</sup> See *supra* note 6.

<sup>13</sup> See GEMX Rules, General 8: Connectivity.

<sup>14</sup> See *supra* note 6.

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 Exchange 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 Exchange 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.

## 2. Statutory Basis

The Exchange believes that the proposed increase to the 10Gb ULL Fee is consistent with Section 6(b) of the Act<sup>15</sup> in general, and furthers the objectives of Section 6(b)(4) of the Act<sup>16</sup> in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among Members and other persons using any facility or system that the Exchange operates or controls. The Exchange also believes the proposed increase to the 10Gb ULL Fee furthers the objectives of Section 6(b)(5) of the Act<sup>17</sup> in that it is designed to promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and

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<sup>15</sup> 15 U.S.C. 78f(b).

<sup>16</sup> 15 U.S.C. 78f(b)(4).

<sup>17</sup> 15 U.S.C. 78f(b)(5).

open market and a national market system, and, in general, protect investors and the public interest and are not designed to permit unfair discrimination between customers, issuers, brokers and dealers.

The Exchange believes that the information provided to justify the proposed increase to the 10Gb ULL Fee meets or exceeds the amount of detail required in respect of proposed fee changes as set forth in recent Commission and Commission Staff guidance. On March 29, 2019, the Commission issued an Order disapproving a proposed fee change by the BOX Market LLC Options Facility to establish connectivity fees for its BOX Network (the “BOX Order”).<sup>18</sup> On May 21, 2019, the Commission Staff issued guidance “to assist the national securities exchanges and FINRA ... in preparing Fee Filings that meet their burden to demonstrate that proposed fees are consistent with the requirements of the Securities Exchange Act.”<sup>19</sup> Based on both the BOX Order and the Guidance, the Exchange believes that the proposed increase to the 10Gb ULL Fee is consistent with the Act because it (i) is reasonable, equitably allocated, not unfairly discriminatory, and not an undue burden on competition; (ii) complies with the BOX Order and the Guidance; and (iii) is supported by evidence (including comprehensive revenue and cost data and analysis) that the proposed increase to the 10Gb ULL Fee is fair and reasonable and will not result in excessive pricing or supra-competitive profit.

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<sup>18</sup> 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) (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).

<sup>19</sup> 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”).

**The Proposed Increase to the 10Gb ULL Fee will not Result in a Supra-Competitive Profit**

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 amendment 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 fees for market participants to access an exchange's marketplace.

In the Guidance, the Commission Staff states that, “[a]s an initial step in assessing the reasonableness of a fee, staff considers whether the fee is constrained by significant competitive forces.”<sup>20</sup> The Guidance further states that, “... even where an SRO cannot demonstrate, or does not assert, that significant competitive forces constrain the fee at issue, a cost-based discussion may be an alternative basis upon which to show consistency with the Exchange Act.”<sup>21</sup> In the Guidance, the Commission Staff further states that, “[i]f an SRO seeks to support its claims that a proposed fee is fair and reasonable because it will permit recovery of the SRO's costs, or will not result in excessive pricing or supra-competitive profit, specific information, including quantitative information, should be provided to support that argument.”<sup>22</sup> The Exchange does not assert that the 10Gb ULL Fee is constrained by competitive forces. Rather, the Exchange asserts that the proposed increase to the 10Gb ULL Fee is reasonable because it will permit

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<sup>20</sup> Id.

<sup>21</sup> Id.

<sup>22</sup> Id.

recovery of the Exchange’s costs in providing access services to supply 10Gb ULL connectivity and will not result in the Exchange generating a supra-competitive profit.

The Guidance defines “supra-competitive profit” as “profits that exceed the profits that can be obtained in a competitive market.”<sup>23</sup> The Commission Staff further states in the Guidance that “the SRO should provide an analysis of the SRO’s baseline revenues, costs, and profitability (before the proposed fee change) and the SRO’s expected revenues, costs, and profitability (following the proposed fee change) for the product or service in question.”<sup>24</sup> The Exchange provides this analysis below.

The proposed 10Gb ULL Fee is based on a cost-plus model. A 10Gb ULL connection provides access to each of the three Exchange networks, extranet, internal network, and external network, all of which are necessary for Exchange operations. The Exchange’s extranet provides the means by which the Exchange communicates with market participants and includes access to the Member portal and the ability to send and receive daily communications and reports. The internal network connects the extranet to the rest of the Exchange’s systems and includes trading systems, market data systems, and network monitoring. The external network includes connectivity between the Exchange and other national securities exchanges, market data providers, and between the Exchange’s locations in Princeton, New Jersey, Secaucus, New Jersey (NY4), Miami, Florida, and Chicago, Illinois (CH4). In determining the appropriate fees to charge Members and non-Members to access the Exchange’s System Networks via a 10Gb ULL fiber connection, the Exchange considered its costs to provide and maintain its System Networks and connectivity to those System Networks, using costs that are related to providing

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<sup>23</sup> Id.

<sup>24</sup> Id.



and maintaining access the Exchange's System Networks via a 10Gb ULL fiber connection to estimate such costs, and set fees that are designed to cover its costs with a limited return in excess of such costs. The Exchange believes that it is important to demonstrate that the 10Gb ULL Fee is based on its costs and reasonable business needs and believes the proposed increase to the 10Gb ULL Fee will allow the Exchange to continue to offset expenses. However, as discussed more fully below, such fees may also result in the Exchange recouping less than all of its costs of providing and maintaining access to the Exchange's System Networks via a 10Gb ULL fiber connection because of the uncertainty of forecasting subscriber decision making with respect to firms' connectivity needs. The Exchange believes that the proposed increase to the 10Gb ULL Fee will not result in excessive pricing or supra-competitive profit based on the total expenses the Exchange incurs versus the total revenue the Exchange projects to collect, and therefore meets the standards in the Act as interpreted by the Commission and the Commission Staff in the BOX Order and the Guidance.

The Exchange conducted an extensive cost review in which the Exchange analyzed nearly every expense item in the Exchange's general expense ledger to determine whether each such expense relates to the 10Gb ULL Fee, and, if such expense did so relate, what portion (or percentage) of such expense actually supports access to the Exchange's System Networks via a 10Gb ULL fiber connection associated with the 10Gb ULL Fee. In determining what portion (or percentage) to allocate to access services, each Exchange department head, in coordination with other Exchange personnel, determined the expenses that support access services and System Networks associated with the 10Gb ULL Fee. This included numerous meetings between the Exchange's Chief Information Officer, Chief Financial Officer, Head of Strategic Planning and Operations, Chief Technology Officer, various members of the Legal Department, and other

group leaders. The analysis also included each department head meeting with the divisions of teams within each department to determine the amount of time and resources allocated by employees within each division towards the access services and System Networks associated with the 10Gb ULL Fee. The Exchange reviewed each individual expense to determine if such expense was related to the 10Gb ULL Fee. Once the expenses were identified, the Exchange department heads, with the assistance of our internal finance department, reviewed such expenses holistically on an Exchange-wide level to determine what portion of that expense supports providing access services and the System Networks. The sum of all such portions of expenses represents the total cost to the Exchange to provide access services associated with the 10Gb ULL Fee. For the avoidance of doubt, no expense amount is allocated twice.

