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Page 1 of \* 157

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
Form 19b-4

File No. \* SR 2024 - \* 41

Amendment No. (req. for Amendments \*)

Filing by MIAX Sapphire, LLC

Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial * <input checked="" type="checkbox"/>	Amendment * <input type="checkbox"/>	Withdrawal <input type="checkbox"/>	Section 19(b)(2) * <input type="checkbox"/>	Section 19(b)(3)(A) * <input checked="" type="checkbox"/>	Section 19(b)(3)(B) * <input type="checkbox"/>
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Pilot <input type="checkbox"/>	Extension of Time Period for Commission Action * <input type="checkbox"/>	Date Expires * <input type="text"/>
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Rule

<input type="checkbox"/> 19b-4(f)(1)	<input type="checkbox"/> 19b-4(f)(4)
<input checked="" type="checkbox"/> 19b-4(f)(2)	<input type="checkbox"/> 19b-4(f)(5)
<input type="checkbox"/> 19b-4(f)(3)	<input type="checkbox"/> 19b-4(f)(6)

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010  
Section 806(e)(1) \*

Section 806(e)(2) \*

Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934  
Section 3C(b)(2) \*

Exhibit 2 Sent As Paper Document

Exhibit 3 Sent As Paper Document

**Description**

Provide a brief description of the action (limit 250 characters, required when Initial is checked \*).

Amend Fee Schedule to Adopt Connectivity Fees

**Contact Information**

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name \* Greg Last Name \* Ziegler

Title \* Senior Counsel

E-mail \* gziegler@miaxglobal.com

Telephone \* (609) 897-1483 Fax

**Signature**

Pursuant to the requirements of the Securities Exchange of 1934, MIAX Sapphire, LLC has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

Date 12/06/2024

(Title \*)

By Gregory P. Ziegler

Senior Counsel

(Name \*)

NOTE: Clicking the signature block at right will initiate digitally signing the form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

*Gregory Ziegler* Date: 2024.12.06 09:44:40 -05'00'

Required fields are shown with yellow backgrounds and astericks.

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS website.

**Form 19b-4 Information \***

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SR-SAPPHIRE-2024-41 - 19b4 Conne

The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

**Exhibit 1 - Notice of Proposed Rule Change \***

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SR-SAPPHIRE-2024-41- Exhibit 1.doc

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

**Exhibit 1A - Notice of Proposed Rule Change, Security-Based Swap Submission, or Advanced Notice by Clearing Agencies \***

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

**Exhibit 2- Notices, Written Comments, Transcripts, Other Communications**

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Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit Sent As Paper Document

**Exhibit 3 - Form, Report, or Questionnaire**

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Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit Sent As Paper Document

**Exhibit 4 - Marked Copies**

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The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

**Exhibit 5 - Proposed Rule Text**

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SR-SAPPHIRE-2024-41 Exhibit 5.doc

The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change

**Partial Amendment**

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If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

## 1. **Text of the Proposed Rule Change**

(a) MIAX Sapphire, LLC (“MIAX Sapphire” or “Exchange”), pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act” or “Exchange Act”)<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> proposes to amend the MIAX Sapphire Options Exchange Fee Schedule (the “Fee Schedule”) to adopt connectivity and port fees.

A notice of the proposed rule change for publication in the Federal Register is attached hereto as Exhibit 1, and a copy of the applicable section of the proposed Fee Schedule is attached hereto as Exhibit 5.

(b) Inapplicable.

(c) Inapplicable.

## 2. **Procedures of the Self-Regulatory Organization**

The proposed rule change was approved by the Chief Executive Officer of the Exchange or his designee pursuant to authority delegated by the Exchange Board of Directors on July 23, 2024. Exchange staff will advise the Board of Directors of any action taken pursuant to delegated authority. No other action by the Exchange is necessary for the filing of the proposed rule change.

Questions and comments on the proposed rule change may be directed to Michael Slade, AVP, Associate Counsel, at (609) 955-0460.

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

### a. Purpose

On July 15, 2024, the U.S. Securities and Exchange Commission (“Commission”)

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

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

approved the Exchange's Form 1 application to register as a national securities exchange under Section 6 of the Exchange Act.<sup>3</sup> The Exchange commenced electronic operations on August 12, 2024.<sup>4</sup> The Exchange proposes to establish the following sections of the Fee Schedule, including proposed fee structures and amounts (the majority of which the Exchange proposes to waive for a specified time, as discussed further below): (1) connectivity fees for Members<sup>5</sup> and non-Members; and (2) certain port fees for Members and non-Members.<sup>6</sup> The Exchange initially filed this proposal on August 9, 2024 (SR-SAPPHIRE-2024-21). The Exchange withdrew SR-SAPPHIRE-2024-21 on August 14, 2024 and submitted SR-SAPPHIRE-2024-22. On October 10, 2024, the Exchange withdrew SR-SAPPHIRE-2024-22 and submitted SR-SAPPHIRE-2024-32. On December 6, 2024, the Exchange withdrew SR-SAPPHIRE-2024-32 and submitted this proposal.