The analysis conducted by the Exchange is a proprietary process that is designed to make a fair and reasonable assessment of costs and resources allocated to support the provision of access services associated with the 10Gb ULL Fee. The Exchange acknowledges that this assessment can only capture a moment in time and that costs and resource allocations may change. That is why the Exchange historically, and on an ongoing annual basis, reviews its costs and resource allocations to ensure it appropriately allocates resources to properly provide services to the Exchange's constituents.

The Exchange believes exchanges, like all businesses, should be provided flexibility when developing and applying a methodology to allocate costs and resources they deem necessary to operate their business, including providing market data and access services. The Exchange notes that costs and resource allocations may vary from business to business and, likewise, costs and resource allocations may differ from exchange to exchange when it comes to providing market data and access services. It is a business decision that must be evaluated by

each exchange as to how to allocate internal resources and what costs to incur internally or via third parties that it may deem necessary to support its business and its provision of market data and access services to market participants.

The Exchange notes that there are material costs associated with providing the infrastructure and headcount to fully support access to the Exchange and its System Networks via a 10Gb ULL fiber connection. 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. Both fixed and variable expenses have significant impact on the Exchange's overall costs to provide and maintain access to the Exchange's System Networks via a 10Gb ULL fiber connection. For example, to accommodate new Members, the Exchange may need to purchase additional hardware to support those Members as well as provide enhanced monitoring and reporting of customer performance that the Exchange and its affiliates currently provide. Further, as the total number of 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 10Gb ULL Fee is a reasonable attempt to offset a portion of those costs associated with providing access to and maintaining its System Networks' infrastructure and related 10Gb ULL fiber connection.

The Exchange estimated its total annual expense to provide and maintain access to the Exchange's System Networks via a 10Gb ULL fiber connection based on the following general expense categories: (1) external expenses, which include fees paid to third parties for certain

products and services; (2) internal expenses relating to the internal costs to provide the services associated with the 10Gb ULL Fee; and (3) general shared expenses.<sup>25</sup> The Guidance does not include any information regarding the methodology that an exchange should use to determine its cost associated with a proposed fee change. The Exchange utilized a methodology in this proposed fee change that it believes is reasonable because the Exchange analyzed its entire cost structure, allocated a percentage of each cost attributable to maintaining its System Networks, then divided those costs according to the cost methodology outlined below.

For 2022, the total annual expense for providing the access services associated with the 10Gb ULL Fee is estimated to be \$9,088,382, or \$757,365 per month. The Exchange believes it is more appropriate to analyze the 10Gb ULL Fee utilizing its estimated 2022 revenue and costs, which utilize the same presentation methodology as set forth in the Exchange's previously-issued Audited Unconsolidated Financial Statements.<sup>26</sup> The \$9,088,382 estimated total annual expense is directly related to the access to the Exchange's System Networks via a 10Gb ULL fiber connection, and not any other product or service offered by the Exchange. For example, it does not include general costs of operating matching engines and other trading technology. No expense amount was allocated twice. Each of the categories of expenses are

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<sup>25</sup> 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.

<sup>26</sup> 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 2022 Form 1 Amendment, which will be filed in 2023.

set forth in the following table and details of the individual line-item costs considered by the Exchange for each category are described further below.

<b>External Expenses</b>	
<b>Category</b>	<b>Percentage of Total Expense Amount Allocated</b>
Data Center Provider	62%
Fiber Connectivity Provider	62%
Security Financial Transaction Infrastructure (“SFTI”), and Other Connectivity and Content Service Providers	89%
Hardware and Software Providers	51%
Total of External Expenses	\$1,946,869 <sup>27</sup>
<b>Internal Expenses</b>	
<b>Category</b>	<b>Expense Amount Allocated</b>
Employee Compensation	\$3,259,251
Depreciation and Amortization	\$2,164,610
Occupancy	\$284,947
Total of Internal Expenses	\$5,708,808
Allocated Shared Expenses	\$1,432,705

The Exchange notes that it only has two primary sources of revenue, connectivity and port fees, to recover those costs associated with providing and maintaining access to the Exchange’s System Networks. The Exchange notes that, without the specific third-party and

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<sup>27</sup> The Exchange does not believe it is appropriate to disclose the actual amount it pays to each individual third-party provider as those fee arrangements are competitive or the Exchange is contractually prohibited from disclosing that number.

internal expense items, the Exchange would not be able to provide and maintain the System Networks and access to the System Networks via a 10Gb ULL fiber connection to Members and non-Members. Each of these expense items, including physical hardware, software, employee compensation and benefits, occupancy costs, and the depreciation and amortization of equipment, has been identified through a line-by-line item analysis to be integral to providing and maintaining the System Networks and access to System Networks via a 10Gb ULL fiber connection.

For clarity, the Exchange took a conservative approach in determining the expense and the percentage of that expense to be allocated to providing and maintaining the System Networks and access to System Networks in connection with 10Gb ULL fiber connectivity. The Exchange describes the analysis conducted for each expense and the resources or determinations that were considered when determining the amount necessary to allocate to each expense. Only a portion of all fees paid to such third-parties is included in the third-party expenses described herein, and no expense amount is allocated twice. Accordingly, the Exchange does not allocate its entire information technology and communication costs to providing and maintaining the System Networks and access to Exchange's System Networks via a 10Gb ULL fiber connection. This may result in the Exchange under allocating an expense to provide and maintain its System Networks and access to the System Networks via a 10Gb ULL fiber connection, and such expenses may actually be higher than what the Exchange allocated as part of this proposal. The Exchange notes that expenses associated with its affiliates, MIAX and MIAX Pearl (the options and equities markets), are accounted for separately and are not included within the scope of this filing.

Further, as part its ongoing assessment of costs and expenses, the Exchange recently conducted a periodic, thorough review of its expenses and resource allocations which resulted in revised percentage allocations in this filing. The revised percentages are, among other things, the result of the shuffling of internal resources in response to business objectives and changes to fees charged and services provided by third parties. Therefore, 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.<sup>28</sup>

#### External Expense Allocations

For 2022, expenses relating to fees paid by the Exchange to third parties for products and services necessary to provide and maintain the System Networks and access to the System Networks via a 10Gb ULL fiber connection are estimated to be \$1,946,869. This includes, but is not limited to, a portion of the fees paid to: (1) a third-party data center provider, including for the primary, secondary, and disaster recovery locations of the Exchange's trading system infrastructure; (2) a fiber connectivity provider 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) SFTI, which supports

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<sup>28</sup> The Exchange notes that the expense allocations differ from the Exchange's filing earlier in 2021, SR-EMERALD-2021-11, because that prior filing pertained to several different access fees, which the Exchange had not been charging for since the Exchange launched operations in March 2019. See Securities Exchange Act Release No. 91460 (April 2, 2021), 86 FR 18349 (April 8, 2021) (SR-EMERALD-2021-11). In SR-EMERALD-2021-11, the Exchange sought to adopt fees for FIX Ports, MEI Ports, Purge Ports, Clearing Trade Drop Ports, and FIX Drop Copy Ports, all of which had been free for market participants for over two years since inception.

connectivity feeds for the entire U.S. options industry; (4) various other content and connectivity service providers, 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 that support the production environment in which Members and non-Members connect to the network to trade and receive market data.

*Data Center Space and Operations Provider*

The Exchange does not own the primary data center or the secondary data center, but instead leases space in data centers operated by third parties where the Exchange houses servers, switches and related equipment. Data center costs include an allocation of the costs the Exchange incurs to provide physical connectivity in the third-party data centers where it maintains its equipment as well as related costs. The data center provider operates the data centers (primary, secondary, and disaster recovery) that host the Exchange's network infrastructure. Without the retention of a third-party data center, the Exchange would not be able to operate its systems and provide a trading platform for market participants. The Exchange does not employ a separate fee to cover its data center expense and recoups that expense, in part, by charging for 10Gb ULL connectivity.

The Exchange reviewed its data center footprint, including its total rack space, cage usage, number of servers, switches, cabling within the data center, heating and cooling of physical space, storage space, and monitoring and divided its data center expenses among providing transaction services, market data, and connectivity. Based on this review, the Exchange determined that 62% of the total applicable data center provider expense is applicable to providing and maintaining access services and System Networks associated with the 10Gb ULL Fee. The Exchange believes this allocation is reasonable because 10Gb ULL



connectivity is a core means of access to the Exchange's network, providing one method for market participants to send and receive order and trade messages, as well as receive market data. A large portion of the Exchange's data center expense is due to providing and maintaining connectivity to the Exchange's System Networks, including providing cabling within the data center between market participants and the Exchange. The Exchange excluded from this allocation servers that are dedicated to market data. The Exchange also did not allocate the remainder of the data center expense because it pertains to other areas of the Exchange's operations, such as ports, market data, and transaction services.

#### *Fiber Connectivity Provider*

The Exchange engages a third-party service provider that provides the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data center, and office locations in Princeton and Miami. Fiber connectivity is necessary for the Exchange to switch to its secondary data center in the case of an outage in its primary data center. Fiber connectivity also allows the Exchange's National Operations & Control Center ("NOCC") and Security Operations Center ("SOC") in Princeton to communicate with the Exchange's primary and secondary data centers. As such, all trade data, including the billions of messages each day, flow through this third-party provider's infrastructure over the Exchange's network. Without these services, the Exchange would not be able to operate and support the network and provide and maintain access services and System Networks associated with the 10Gb ULL Fee to its Members and their customers. Without the retention of a third-party fiber connectivity provider, the Exchange would not be able to communicate between its data centers and office locations. The Exchange does not employ a separate fee to cover its

fiber connectivity expense and recoups that expense, in part, by charging for 10Gb ULL connectivity.

The Exchange reviewed its costs to retain fiber connectivity from a third party, including the ongoing costs to support fiber connectivity, ensuring adequate bandwidth and infrastructure maintenance to support exchange operations, and ongoing network monitoring and maintenance and determined that 62% of the total fiber connectivity expense was applicable to providing and maintaining access services and System Networks associated with the 10Gb ULL Fee. The Exchange believes this allocation is reasonable because 10Gb ULL connectivity is a core means of access to the Exchange's network, providing one method for market participants to send and receive order and trade messages, as well as receive market data. A large portion of the Exchange's fiber connectivity expense is due to providing and maintaining connectivity between the Exchange's System Networks, data centers, and office locations and is core to the daily operation of the Exchange. Fiber connectivity is a necessary integral means to disseminate information from the Exchange's primary data center to other Exchange locations. The Exchange excluded from this allocation fiber connectivity usage related to market data or other business lines. The Exchange also did not allocate the remainder of this expense because it pertains to other areas of the Exchange's operations and does not directly relate to providing and maintaining access services and System Networks associated with the 10Gb ULL Fee. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to retain fiber connectivity and maintain and provide access to its System Networks via a 10Gb ULL fiber connectivity.

*Connectivity and Content Services Provided by SFTI and Other Providers*

The Exchange relies on SFTI and various other connectivity and content service providers for connectivity and data feeds for the entire U.S. options industry, as well as content, connectivity, and infrastructure services for critical components of the network that are necessary to provide and maintain its System Networks and access to its System Networks via a 10Gb ULL fiber connection. Specifically, the Exchange utilizes SFTI and other content service provider to connect to other national securities exchanges, the Options Price Reporting Authority (“OPRA”), and to receive market data from other exchanges and market data providers. SFTI is operated by the Intercontinental Exchange, the parent company of five registered exchanges, and has become integral to the U.S. markets. The Exchange understands SFTI provides services to most, if not all, of the other U.S. exchanges and other market participants. Without services from SFTI and various other service providers, the Exchange would not be able to connect to other national securities exchanges, market data providers, or OPRA and, therefore, would not be able to operate and support its System Networks. The Exchange does not employ a separate fee to cover its SFTI and content service provider expense and recoups that expense, in part, by charging for 10Gb ULL connectivity.

The Exchange reviewed its costs to retain SFTI and other content service providers, including network monitoring and maintenance, remediation of connectivity related issues, and ongoing administrative activities related to connectivity management and determined that 89% of the total applicable SFTI and other service provider expense is allocated to providing the access services associated with the 10Gb ULL Fee. SFTI and other content service providers are key vendors and necessary components in providing connectivity to the Exchange. The primary service SFTI provides for the Exchange is connectivity to other national securities

exchanges and their disaster recovery facilities and, therefore, a vast portion of this expense is allocated to providing access to the System Networks via a 10Gb ULL connection.

Connectivity via SFTI is necessary for purposes of order routing and accessing disaster recovery facilities in the case of a system outage. Engaging SFTI and other like vendors provides purchasers of 10Gb ULL connectivity to other national securities exchanges for purposes of order routing and disaster recovery. The Exchange did not allocate a portion of this expense that relates to the receipt of market data from other national securities exchange and OPRA. The Exchange also did not allocate the remainder of this expense because it pertains to other areas of the Exchange's operations and does not directly relate to providing and maintaining the System Networks or access to its System Networks via 10Gb ULL fiber connection. The Exchange believes this allocation is reasonable because it represents the Exchange's actual cost to provide and maintain its System Networks and access to its System Networks via a 10Gb ULL fiber connection, and not any other service, as supported by its cost review.

#### *Hardware and Software Providers*

The Exchange relies on dozens of third-party hardware and software providers for equipment necessary to operate its System Networks. This includes either the purchase or licensing of physical equipment, such as servers, switches, cabling, and monitoring devices. It also includes the purchase or license of software necessary for security monitoring, data analysis and Exchange operations. Hardware and software providers are necessary to maintain its System Networks and provide access to its System Networks via a 10Gb ULL fiber connection. Hardware and software equipment and licenses for that equipment are also necessary to operate and monitor physical assets necessary to offer physical connectivity to the

Exchange. Hardware and software equipment and licenses are key to the operation of the Exchange and, without them, the Exchange would not be able to operate and support its System Networks and provide access to its Members and their customers. The Exchange does not employ a separate fee to cover its hardware and software expense and recoups that expense, in part, by charging for 10Gb ULL connectivity.