### Connectivity Fees

The Exchange proposes to establish Section 5), System Connectivity Fees, which will describe network connectivity fees. The Exchange proposes to offer to both Members and non-Members the choice of a 1 Gigabit ("Gb") fiber connection or the 10Gb ultra-low latency ("ULL") fiber connection to the Exchange's primary and secondary facilities, as well as its

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<sup>3</sup> See Securities Exchange Act Release No. 100539 (July 15, 2024), 89 FR 58848 (July 19, 2024) (File No. 10-240) (the "Approval Order").

<sup>4</sup> See MIA X Sapphire News Alert, dated August 13, 2024, available at <https://www.miaxglobal.com/alert/2024/08/13/miami-international-holdings-announces-successful-launch-miax-sapphire?nav=all>.

<sup>5</sup> The term "Member" means an individual or organization that is registered with the Exchange pursuant to Chapter II of the Exchange's Rules for purposes of trading on the Exchange as an "Electronic Exchange Member" or "Market Maker." Members are deemed "members" under the Exchange Act. See Exchange Rule 100.

<sup>6</sup> The Exchange filed a separate rule filing to establish fees for Purge Ports. See SR-SAPPHIRE-2024-15. "Purge Ports" provide Market Makers with the ability to send quote purge messages to the MIA X Sapphire System. Purge Ports are not capable of sending or receiving any other type of messages or information. See the Definitions section of the Fee Schedule. Fees for all other types of ports are proposed in this filing.

disaster recovery facility. The 1Gb and 10Gb ULL fees will be charged to both Members and non-Members for connectivity to the Exchange's primary/secondary facility and to its disaster recovery facility.

The Exchange proposes to establish monthly fees of \$1,400 per 1Gb connection and \$13,500 per 10Gb ULL connection that will be assessed to Members and non-Members for connecting to the primary/secondary facility. The Exchange proposes to establish monthly fees of \$550 per 1Gb connection and \$2,750 per 10Gb ULL connection that will be assessed to Members and non-Members for connecting to the disaster recovery facility.

Monthly network connectivity fees for Members and non-Members for connectivity with the primary/secondary facility will be assessed in any month the Member or non-Member is credentialed to use any of the MIAX Sapphire Application Programming Interfaces ("APIs") or market data feeds in the production environment. Further, the Exchange proposes to pro-rate the monthly 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 Sapphire 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. Monthly network connectivity fees for Members and non-Members for connectivity to the disaster recovery facility will be assessed in each month during which the Member or non-Member has established connectivity to the disaster recovery facility.

The Exchange proposes that Members and non-Members utilizing the MENI<sup>7</sup> to connect

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<sup>7</sup> The term "MENI" means the MIAX Express Network Interconnect, which is a network infrastructure which provides Members and non-Members network connectivity to the MIAX Sapphire trading platform, market data systems, test systems, and disaster recovery facilities. When utilizing a shared 1Gb cross-connect, the MENI can also be configured to offer network connectivity to the trading platforms, market data systems,

to the trading platforms, market data systems, and disaster recovery facilities of the Exchange or its affiliated options markets (MIAX, MIAX Pearl, and MIAX Emerald)<sup>8</sup> via a single, shared 1Gb connection will only be assessed one monthly network connectivity fee per connection, regardless of the trading platforms, market data systems, and disaster recovery facilities accessed via such connection.

*Waiver Period for Connectivity Fees.* The Exchange proposes to waive the monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and the 10Gb ULL connections to the disaster recovery facility for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The proposed monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be discounted by 50% for the three full calendar months thereafter.

The Exchange proposes to waive the monthly Member and non-Member network connectivity fees for the first two 10Gb ULL connections on each switch<sup>9</sup> to the primary/secondary facility for the partial month in which the Exchange launches operations, plus

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test systems, and disaster recovery facilities of the Exchange's affiliates, MIAX, MIAX Pearl and MIAX Emerald. When utilizing a Dedicated cross-connect, the MENI can only be configured to offer network connectivity to the trading platforms, market data systems, and test systems of MIAX Sapphire. See the Definitions section of the Fee Schedule.

<sup>8</sup> The term "MIAX" means Miami International Securities Exchange, LLC. See Exchange Rule 100. The term "MIAX Pearl" means MIAX PEARL, LLC. All references to "MIAX Pearl" in this filing are to the options trading facility of MIAX PEARL, LLC. References to "MIAX Pearl Equities" are to the equities trading facility of MIAX PEARL, LLC. See MIAX Pearl Rule 1901. The term "MIAX Emerald" means MIAX Emerald, LLC. See Exchange Rule 100. MIAX, MIAX Pearl and MIAX Emerald are collectively referred to herein as the "affiliated markets."

<sup>9</sup> The network switches are the first layer of access to the trading platform that firms connect to before being able to access the Exchange's matching engines, each of which pertain to a certain list of underlying symbols. The Exchange notes that it is possible to reach each matching engine from a single switch.

an additional three full calendar months. The Exchange proposes that the monthly Member and non-Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be discounted by 50% for the three full calendar months thereafter. Any subsequent 10Gb ULL connections on each switch will be charged the full monthly rate of \$13,500 per 10Gb ULL connection.