The Exchange reviewed its hardware and software related costs, including software patch management, vulnerability management, administrative activities related to equipment and software management, professional services for selection, installation and configuration of equipment and software supporting exchange operations and determined that 51% of the total applicable hardware and software expense is allocated to providing and maintaining access services and System Networks associated with the 10Gb ULL Fee. Hardware and software equipment and licenses are key to the operation of the Exchange and its System Networks. Without them, market participants would not be able to access the System Networks via a 10Gb ULL connection. The Exchange only allocated the portion of this expense to the hardware and software that is related to a market participant's use of a 10Gb ULL connection, such as operating its matching engines. The Exchange, therefore, did not allocate portions of its hardware and software expense that related to other areas of the Exchange's business, such as hardware and software used for market data or unrelated administrative services. The Exchange also did not allocate the remainder of this expense because it pertains to other areas of the Exchange's operations, such as ports or transaction services, and does not directly relate to providing and maintaining its System Networks and access to its System Networks via a 10Gb ULL fiber connection. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to provide and maintain its System Networks and access to its

System Networks via a 10Gb ULL fiber connection, and not any other service, as supported by its cost review.

#### Internal Expense Allocations

For 2022, total internal expenses relating to the Exchange providing and maintaining its System Networks and access to its System Networks via a 10Gb ULL fiber connection are estimated to be \$5,708,808. This includes, but is not limited to, costs associated with: (1) employee compensation and benefits for full-time employees that support the System Networks and access to System Networks via a 10Gb ULL fiber connection, 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 as well as important system upgrades; (2) depreciation and amortization of hardware and software used to provide and maintain access services and System Networks associated with the 10Gb ULL Fee, 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 and maintain the System Networks and access to System Networks via 10G ULL fiber connections. The breakdown of these costs is more fully described below.

#### Employee Compensation and Benefits

Human personnel are key to exchange operations and supporting the Exchange's ongoing provision and maintenance of the System Networks and access to System Networks via 10Gb ULL fiber connections. The Exchange reviewed its employee compensation and benefits expense and the portion of that expense allocated to providing and maintaining the System Networks and access to System Networks via 10Gb ULL fiber connections. As part of this

review, the Exchange considered employees whose functions include providing and maintaining the System Networks and 10Gb ULL connectivity and used a blended rate of compensation reflecting salary, stock and bonus compensation, bonuses, benefits, payroll taxes, and 401K matching contributions.<sup>29</sup>

Based on this review, the Exchange determined to allocate \$3,259,251 in employee compensation and benefits expense to providing access to the System Networks. To determine the appropriate allocation the Exchange reviewed the time employees allocated to supporting its System Networks and access to its System Networks via 10Gb ULL fiber connections. Senior staff also reviewed these time allocations with department heads and team leaders to determine whether those allocations were appropriate. These employees are critical to the Exchange to provide and maintain access to its System Networks via 10Gb ULL fiber connections for its Members, non-Members and their customers. The Exchange determined the above allocation based on the personnel whose work focused on functions necessary to provide and maintain the System Networks and access to System Networks via 10Gb ULL fiber connections. The Exchange does not charge a separate fee regarding employees who support 10Gb ULL connectivity and the Exchange seeks to recoup that expense, in part, by charging for 10Gb ULL connections.

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<sup>29</sup> For purposes of this allocation, the Exchange did not consider expenses related to supporting employees who support 10Gb ULL connectivity, such as office space and supplies. The Exchange determined cost allocation for employees who perform work in support of offering access services and System Networks to arrive at a full time equivalent (“FTE”) of 9.9 FTEs across all the identified personnel. The Exchange then multiplied the FTE times a blended compensation rate for all relevant Exchange personnel to determine the personnel costs associated with providing the access services and System Networks associated with the 10Gb ULL Fee.

### Depreciation and Amortization

A key expense incurred by the Exchange relates to the depreciation and amortization of equipment that the Exchange procured to provide and maintain the System Networks and access to System Networks via 10Gb ULL fiber connections. The Exchange reviewed all of its physical assets and software, owned and leased, and determined whether each asset is related to providing and maintaining its System Networks and access to its System Networks via 10Gb ULL fiber connections, and added up the depreciation of those assets. All physical assets and software, which includes assets used for testing and monitoring of Exchange infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. In determining the amount of depreciation and amortization to apply to providing 10Gb ULL connectivity and the System Networks, the Exchange considered the depreciation of hardware and software that are key to the operation of the Exchange and its System Networks. This includes servers, computers, laptops, monitors, information security appliances and storage, and network switching infrastructure equipment, including switches and taps, that were previously purchased to maintain and provide access to its System Networks via 10Gb ULL fiber connections. Without them, market participants would not be able to access the System Networks. The Exchange seeks to recoup a portion of its depreciation expense by charging for 10Gb ULL connectivity.

Based on this review, the Exchange determined to allocate \$2,164,610 in depreciation and amortization expense to providing access to the System Networks via a 10Gb ULL connection. The Exchange only allocated the portion of this depreciation expense to the hardware and software related to a market participant's use of a 10GB ULL connection. The Exchange, therefore, did not allocate portions of depreciation expense that relates to other areas



of the Exchange's business, such as the depreciation of hardware and software used for market data or unrelated administrative services.<sup>30</sup>

### Occupancy

The Exchange rents and maintains multiple physical locations to house staff and equipment necessary to support access services, System Networks, and exchange operations. The Exchange's occupancy expense is not limited to the housing of personnel and includes locations used to store equipment necessary for Exchange operations. In determining the amount of its occupancy related expense, the Exchange considered actual physical space used to house employees whose functions include providing and maintaining the System Networks and 10Gb ULL connectivity. Similarly, the Exchange also considered the actual physical space used to house hardware and other equipment necessary to provide and maintain the System Networks and 10Gb ULL connectivity. This equipment includes computers, servers, and accessories necessary to support the System Networks and 10Gb ULL connectivity. Based on this review, the Exchange determined to allocate \$284,947 of its occupancy expense to provide and maintain the System Networks and 10Gb ULL connectivity. The Exchange believes this allocation is reasonable because it represents the Exchange's cost to rent and maintain a physical location for the Exchange's staff who operate and support the System Networks, including providing and maintaining access to its System Networks via 10Gb ULL fiber connections. The Exchange considered the rent paid for the Exchange's Princeton and Miami

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<sup>30</sup> All of the expenses outlined in this proposed fee change refer to the operating expenses of the Exchange. The Exchange did not include any future capital expenditures within these costs. Depreciation and amortization represent the expense of previously purchased hardware and internally developed software spread over the useful life of the assets. Due to the fact that the Exchange has only included operating expense and historical purchases, there is no double counting of expenses in the Exchange's cost estimates.

offices, as well as various related costs, such as physical security, property management fees, property taxes, and utilities at each of those locations. The Exchange did not include occupancy expenses related to housing employees and equipment related to other Exchange operations, such as market data and administrative services.

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The Exchange notes that a material portion of its total overall expense is allocated to the provision and maintenance of access services (including connectivity and ports). The Exchange believes this is reasonable as the Exchange operates a technology-based business that differentiates itself from its competitors based on its more deterministic and resilient 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. Thus, the Exchange believes it is reasonable to allocate a material portion of its total overall expense towards providing and maintaining its System Networks and access to its System Networks via 10Gb ULL fiber connections.

*Allocated Shared Expense*

Finally, a limited portion of general shared expenses was allocated to overall 10Gb ULL connectivity costs as without these general shared costs, the Exchange would not be able to operate in the manner that it does and provide 10Gb ULL connectivity. The costs included in general shared expenses include recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services, and telecommunications costs. For 2022, the Exchange's general shared expense allocated to 10Gb ULL connectivity and the System Networks that support those connections is estimated to be \$1,432,705. The Exchange used the weighted average of the above allocations to determine the amount of general shared

expenses to allocate to the Exchange. Next, based on additional management and expense analysis, these fees are allocated to the proposal.

#### *Revenue and Estimated Profit Margin*

The Exchange only has four primary sources of revenue and cost recovery mechanisms to fund all of its operations: transaction fees, access fees (which includes the 10Gb ULL Fee), regulatory fees, and market data fees. Accordingly, the Exchange must cover all of its expenses from these four primary sources of revenue and cost recovery mechanisms.

To determine the Exchange's estimated revenue associated with the 10Gb ULL Fee, the Exchange analyzed the number of Members and non-Members currently utilizing the 10Gb ULL fiber connection and used a recent monthly billing cycle representative of current monthly revenue. The Exchange also provided its baseline by analyzing March 2022, the monthly billing cycle prior to the proposed 10Gb ULL Fee and compared this to its expenses for that month. As discussed below, the Exchange does not believe it is appropriate to factor into its analysis future revenue growth or decline into its estimates for purposes of these calculations, given the uncertainty of such estimates due to the continually changing access needs of market participants and potential changes in internal and third-party expenses.

For March 2022, prior to the proposed 10Gb ULL Fee, Members and non-Members purchased a total of 98 10Gb ULL connections for which the Exchange anticipates charging \$980,000 (depending on whether Members and non-Members drop or add connections mid-month, resulting in pro-rated charges). This will result in a profit of \$222,635 for that month (a profit margin of 33%). For April 2022, the Exchange anticipates Members and non-Members purchasing a total of 98 10Gb ULL connections. Assuming the Exchange charges its proposed monthly rate of \$12,000 per connection, the Exchange would generate revenue of \$1,176,000

for that month (not including potential pro-rated connection charges for mid-month connections). This would result in a profit of \$418,6335 (\$1,176,000 minus \$757,365) for that month (a modest 3% profit margin increase from March 2022 to April 2022 from 33% to 36%).

The Exchange believes that conducting the above analysis on a per month basis is reasonable as the revenue generated from access services subject to the proposed fee generally remains static from month to month. The Exchange also conducted the above analysis on a per month basis to comply with the Commission Staff’s Guidance, which requires a baseline analysis to assist in determining whether the proposal generates a supra-competitive profit. The Exchange cautions that this profit margin may also fluctuate from month to month based on the uncertainty of predicting how many connections may be purchased from month to month as Members and non-Members are free to add and drop connections at any time based on their own business decisions.

The Exchange believes the proposed profit margin is reasonable and will not result in a “supra-competitive” profit. The Guidance defines “supra-competitive profit” as “profits that exceed the profits that can be obtained in a competitive market.”<sup>31</sup> Until recently, the Exchange has operated at a cumulative net annual loss since it launched operations in 2019.<sup>32</sup> The Exchange has operated at a net loss due to a number of factors, one of which is choosing to forgo revenue by offering certain products, such as connectivity, at lower rates than other options exchanges to attract order flow and encourage market participants to experience the

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<sup>31</sup> See supra note 19.

<sup>32</sup> The Exchange has incurred a cumulative loss of \$22 million since its inception in 2019 to 2020, the last year for which the Exchange’s Form 1 data is available. See Exchange’s Form 1/A, Application for Registration or Exemption from Registration as a National Securities Exchange, filed July 28, 2021, available at <https://sec.report/Document/9999999997-21-004557/>.

high determinism, low latency, and resiliency of the Exchange's trading systems. The Exchange should not now be penalized for now seeking to raise its fees to near market rates after offering such products at discounted prices.

The Exchange notes that its revenue estimate is based on projections and will only be realized to the extent such revenue actually produces the revenue estimated. As a generally new entrant to the hyper-competitive exchange environment, and an exchange focused on driving competition, the Exchange does not yet know whether such expectations will be realized. For instance, in order to generate the revenue expected from 10 GB ULL connectivity, the Exchange will have to be successful in retaining existing clients that wish to maintain physical connectivity or obtaining new clients that will purchase such services. To the extent the Exchange is successful in encouraging new clients to connect directly to the Exchange, the Exchange does not believe it should be penalized for such success. The Exchange, like other exchanges, is, after all, a for-profit business. While the Exchange believes in transparency around costs and potential margins, the Exchange does not believe that these estimates should form the sole basis of whether or not a proposed fee is reasonable or can be adopted. Instead, the Exchange believes that the information should be used solely to confirm that an Exchange is not earning supra-competitive profits, and the Exchange believes its cost analysis and related estimates demonstrate this fact.

Further, the proposed profit margin reflects the Exchange's efforts to control its costs. A profit margin should not be judged alone based on its size, but whether the ultimate fee reflects the value of the services provided and is in line with other exchanges. A profit margin on one exchange should not be deemed excessive where that exchange has been successful in

controlling costs, but not excessive where an exchange is charging the same fee but has a lower profit margin due to higher costs.

The expected profit margin is reasonable because the Exchange offers a premium System Network, System Networks connectivity, and a highly deterministic trading environment. The Exchange is recognized as a leader in network monitoring, determinism, risk protections, and network stability. For example, the Exchange experiences approximately a 95% determinism rate, system throughput of approximately 18 million quotes and average round trip latency rate of approximately 18 microseconds for a single quote. The Exchange provides extreme performance and radical scalability designed to match the unique needs of trading differing asset class/market model combinations. Exchange systems offer two customer interfaces, FIX gateway for orders, and ULL interfaces and data feeds with best-in-class wire order determinism. The Exchange also offers automated continuous testing to ensure high reliability, advanced monitoring and systems security, and employs a software architecture that results in minimizing the demands on power, space, and cooling while allowing for rapid scalability, resiliency and fault isolation. The Exchange also provides latency equalized cross-connects in the primary data center ensures fair and cost efficient access to the MIAX systems. The Exchange, therefore, believes the anticipated profit margin is reasonable because it reflects the Exchange's cost controls and the quality of the Exchanges systems.

The Exchange also believes its proposed profit margin does not exceed what can be obtained in a competitive market. The Exchange is one of sixteen registered U.S. options exchanges and maintains an average market share of approximately 3.50%.<sup>33</sup> The anticipated rate of return is reasonable because it is based on a rate that likely remains lower than what other

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<sup>33</sup> See supra note 6.

exchanges with comparable market share charge for similar connectivity. For example the below table is provided for comparison purposes only to show how the Exchange's proposed fees compare to fees currently charged by other options exchanges for similar connectivity. As shown by the below table, the Exchange's proposed fee remains less than fees charged for similar connectivity provided by other options exchanges with similar market share, notwithstanding that the competing exchanges may have different system architectures that may result in different cost structures for the provision of connectivity.