For clarity, the Exchange provides the below examples regarding connectivity fees, utilizing the launch date of August 12, 2024:

- Members and non-Members that subscribe to the 1Gb connection to the primary/secondary facility and/or disaster recovery facility, and/or subscribe to the 10Gb ULL connection to the disaster recovery facility, will not be charged the proposed rates (i.e., \$1,400 for 1Gb connections to the primary/secondary facility, \$550 for 1Gb connections to the disaster recovery facility, or \$2,750 for 10Gb ULL connections to the disaster recovery facility) for the remaining days in August, as well as for the entire period covering the months of September 2024 through November 2024. Thereafter, Members and non-Members will receive a 50% discount for each 1Gb connection to the primary/secondary facility and disaster recovery facility, and for each 10Gb ULL connection to the disaster recovery facility for entire period covering December 2024 through February 2025.
- Members and non-Members that subscribe to the 10Gb ULL connection to the primary/secondary facility will not be charged the proposed rate (\$13,500) for the first two 10Gb ULL connections on each switch to the primary/secondary facility for the remaining days in August, as well as the entire period covering the months

of September through November 2024. Thereafter, Members and non-Members will receive a 50% discount for the first two 10Gb ULL connections on each switch to the primary/secondary facility for entire period covering December 2024 through February 2025. For each 10Gb ULL connection on each switch greater than two (i.e., three or more), Members and non-Members will be assessed the entire amount of the proposed rate beginning upon the launch of the Exchange.

The Exchange previously communicated to market participants that the Exchange intends to waive the monthly Member and non-Member network connectivity fees in the manner described above.<sup>10</sup> Even though the Exchange proposes to waive the Member and non-Member network connectivity fees for the periods of time described above, the Exchange believes that it is appropriate to provide market participants with the overall structure of the fees by outlining the structure and amounts in the Fee Schedule, so that there is general awareness that the Exchange intends to assess such fees in the future. The Exchange notes that its affiliated markets, MIAX, MIAX Pearl, and MIAX Emerald, provide for the same structure and amounts, absent the waiver and discount periods described above, for connectivity fees assessed to their Members and non-Members.<sup>11</sup>

#### Port Fees

The Exchange proposes to establish Section 5)d), Port Fees, which will provide the fee structure and amounts for the different types of ports offered by the Exchange, which are

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<sup>10</sup> See Fee Change Alert, MIAX Sapphire Options Exchange – Updated Summary of Proposed Non-Transaction Fees to Clarify Application of Production Connectivity Waiver Period, dated July 26, 2024, available at <https://www.miaxglobal.com/alert/2024/07/26/miax-sapphire-options-exchange-updated-summary-proposed-non-transaction>.

<sup>11</sup> See MIAX Fee Schedule, Sections 5)a)-b); MIAX Pearl Fee Schedule, Sections 5)a)-b); and MIAX Emerald Fee Schedule, Sections 5)a)-b).



described below.<sup>12</sup> MIAX Sapphire has primary and secondary data centers and a disaster recovery center. Each port provides access to all Exchange data centers for a single fee. The Exchange notes that, unless otherwise specifically set forth in the Fee Schedule, the port fees include the information communicated through the port. That is, unless otherwise specifically set forth in the Fee Schedule, there is no additional charge for the information that is communicated through the port apart from what the user is assessed for each port.

*Waiver Period.* The Exchange proposes to waive all port fees during the Initial Waiver Period.<sup>13</sup> Even though the Exchange proposes to fully waive all port fees during the Initial Waiver Period upon launching operations, the Exchange believes that is appropriate to provide market participants with the overall structure of the fees by outlining the structure and amounts in the Fee Schedule, so that there is general awareness that the Exchange intends to assess such fees upon the expiration of the defined period of the Initial Waiver Period.

*FIX Port Fees*<sup>14</sup>

The Exchange proposes to establish Section 5)d)i), FIX Port Fees, pursuant to which the Exchange will assess FIX Port fees to Members in each month the Member is credentialed to use a FIX Port in the production environment and based upon the number of credentialed FIX Ports. In particular, the Exchange proposes to assess Members the following monthly FIX Port fees: (i)

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<sup>12</sup> The Exchange notes that this filing includes proposed fees for FIX Ports, Full Service MEO Ports, Limited Service MEO Ports, Clearing Trade Drop Ports, and FIX Drop Copy Ports. The Exchange separately filed to establish fees for Purge Ports. See SR-SAPPHIRE-2024-26. The Exhibit 5 reflects the separate filing to establish fees for Purge Ports.

<sup>13</sup> The term “Initial Waiver Period” means, for each applicable fee, the period of time from the initial effective date of the MIAX Sapphire Fee Schedule plus an additional six (6) full calendar months after the completion of the partial month of the Exchange launch. See the Definitions Section of the Fee Schedule.

<sup>14</sup> The term “FIX Interface” means the Financial Information Exchange interface used for submitting certain order types (as set forth in Rule 516) to the MIAX Sapphire System. See Exchange Rule 100. The term “FIX Port” means a FIX port that allows Members to send orders and other messages using the FIX protocol. See the Definitions section of the Fee Schedule.

\$275 for the 1<sup>st</sup> FIX Port; (ii) \$175 per port for the 2<sup>nd</sup> through 5<sup>th</sup> FIX Ports; and (iii) \$75 per port for the 6<sup>th</sup> FIX Port and each additional FIX Port. FIX Port fees will be waived during the Initial Waiver Period.