<b>Exchange</b>	<b>Type of Connection</b>	<b>Monthly Fee (per connection)</b>
MIAX Emerald (as proposed) (equity options market share of 3.95% as of March 29, 2022 for the month of March) <sup>34</sup>	10Gb ULL	\$12,000.00
NASDAQ <sup>35</sup> (equity options market share of 8.62% as of March 29, 2022 for the month of March) <sup>36</sup>	10Gb Ultra fiber	\$15,000.00
ISE <sup>37</sup> (equity options market share of 5.83% as of March 29, 2022 for the month of March) <sup>38</sup>	10Gb Ultra fiber	\$15,000.00
Amex <sup>39</sup> (equity options market share of 7.15% as of March 29, 2022 for the month of March) <sup>40</sup>	10Gb LX LCN	\$22,000.00
GEMX <sup>41</sup> (equity options market share of 2.48% as of March 29, 2022 for the month of March) <sup>42</sup>	10Gb Ultra	\$15,000.00

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<sup>34</sup> See supra note 6.

<sup>35</sup> See supra note 7.

<sup>36</sup> See supra note 6.

<sup>37</sup> See supra note 9.

<sup>38</sup> See supra note 6.

<sup>39</sup> See supra note 11.

<sup>40</sup> See supra note 6.

<sup>41</sup> See supra note 13.

<sup>42</sup> See supra note 6.



Lastly, the Exchange notes that this is a singular potential profit margin from a single revenue source and is not reflective of the Exchange's overall profit margin. This profit margin may be offset by lower or negative profit margins generated by other areas of the Exchange's operations that are not subject to this proposed fee change. The Exchange only has four primary sources of revenue and cost recovery mechanisms to fund all of its operations: transaction fees, access fees (which includes the 10Gb ULL Fee), regulatory fees, and market data fees. A potential profit margin in one area may be used to offset a potential loss in another area, and, therefore, a potential profit margin from a single product is not representative of the Exchange's overall profitability and whether that singular profit exceeds the profits that can be obtained in a competitive market.

#### **The Proposed Fees are Reasonable when Compared to The Fees of other Options**

##### **Exchanges with Similar Market Share**

The Exchange does not have visibility into other equities exchanges' costs to provide connectivity or their fee markup over those costs, and therefore cannot use other exchange's connectivity fees as a benchmark to determine a reasonable markup over the costs of providing connectivity. Nevertheless, the Exchange believes the other exchanges' connectivity fees are a useful example of alternative approaches to providing and charging for connectivity notwithstanding that the competing exchanges may have different system architectures that may result in different cost structures for the provision of connectivity. To that end, the Exchange believes the proposed 10Gb ULL Fee is reasonable because the proposed fee is still less than fees charged for similar connectivity provided by other options exchanges with comparable market shares.

As described in the above table, the Exchange's proposed fee remains less than fees charged for similar connectivity provided by other options exchanges with similar market share. In each of the above cases, the Exchange's proposed fee is still significantly lower than that of competing options exchanges with similar market share. Despite proposing lower or similar fees to that of competing options exchanges with similar market share, the Exchange believes that it provides a premium network experience to its Members and non-Members via a highly deterministic System, enhanced network monitoring and customer reporting, and a superior network infrastructure than markets with higher market shares and more expensive connectivity alternatives. Each of the connectivity rates in place at competing options exchanges were filed with the Commission for immediate effectiveness and remain in place today.

#### **The Proposed Fees are Equitably Allocated**

The Exchange believes that the proposed 10Gb ULL fees are equitably allocated among users of the network connectivity alternatives, as the users of the 10Gb ULL connections consume the most bandwidth and resources of the network. Specifically, the Exchange notes that these users account for approximately greater than 99% of message traffic over the network, while the users of the 1Gb connections account for approximately less than 1% of message traffic over the network. In the Exchange's experience, users of the 1Gb connections do not have a business need for the high performance network solutions required by 10Gb ULL users. The Exchange's high performance network solutions and supporting infrastructure (including employee support), provides unparalleled system throughput and the capacity to handle approximately 18 million quote messages per second. On an average day, the Exchange handles over approximately 3 billion total messages. Of those, users of the 10Gb ULL connections generate approximately 3 billion messages, and users of the 1Gb connections generate 500,000

messages. However, in order to achieve a consistent, premium network performance, the Exchange must build out and maintain a network that has the capacity to handle the message rate requirements of its most heavy network consumers. These billions of messages per day consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. Given this difference in network utilization rate, the Exchange believes that it is reasonable, equitable, and not unfairly discriminatory that the 10Gb ULL users pay for the vast majority of the shared network resources from which all Member and non-Member users benefit, but is designed and maintained from a capacity standpoint to specifically handle the message rate and performance requirements of 10Gb ULL users.

The Exchange also believes that the connectivity fees are equitably allocated amongst users of the network connectivity alternatives, when these fees are viewed in the context of the overall trading volume on the Exchange. To illustrate, the purchasers of the 10Gb ULL connectivity account for approximately 98% of the volume on the Exchange. This overall volume percentage (98% of total Exchange volume) is in line with the amount of network connectivity revenue collected from 10Gb ULL purchasers (99% of total Exchange connectivity revenue). For example, utilizing a recent billing cycle, Exchange Members and non-Members that purchased 10Gb ULL connections accounted for approximately 99% of the total network connectivity revenue collected by the Exchange from all connectivity alternatives; and (ii) Members and non-Members that purchased 1Gb connections accounted for approximately 1% of the revenue collected by the Exchange from all connectivity alternatives.

Lastly, the Exchange further believes that the 10Gb ULL Fee 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 (12) matching engines on MIAX Emerald and a vast majority choose to connect to all twelve (12) matching engines. The Exchange believes that other exchanges require firms to connect to multiple matching engines.<sup>43</sup>

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 is the case with the current proposed flat fee, the proposed fee would apply uniformly to all market participants regardless of the number of connections they choose to purchase. The proposed fee does not favor certain categories of market participants in a manner that would impose an undue burden on competition.

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. There is no reason to believe that our proposed price increase will harm

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<sup>43</sup> See Specialized Quote Interface Specification, Nasdaq PHLX, Nasdaq Options Market, Nasdaq BX Options, Version 6.5a, Section 2, Architecture (revised August 16, 2019), available at <http://www.nasdaqtrader.com/content/technicalsupport/specifications/TradingProducts/SQF6.5a-2019-Aug.pdf>. The Exchange notes that it is unclear whether the NASDAQ exchanges include connectivity to each matching engine for the single fee or charge per connection, per matching engine. See also NYSE Technology FAQ and Best Practices: Options, Section 5.1 (How many matching engines are used by each exchange?) (September 2020). The Exchange notes that NYSE provides a link to an Excel file detailing the number of matching engines per options exchange, with Arca and Amex having 19 and 17 matching engines, respectively.

another exchange's ability to compete. 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. Market participants are free to choose which exchange or reseller to use to satisfy their business needs. 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. Suspension of the Proposed Rule Change

Pursuant to Section 19(b)(3)(C) of the Act,<sup>44</sup> at any time within 60 days of the date of filing of a proposed rule change pursuant to Section 19(b)(1) of the Act,<sup>45</sup> the Commission summarily may temporarily suspend the change in the rules of a self-regulatory organization ("SRO") 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. As discussed below, the Commission believes a temporary suspension of the proposed rule change is necessary and appropriate to allow for additional analysis of the proposed rule change's consistency with the Act and the rules thereunder.

When exchanges file their proposed rule changes with the Commission, including fee filings like the Exchange's present proposal, they are required to provide a statement supporting

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<sup>44</sup> 15 U.S.C. 78s(b)(3)(C).

<sup>45</sup> 15 U.S.C. 78s(b)(1).

the proposal’s basis under the Act and the rules and regulations thereunder applicable to the exchange.<sup>46</sup> The instructions to Form 19b-4, on which exchanges file their proposed rule changes, specify that such statement “should be sufficiently detailed and specific to support a finding that the proposed rule change is consistent with [those] requirements.”<sup>47</sup>

Among other things, exchange proposed rule changes are subject to Section 6 of the Act, including Sections 6(b)(4), (5), and (8), which requires the rules of an exchange to: (1) provide for the equitable allocation of reasonable fees among members, issuers, and other persons using the exchange’s facilities;<sup>48</sup> (2) perfect the mechanism of a free and open market and a national market system, protect investors and the public interest, and not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers;<sup>49</sup> and (3) not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.<sup>50</sup>

In temporarily suspending the Exchange’s fee change, the Commission intends to further consider whether the proposal to modify fees for certain connectivity options is consistent with the statutory requirements applicable to a national securities exchange under the Act. In particular, the Commission will consider whether the proposed rule change satisfies the standards under the Act and the rules thereunder requiring, among other things, that an exchange’s rules provide for the equitable allocation of reasonable fees among members, issuers, and other persons using its facilities; not permit unfair discrimination between customers, issuers, brokers

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<sup>46</sup> See 17 CFR 240.19b-4 (Item 3 entitled “Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change”).

<sup>47</sup> Id.

<sup>48</sup> 15 U.S.C. 78f(b)(4).

<sup>49</sup> 15 U.S.C. 78f(b)(5).

<sup>50</sup> 15 U.S.C. 78f(b)(8).

or dealers; and do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act.<sup>51</sup>

Therefore, the Commission finds that it is appropriate in the public interest, for the protection of investors, and otherwise in furtherance of the purposes of the Act, to temporarily suspend the proposed rule change.<sup>52</sup>

#### IV. Proceedings to Determine Whether to Approve or Disapprove the Proposed Rule Change

The Commission is instituting proceedings pursuant to Sections 19(b)(3)(C)<sup>53</sup> and 19(b)(2)(B)<sup>54</sup> of the Act to determine whether the Exchange's proposed rule change should be approved or disapproved. Institution of such proceedings is appropriate at this time in view of the legal and policy issues raised by the proposed rule change. Institution of proceedings does not indicate that the Commission has reached any conclusions with respect to any of the issues involved. Rather, as described below, the Commission seeks and encourages interested persons to provide comments on the proposed rule change to inform the Commission's analysis of whether to approve or disapprove the proposed rule change.

Pursuant to Section 19(b)(2)(B) of the Act,<sup>55</sup> the Commission is providing notice of the grounds for possible disapproval under consideration. The Commission is instituting

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<sup>51</sup> See 15 U.S.C. 78f(b)(4), (5), and (8), respectively.

<sup>52</sup> For purposes of temporarily suspending the proposed rule change, the Commission has considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

<sup>53</sup> 15 U.S.C. 78s(b)(3)(C). Once the Commission temporarily suspends a proposed rule change, Section 19(b)(3)(C) of the Act requires that the Commission institute proceedings under Section 19(b)(2)(B) to determine whether a proposed rule change should be approved or disapproved.

<sup>54</sup> 15 U.S.C. 78s(b)(2)(B).

<sup>55</sup> 15 U.S.C. 78s(b)(2)(B). Section 19(b)(2)(B) of the Act also provides that proceedings to determine whether to disapprove a proposed rule change must be concluded within 180 days of the date of publication of notice of the filing of the proposed rule change. See id.

proceedings to allow for additional analysis of whether the Exchange has sufficiently demonstrated how the proposed rule change is consistent with Sections 6(b)(4),<sup>56</sup> 6(b)(5),<sup>57</sup> and 6(b)(8)<sup>58</sup> of the Act. Section 6(b)(4) of the Act requires that the rules of a national securities exchange provide for the equitable allocation of reasonable dues, fees, and other charges among its members and issuers and other persons using its facilities. Section 6(b)(5) of the Act requires that the rules of a national securities exchange be designed, among other things, 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 not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers. Section 6(b)(8) of the Act requires that the rules of a national securities exchange not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

The Commission asks that commenters address the sufficiency of the Exchange's statements in support of the proposal, in addition to any other comments they may wish to submit about the proposed rule change. In particular, the Commission seeks comment on the following aspects of the proposal and asks commenters to submit data where appropriate to support their views:

1. Cost Estimates and Allocation. The Exchange states that it is not asserting that the proposed 10Gb ULL Fee is constrained by competitive forces, but rather set forth a

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The time for conclusion of the proceedings may be extended for up to 60 days if the Commission finds good cause for such extension and publishes its reasons for so finding, or if the exchange consents to the longer period. See id.

<sup>56</sup> 15 U.S.C. 78f(b)(4).

<sup>57</sup> 15 U.S.C. 78f(b)(5).

<sup>58</sup> 15 U.S.C. 78f(b)(8).



“cost-plus model,” employing a “conservative approach” in determining the expense and the percentage of that expense to be allocated to providing and maintaining the System Networks and access to System Networks in connection with 10Gb ULL fiber connectivity.<sup>59</sup> Setting forth its costs in providing 10Gb ULL connectivity, and as summarized in greater detail above, the Exchange projects that the total combined annual expense for providing the access services associated with the 10Gb ULL Fee in 2022 will be \$9,088,382, the sum of: (1) \$1,946,869 in third-party expenses paid in total to their Data Center Provider (62% of the total applicable expense) for data center services; Fiber Connectivity Provider, for network services (62% of the total applicable expense); SFTI and other connectivity and content service providers for connectivity support (89% of the total applicable expense); and various other hardware and software providers (51% of the total applicable expense), (2) \$5,708,808 in internal expenses, allocated to (a) employee compensation and benefit costs (\$3,259,251); (b) depreciation and amortization (\$2,164,610); and (c) occupancy costs (\$284,947) and (3) \$1,432,705 of allocated general shared expenses that include recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services, and telecommunications costs. Do commenters believe that these allocations are reasonable? Should the Exchange be required to provide more specific information regarding the allocation of third-party expenses, such as the overall estimated cost for each category of external expenses or at minimum the total applicable third-party expenses? Should the Exchange have provided either a percentage allocation or statements regarding the Exchange’s

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<sup>59</sup> See supra Section II.A.2.

overall estimated costs for the internal expense categories and general shared expenses figure? Do commenters believe that the Exchange has provided sufficient detail about how it determined which costs are associated with providing and maintaining 10Gb ULL connectivity and why? Do commenters believe that the Exchange has provided sufficient detail about how it determined “general shared expenses” and how it determined what portion should be associated with providing and maintaining 10Gb ULL connectivity? Do commenters believe that the Exchange provided sufficient detail or explanation to support its claim that “no expense amount is allocated twice,”<sup>60</sup> whether among the sub-categories of expenses in this filing, across the Exchange’s fee filings for other products or services, or over time? The Exchange describes a “proprietary” process that was applied in making these determinations or arriving at particular allocations. Do commenters believe further explanation is necessary? What are commenters’ views on whether the Exchange has provided sufficient detail on the identity and nature of services provided by third parties? Across all of the Exchange’s projected costs, what are commenters’ views on whether the Exchange has provided sufficient detail on the elements that go into connectivity costs, including how shared costs are allocated and attributed to connectivity expenses, to permit an independent review and assessment of the reasonableness of purported cost-based fees and the corresponding profit margin thereon?