*MEO Port Fees*<sup>15</sup>

The Exchange proposes to establish Section 5)d)ii), MEO Port Fees, pursuant to which the Exchange will assess MEO Port fees based upon the different types of MEO Ports offered by the Exchange. MIAX Sapphire offers different types of MEO Ports depending on the services required by Members.

The Exchange proposes to assess monthly Full Service MEO Port<sup>16</sup> fees to Market Makers<sup>17</sup> based upon the number of classes or class volume accessed by the Market Maker. MIAX Sapphire will assess monthly Full Service MEO Port fees to Market Makers in each month the Market Maker has been credentialed to use the Full Service MEO Port in the production environment and has registered to quote in at least one class.

Specifically, the Exchange proposes to establish the following monthly Full Service MEO Port fees: (i) \$2,500 for Market Maker registrations in up to 10 option classes or up to 20% of option classes by volume; (ii) \$3,750 for Market Maker registrations in up to 40 option classes or up to 35% of option classes by volume; (iii) \$5,000 for Market Maker registrations in up to 100 option classes or up to 50% of option classes by volume; and (iv) \$6,000 for Market Maker

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<sup>15</sup> The term “MEO Interface” or “MEO” means a binary order interface for certain order types as set forth in Rule 516 into the MIAX Sapphire System. See Exchange Rule 100 and the Definitions section of the Fee Schedule.

<sup>16</sup> The term “Full Service MEO Port” means an MEO port that supports all MEO input message types and binary bulk order entry. See the Definitions section of the Fee Schedule.

<sup>17</sup> The term “Market Maker” or “MM” means a Member registered with the Exchange for the purpose of making markets in options contracts traded on the Exchange and that is vested with the rights and responsibilities specified in Chapter VI of the Exchange’s Rules. See Exchange Rule 100.

registrations in over 100 option classes or over 50% of option classes by volume up to all option classes listed on MIAX Sapphire.

The Exchange also proposes to adopt footnote “b.” for its Full Service MEO Port fees that will apply to the Market Makers who fall within the following Full Service MEO Port fee levels, which represent the 3<sup>rd</sup> and 4<sup>th</sup> levels of the fee table: Market Makers who have (i) registrations in up to 100 option classes or up to 50% of option classes by volume, and (ii) registrations in over 100 option classes or over 50% of option classes by volume up to all option classes listed on MIAX Sapphire. The Exchange proposes that for these monthly Full Service MEO Port tier levels, if the Market Maker’s total monthly executed volume during the relevant month is less than 0.015% of the total monthly executed volume reported by OCC in the Market Maker account type for MIAX Sapphire-listed option classes for that month, then the fee will be \$4,000 instead of the fee otherwise applicable to such level (i.e., \$5,000 or \$6,000).

The purpose of this proposed lower monthly Full Service MEO Port fee is to provide a lower fixed cost to those Market Makers who quote the entire Exchange market (or substantial amount of the Exchange market), as objectively measured by either number of classes assigned or national average daily volume (“ADV”), but who do not otherwise execute a significant amount of volume on the Exchange. The Exchange believes that, by offering lower fixed costs to Market Makers that execute less volume, the Exchange will retain and attract smaller-scale Market Makers, which are an integral component of the option industry marketplace, but have been decreasing in number in recent years, due to industry consolidation and lower market maker profitability. Since these smaller-scale Market Makers utilize less Exchange capacity due to lower overall volume executed, the Exchange believes it is reasonable and appropriate to offer such Market Makers a lower fixed cost. The Exchange notes that its affiliated markets, MIAX,

MIAX Pearl, and MIAX Emerald, offer a similar reduced fee for their full service MEO/MEI ports for smaller-scale Market Makers.<sup>18</sup> Accordingly, this concept is not novel.

For the calculation of the monthly Full Service MEO Port fees, the applicable fee rate is the lesser of either the per class basis or percentage of total national ADV measurement. The amount of the monthly Full Service MEO Port fee will be based upon the number of classes in which the Market Maker was registered to quote on any given day within the calendar month, or upon the class volume percentages set forth in the table in Section 5)d)ii) of the Fee Schedule. A Market Maker is determined to be registered in a class if that Market Maker has been registered in one or more series in that class.<sup>19</sup> The Exchange will assess MIAX Sapphire Market Makers the monthly Full Service MEO Port fee based on the greatest number of classes listed on MIAX Sapphire that the MIAX Sapphire Market Maker registered to quote in on any given day within a calendar month. The class volume percentage is based on the total national average daily volume in classes listed on MIAX Sapphire in the prior calendar quarter. Newly listed option classes are excluded from the calculation of the monthly Full Service MEO Port fee until the calendar quarter following their listing, at which time the newly listed option classes will be included in both the per class count and the percentage of total national average daily volume.

MEO Port users will be allocated two (2) Full Service MEO Ports and four (4) Limited Service MEO Ports per Matching Engine<sup>20</sup> to which they connect. MEO Port fees include MEO

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<sup>18</sup> See MIAX Fee Schedule, Section 5)d)ii), note “\*”; MIAX Pearl Fee Schedule, Section 5)d), page 20, note “\*”; and MIAX Emerald Fee Schedule, Section 5)d)ii), note ■.

<sup>19</sup> See, generally, Chapter VI of the Exchange’s Rules.