2. Revenue Estimates and Profit Margin Range. The Exchange provides a single monthly revenue figure from March 2022 as the basis for calculating the profit

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<sup>60</sup> See id.

margin of 36%. Do commenters believe this is reasonable? If not, why not? The Exchange states that their proposed fee structure is “designed to cover its costs with a limited return in excess of such costs,” and believes that a 36% margin is a limited return over such costs.<sup>61</sup> The profit margin is also dependent on the accuracy of the cost projections which, if inflated (intentionally or unintentionally), may render the projected profit margin meaningless. The Exchange acknowledges that this margin may fluctuate from month to month due to changes in the number of connections purchased, and that costs may increase, but that the number of connections has not materially changed over the prior months and so the months that the Exchange has used as a baseline to perform its assessment are representative of reasonably anticipated costs and expenses.<sup>62</sup> The Exchange does not account for the possibility of cost decreases, however. What are commenters’ views on the extent to which actual costs (or revenues) deviate from projected costs (or revenues)? Do commenters believe that the Exchange’s methodology for estimating the profit margin is reasonable? Should the Exchange provide a range of profit margins that they believe are reasonably possible, and the reasons therefor?

3. Reasonable Rate of Return. Do commenters agree with the Exchange that its expected 36% profit margin would constitute a reasonable rate of return over cost for 10GB ULL connectivity, and is not a “supra-competitive” profit that exceeds the profits that can be obtained in a competitive market? If not, what would commenters consider to be a reasonable rate of return and/or what methodology would they

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<sup>61</sup> See supra Section II.A.2.

<sup>62</sup> See id.

- consider to be appropriate for determining a reasonable rate of return? What are commenters' views regarding what factors should be considered in determining what constitutes a reasonable rate of return for 10Gb ULL connectivity fees? Do commenters believe it relevant to an assessment of reasonableness that the Exchange's proposed fees for 10Gb ULL connections are lower than those of other options exchanges to which the Exchange has compared the 10Gb ULL connectivity fees? Should an assessment of reasonable rate of return include consideration of factors other than costs; and if so, what factors should be considered, and why?
4. Periodic Reevaluation. The Exchange has not stated that it would re-evaluate the appropriate level of 10Gb ULL fees if there is a material deviation from the anticipated profit margin. In light of the impact that the number of subscribers has on connectivity profit margins, and the potential for costs to decrease (or increase) over time, what are commenters' views on the need for exchanges to commit to reevaluate, on an ongoing and periodic basis, their cost-based connectivity fees to ensure that they stay in line with their stated profitability target and do not become unreasonable over time, for example, by failing to adjust for efficiency gains, cost increases or decreases, and changes in subscribers? How formal should that process be, how often should that reevaluation occur, and what metrics and thresholds should be considered? How soon after a new connectivity fee change is implemented should an exchange assess whether its subscriber estimates were accurate and at what threshold should an exchange commit to file a fee change if its estimates were inaccurate? Should an initial review take place within the first 30 days after a connectivity fee is implemented? 60 days? 90 days? Some other period?

Under the Commission’s Rules of Practice, the “burden to demonstrate that a proposed rule change is consistent with the Exchange Act and the rules and regulations issued thereunder . . . is on the [SRO] that proposed the rule change.”<sup>63</sup> The description of a proposed rule change, its purpose and operation, its effect, and a legal analysis of its consistency with applicable requirements must all be sufficiently detailed and specific to support an affirmative Commission finding,<sup>64</sup> and any failure of an SRO to provide this information may result in the Commission not having a sufficient basis to make an affirmative finding that a proposed rule change is consistent with the Act and the applicable rules and regulations.<sup>65</sup> Moreover, “unquestioning reliance” on an SRO’s representations in a proposed rule change would not be sufficient to justify Commission approval of a proposed rule change.<sup>66</sup>

The Commission believes it is appropriate to institute proceedings to allow for additional consideration and comment on the issues raised herein, including as to whether the proposal is consistent with the Act, any potential comments or supplemental information provided by the Exchange, and any additional independent analysis by the Commission.

#### V. Commission’s Solicitation of Comments

The Commission requests written views, data, and arguments with respect to the concerns identified above as well as any other relevant concerns. In particular, the Commission invites the written views of interested persons concerning whether the proposal is consistent with Sections 6(b)(4), 6(b)(5), and 6(b)(8), or any other provision of the Act, or the rules and regulations

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<sup>63</sup> 17 CFR 201.700(b)(3).

<sup>64</sup> See id.

<sup>65</sup> See id.

<sup>66</sup> See Susquehanna Int’l Group, LLP v. Securities and Exchange Commission, 866 F.3d 442, 446-47 (D.C. Cir. 2017) (rejecting the Commission’s reliance on an SRO’s own determinations without sufficient evidence of the basis for such determinations).

thereunder. The Commission asks that commenters address the sufficiency and merit of the Exchange's statements in support of the proposal, in addition to any other comments they may wish to submit about the proposed rule change. Although there do not appear to be any issues relevant to approval or disapproval that would be facilitated by an oral presentation of views, data, and arguments, the Commission will consider, pursuant to Rule 19b-4, any request for an opportunity to make an oral presentation.<sup>67</sup>

Interested persons are invited to submit written data, views, and arguments regarding whether the proposal should be approved or disapproved by [insert date 21 days from publication in the Federal Register]. Any person who wishes to file a rebuttal to any other person's submission must file that rebuttal by [insert date 35 days from publication in the Federal Register].

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](mailto:rule-comments@sec.gov). Please include File No. SR-EMERALD-2022-13 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.

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<sup>67</sup> 15 U.S.C. 78s(b)(2). Section 19(b)(2) of the Act grants the Commission flexibility to determine what type of proceeding—either oral or notice and opportunity for written comments—is appropriate for consideration of a particular proposal by an SRO. See Securities Acts Amendments of 1975, Report of the Senate Committee on Banking, Housing and Urban Affairs to Accompany S. 249, S. Rep. No. 75, 94th Cong., 1st Sess. 30 (1975).

All submissions should refer to File Number SR-EMERALD-2022-13. 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-2022-13 and should be submitted on or before [insert date 21 days from publication in the Federal Register]. Rebuttal comments should be submitted by [insert date 35 days from publication in the Federal Register].

VI. Conclusion

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(3)(C) of the Act,<sup>68</sup> that File Number SR-EMERALD-2022-13 be, and hereby is, temporarily suspended. In addition, the Commission is instituting proceedings to determine whether the proposed rule change should be approved or disapproved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>69</sup>

J. Matthew DeLesDernier  
Assistant Secretary

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<sup>68</sup> 15 U.S.C. 78s(b)(3)(C).

<sup>69</sup> 17 CFR 200.30-3(a)(12), (57) and (58).