<sup>20</sup> A “Matching Engine” is a part of the MIAX Sapphire electronic system that processes options orders and trades on a symbol-by-symbol basis. Some Matching Engines will process option classes with multiple root symbols, and other Matching Engines may be dedicated to one single option root symbol (for example, options on SPY may be processed by one single Matching Engine that is dedicated only to SPY). A particular root symbol may only be assigned to a single designated Matching Engine. A particular root symbol may not be assigned to multiple Matching Engines. See the Definitions section of the Fee Schedule.

Ports at the primary, secondary and disaster recovery data centers. Market Makers may request additional Limited Service MEO Ports for which MIAX Sapphire proposes to assess Market Makers \$250 per month per additional Limited Service MEO Port for each Matching Engine in excess of the four (4) Limited Service MEO Ports described above.

Full Service MEO Port fees and Limited Service MEO Port fees will be waived during the Initial Waiver Period.

#### *Clearing Trade Drop Port Fees*<sup>21</sup>

The Exchange proposes to establish Section 5)d)iv), Clearing Trade Drop Port Fees. The Exchange proposes to assess a CTD Port fee of \$450 per month. This fixed fee structure and amount is the same as the CTD Port fee in place at the Exchange's affiliate, MIAX Emerald.<sup>22</sup> CTD Port fees will be waived during the Initial Waiver Period.

#### *FIX Drop Copy Port Fees*<sup>23</sup>

The Exchange proposes to establish Section 5)d)v), Fix Drop Copy Port Fees. The Exchange proposes to assess an FXD Port fee of \$250 per month. This fixed fee structure is the same as the FXD Port fee structure in place at the Exchange's affiliate, MIAX Emerald, and is

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<sup>21</sup> A "CTD Port" or "Clearing Trade Drop Port" provides an Exchange Member with a real-time clearing trade updates. The updates include the Member's clearing trade messages on a low latency, real-time basis. The trade messages are routed to a Member's connection containing certain information. The information includes, among other things, the following: (i) trade date and time; (ii) symbol information; (iii) trade price/size information; (iv) Member type (for example, and without limitation, Market Maker, Electronic Exchange Member, Broker-Dealer); and (v) Exchange MPID for each side of the transaction, including Clearing Member MPID. See the Definitions section of the Fee Schedule. The term "Electronic Exchange Member" or "EEM" means the holder of a Trading Permit who is a Member representing as agent Public Customer Orders or Non-Customer Orders on the Exchange and those non-Market Maker Members conducting proprietary trading. Electronic Exchange Members are deemed "members" under the Exchange Act. See Exchange Rule 100.

<sup>22</sup> See MIAX Emerald Fee Schedule, Section 5)d)iii).

<sup>23</sup> The term "FXD" or "FIX Drop Copy Port" means a messaging interface that provides a copy of real-time trade execution, trade correction and trade cancellation information to FIX Drop Copy Port users who subscribe to the service. FXD Port users are those users who are designated by an EEM to receive the information and the information is restricted for use by the EEM only. See the Definitions section of the Fee Schedule.

half the price of the FXD Port fee for MIAX Emerald.<sup>24</sup> FXD Port fees will be waived during the Initial Waiver Period.

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As described more fully below, the Exchange provides a cost analysis to supports its proposed connectivity and port fees that includes, among other things, descriptions of how the Exchange allocated costs among it and its affiliated markets (MIAX, MIAX Pearl, and MIAX Emerald) to ensure no cost was allocated more than once, as well as additional detail supporting its cost allocation processes. The Exchange proposes connectivity and port fees that are intended to cover the Exchange's cost of providing connectivity and ports, with a reasonable mark-up over those costs.

b. Statutory Basis

The Exchange believes that the proposed fees are consistent with Section 6(b) of the Act<sup>25</sup> in general, and furthers the objectives of Section 6(b)(4) of the Act<sup>26</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 which the Exchange operates or controls. The Exchange also believes the proposed fees further the objectives of Section 6(b)(5) of the Act<sup>27</sup> in that they are designed to promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and 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.

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<sup>24</sup> See MIAX Emerald Fee Schedule, Section 5)d)iv).

<sup>25</sup> 15 U.S.C. 78f(b).

<sup>26</sup> 15 U.S.C. 78f(b)(4).

<sup>27</sup> 15 U.S.C. 78f(b)(5).

### Cost Analysis

In general, 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 Exchange Act requirements that fees be reasonable, equitably allocated, not unfairly discriminatory, and not create an undue burden on competition among members and markets. In particular, the Exchange believes that each exchange should take extra care to be able to demonstrate that these fees are based on its costs and reasonable business needs.

In proposing to charge fees for connectivity and port services, the Exchange is especially diligent in assessing those fees in a transparent way against its own aggregate costs of providing the related service, and in carefully and transparently assessing the impact on Members – both generally and in relation to other Members, i.e., to assure the fee will not create a financial burden on any participant and will not have an undue impact in particular on smaller Members and competition among Members in general. The Exchange believes that this level of diligence and transparency is called for by the requirements of Section 19(b)(1) under the Act,<sup>28</sup> and Rule 19b-4 thereunder,<sup>29</sup> with respect to the types of information exchanges should provide when filing fee changes, and Section 6(b) of the Act,<sup>30</sup> which requires, among other things, that exchange fees be reasonable and equitably allocated,<sup>31</sup> not designed to permit unfair discrimination,<sup>32</sup> and that they not impose a burden on competition not necessary or appropriate in furtherance of the purposes of the Act.<sup>33</sup> This rule change proposal addresses those

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<sup>28</sup> 15 U.S.C. 78s(b)(1).

<sup>29</sup> 17 CFR 240.19b-4.

<sup>30</sup> 15 U.S.C. 78f(b).

<sup>31</sup> 15 U.S.C. 78f(b)(4).

<sup>32</sup> 15 U.S.C. 78f(b)(5).

<sup>33</sup> 15 U.S.C. 78f(b)(8).

requirements, and the analysis and data in each of the sections that follow are designed to clearly and comprehensively show how they are met.<sup>34</sup>

As detailed below, the Exchange recently calculated its aggregate annual costs (and approximations for monthly costs) for providing 1Gb and 10Gb ULL connectivity, Full Service MEO Ports, Limited Service MEO Ports, FIX Ports, CTD Ports, and FXD Ports. For physical 1Gb and 10Gb ULL connectivity combined, the Exchange calculated its aggregate annual cost to equal \$6,620,300 (or approximately \$551,692 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months). For the various port services, the Exchange calculated the following annual costs: \$605,907 for Full Service MEO Ports (or approximately \$50,491 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); \$600,608 for Limited Service MEO Ports (or approximately \$50,050 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); \$158,148 for FIX Ports (or approximately \$13,178 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); \$109,908 for CTD Ports (or approximately \$9,158 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); and \$36,637 for FXD Ports (or approximately \$3,054 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months). In order to cover the aggregate costs of providing connectivity and ports to its users (both Members and non-Members<sup>35</sup>) going forward and to make a modest profit for connectivity services, as described below, the Exchange proposes to

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<sup>34</sup> See supra note 31.

<sup>35</sup> Types of market participants that obtain connectivity services from the Exchange but are not Members include service bureaus and extranets. Service bureaus offer technology-based services to other companies for a fee, including order entry services, and thus, may access ports on behalf of one or more Members. Extranets offer physical connectivity services to Members and non-Members.



modify its Fee Schedule to establish the connectivity and port fees described above, subject to certain fee waiver periods. The Exchange does not anticipate that it will make an overall profit on the various port services following the expiration of the Initial Waiver Period, on an annual basis, based on projected subscriber data.

The Exchange's affiliates previously completed a study of their aggregate costs to provide connectivity and port services and produce market data, defined above as its Cost Analysis.<sup>36</sup> Personnel began to plan for and develop the Exchange beginning in early 2023, and costs included in this Cost Analysis are related to the development and buildout of the Exchange since that time. During the Exchange's development and buildout that occurred throughout 2023 and continues to today, the Exchange routinely studied its aggregate costs to provide connectivity and port services, which were used to determine the proposed pricing for the provisions of connectivity and port services that are part of the Exchange's Cost Analysis. The Cost Analysis required a detailed analysis of the Exchange's aggregate baseline costs, including a determination and allocation of costs for core services provided by the Exchange – transaction execution, market data, membership services, physical connectivity, and port access (which provide order entry, cancellation and modification functionality, risk functionality, the ability to receive drop copies, and other functionality). The Exchange separately divided its costs between those costs necessary to deliver each of these core services, including infrastructure, software, human resources (i.e., personnel), and certain general and administrative expenses (“cost drivers”).

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<sup>36</sup> See Securities Exchange Act Release Nos. 100041 (April 26, 2024), 89 FR 35868 (May 2, 2024) (SR-MIAX-2024-25); 100319 (June 12, 2024), 89 FR 51562 (June 18, 2024) (SR-PEARL-2024-25); 100042 (April 26, 2024), 89 FR 35879 (May 2, 2024) (SR-EMERALD-2024-15). The Exchange frequently updates its Cost Analysis as strategic initiatives change, costs increase or decrease, and market participant needs and trading activity (once live trading begins) changes. The Exchange's most recent Cost Analysis was conducted ahead of this filing.

As an initial step, the Exchange determined the total cost for the Exchange and the affiliated markets for each cost driver as part of its 2024 budget review process. The 2024 budget review is a company-wide process that occurs over the course of many months, includes meetings among senior management, department heads, and the Finance Team. Each department head is required to send a “bottom up” budget to the Finance Team allocating costs at the profit and loss account and vendor levels for the Exchange and its affiliated markets based on a number of factors, including server counts, additional hardware and software utilization, current or anticipated functional or non-functional development projects, capacity needs, end-of-life or end-of-service intervals, number of members, market model (e.g., price time or pro-rata, simple only or simple and complex markets, auction functionality, etc.), which may impact message traffic, individual system architectures that impact platform size,<sup>37</sup> storage needs, dedicated infrastructure versus shared infrastructure allocated per platform based on the resources required to support each platform, number of available connections, and employees allocated time. For the 2024 budget process for MIAX Sapphire, only costs and anticipated revenues associated with the electronic exchange were considered. While MIAX Sapphire plans on opening its trading floor in 2025 costs and anticipated revenues from the trading floor were not included as part of any analysis for MIAX Sapphire for 2024.<sup>38</sup>All of these factors result in different allocation percentages among the Exchange and its affiliated markets, i.e., the different percentages of the overall cost driver allocated to the Exchange and its affiliated markets will cause the dollar amount of the overall cost allocated among the Exchange and its affiliated

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<sup>37</sup> For example, MIAX Sapphire maintains 8 matching engines, MIAX Emerald maintains 12 matching engines, MIAX Pearl Options maintains 12 matching engines, MIAX Pearl Equities maintains 24 matching engines, and MIAX maintains 24 matching engines.

<sup>38</sup> Additionally, while MIAX Sapphire received approval as a national securities exchange on July 15, 2024, start-up costs associated with the launch of MIAX Sapphire were not included in the costs used for the 2024 electronic exchange projections.

markets to also differ. Because the Exchange's parent company currently owns and operates four separate and distinct marketplaces, the Exchange must determine the costs associated with each actual market – as opposed to the Exchange's parent company simply concluding that all cost drivers are the same at each individual marketplace and dividing total cost by five (5) (evenly for each marketplace). Rather, the Exchange's parent company determines an accurate cost for each marketplace, which results in different allocations and amounts across exchanges for the same cost drivers, due to the unique factors of each marketplace as described above. This allocation methodology also ensures that no cost would be allocated twice or double-counted between the Exchange and its affiliated markets. The Finance Team then consolidates the budget and sends it to senior management, including the Chief Financial Officer and Chief Executive Officer, for review and approval. Next, the budget is presented to the Board of Directors and the Finance and Audit Committees for each exchange for their approval. The above steps encompass the first step of the cost allocation process.

The next step involves determining what portion of the cost allocated to the Exchange pursuant to the above methodology is to be allocated to each core service, e.g., connectivity and ports, market data, and transaction services. The Exchange and its affiliated markets adopted an allocation methodology with thoughtful and consistently applied principles to guide how much of a particular cost amount allocated to the Exchange should be allocated within the Exchange to each core service. This is the final step in the cost allocation process and is applied to each of the cost drivers set forth below. For instance, fixed costs that are not driven by client activity (e.g., message rates), such as data center costs, were allocated more heavily to the provision of 10Gb ULL physical connectivity (57.7% of total expense amount allocated to 10Gb ULL connectivity), with smaller allocations to Full Service MEO Ports (1.6%) and Limited Service

MEO Ports (1.6%), and the remainder to the provision of other connectivity, other ports, transaction execution, membership services and market data services (39.1%). This next level of the allocation methodology at the individual exchange level also took into account factors similar to those set forth under the first step of the allocation methodology process described above, to determine the appropriate allocation to connectivity or market data versus allocations for other services. This allocation methodology was developed through an assessment of costs with senior management intimately familiar with each area of the Exchange's operations. After adopting this allocation methodology, the Exchange then applied an allocation of each cost driver to each core service, resulting in the cost allocations described below. Each of the below cost allocations is unique to the Exchange and represents a percentage of overall cost that was allocated to the Exchange pursuant to the initial allocation described above.

By allocating segmented costs to each core service, the Exchange was able to estimate by core service the potential margin it might earn based on different fee models. The Exchange notes that as a non-listing venue it has five primary sources of revenue that it can potentially use to fund its operations: transaction fees, fees for connectivity and port services, membership fees, regulatory fees, and market data fees. Accordingly, the Exchange must cover its expenses from these five primary sources of revenue. The Exchange also notes that as a general matter each of these sources of revenue is based on services that are interdependent. For instance, the Exchange's system for executing transactions is dependent on physical hardware and connectivity; only Members and parties that they sponsor to participate directly on the Exchange may submit orders to the Exchange; many Members (but not all) consume market data from the Exchange in order to trade on the Exchange; and the Exchange consumes market data from external sources in order to comply with regulatory obligations. Accordingly, given this

interdependence, the allocation of costs to each service or revenue source required judgment of the Exchange and was weighted based on estimates of the Exchange that the Exchange believes are reasonable, as set forth below. While there is no standardized and generally accepted methodology for the allocation of an exchange's costs, the Exchange's methodology is the result of an extensive review and analysis and will be consistently applied going forward for any other potential fee proposals. In the absence of the Commission attempting to specify a methodology for the allocation of exchanges' interdependent costs, the Exchange will continue to be left with its best efforts to attempt to conduct such an allocation in a thoughtful and reasonable manner.

Through the Exchange's extensive updated Cost Analysis, which was again recently further refined, the Exchange analyzed every expense item in the Exchange's general expense ledger to determine whether each such expense relates to the provision of connectivity and port services, and, if such expense did so relate, what portion (or percentage) of such expense actually supports the provision of connectivity and port services, and thus bears a relationship that is, "in nature and closeness," directly related to network connectivity and port services. In turn, the Exchange allocated certain costs more to physical connectivity and others to ports, while certain costs were only allocated to such services at a very low percentage or not at all, using consistent allocation methodologies as described above. Based on this analysis, the Exchange estimates that the aggregate monthly costs for connectivity and ports are as follows: \$532,820 for 10Gb ULL connectivity; \$18,872 for 1Gb connectivity; \$50,491 for Full Service MEO Ports; \$50,050 for Limited Service MEO Ports; \$13,178 for FIX Ports; \$9,158 for CTD Ports; and \$3,054 for FXD Ports (all calculations utilized the number rounded to the nearest dollar when dividing the annual cost for each type of connectivity or port by 12 months), as further detailed below.

***Costs Related to Offering Physical 1Gb and 10Gb ULL Connectivity***

The following charts detail the individual line-item costs considered by the Exchange to be related to offering physical dedicated 1Gb and 10Gb ULL connectivity as well as the percentage of the Exchange's overall costs that such costs represent for each cost driver (e.g., as set forth below, the Exchange allocated approximately 1.2% of its overall Human Resources cost to offering 1Gb connectivity and 34.5% to offering 10Gb ULL physical connectivity).

<b>1Gb Connectivity</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$125,167	\$10,431	1.2%
Connectivity (external fees, cabling, switches, etc.)	\$522	\$44	2.0%
Internet Services and External Market Data	\$3,675	\$306	2.5%
Data Center	\$12,571	\$1,048	2.0%
Hardware and Software Maintenance and Licenses	\$9,826	\$819	2.0%
Depreciation	\$27,679	\$2,307	2.3%
Allocated Shared Expenses	\$47,021	\$3,918	1.7%
<b>TOTAL</b>	<b>\$226,461</b>	<b>\$18,872</b>	<b>1.5%</b>
a. The Annual Cost includes figures rounded to the nearest dollar.			
b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

<b>10Gb ULL Connectivity</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$3,533,950	\$294,496	34.5%
Connectivity (external fees, cabling, switches, etc.)	\$14,741	\$1,228	57.7%
Internet Services and External Market Data	\$103,750	\$8,646	69.8%
Data Center	\$354,917	\$29,576	57.7%
Hardware and Software Maintenance and Licenses	\$277,415	\$23,118	55.9%
Depreciation	\$781,473	\$65,123	63.6%
Allocated Shared Expenses	\$1,327,593	\$110,633	47%
<b>TOTAL</b>	<b>\$6,393,839</b>	<b>\$532,820</b>	<b>41.1%</b>
a. The Annual Cost includes figures rounded to the nearest dollar.			
b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering physical 1Gb and 10Gb ULL connectivity.

### ***Human Resources***

The Exchange notes that it and its affiliated markets anticipate that by year-end 2024, there will be 289 employees (excluding employees at non-options/equities exchange subsidiaries of Miami International Holdings, Inc. (“MIH”), the holding company of the Exchange and its affiliated markets), and each department leader has direct knowledge of the time spent by each employee with respect to the various tasks necessary to operate the Exchange. Specifically, twice a year, and as needed with additional new hires and new project initiatives, in consultation with employees as needed, managers and department heads assign a percentage of time to every employee and then allocate that time amongst the Exchange and its affiliated markets to determine each market’s individual Human Resources expense. Then, managers and department heads assign a percentage of each employee’s time allocated to the Exchange into buckets including network connectivity, ports, market data, and other exchange services. This process ensures that every employee is 100% allocated, ensuring there is no double counting between the Exchange and its affiliated markets.

For personnel costs (Human Resources), the Exchange calculated an allocation of employee time for employees whose functions include providing and maintaining physical connectivity and performance thereof (primarily the Exchange’s network infrastructure team, which spends most of their time performing functions necessary to provide physical connectivity). As described more fully above, the Exchange’s parent company allocates costs to the Exchange and its affiliated markets and then a portion of the Human Resources costs allocated to the Exchange is then allocated to connectivity. From that portion allocated to the

Exchange that applied to connectivity, the Exchange then allocated weighted averages of 49.1% for 10Gb ULL connectivity and 1.7% for 1Gb connectivity of each employee's time from the above group.

The Exchange also allocated Human Resources costs to provide physical connectivity to a limited subset of personnel with ancillary functions related to establishing and maintaining such connectivity (such as information security, sales, membership, and finance personnel). The Exchange allocated cost on an employee-by-employee basis (i.e., only including those personnel who support functions related to providing physical connectivity) and then applied a smaller allocation to such employees' time to 10Gb ULL connectivity (18.4%) and a smaller allocation to 1Gb connectivity (0.6%). This other group of personnel with a smaller allocation of Human Resources costs also have a direct nexus to 10Gb ULL connectivity, whether it is a sales person selling a connection, finance personnel billing for connectivity or providing budget analysis, or information security ensuring that such connectivity is secure and adequately defended from an outside intrusion.

The estimates of Human Resources cost were therefore determined by consulting with such department leaders, determining which employees are involved in tasks related to providing physical connectivity, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of time such employees devote to those tasks. This includes personnel from the Exchange departments that are predominately involved in providing 1Gb and 10Gb ULL connectivity: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. Again, the Exchange allocated 49.1% for 10Gb ULL connectivity and 1.7% for 1Gb connectivity of each of their employee's time assigned to



the Exchange for 10Gb ULL and 1Gb connectivity, as stated above. Employees from these departments perform numerous functions to support 10Gb ULL connectivity, such as the installation, re-location, configuration, and maintenance of 10Gb ULL connections and the hardware they access. This hardware includes servers, routers, switches, firewalls, and monitoring devices. These employees also perform software upgrades, vulnerability assessments, remediation and patch installs, equipment configuration and hardening, as well as performance and capacity management. These employees also engage in research and development analysis for equipment and software supporting 10Gb ULL connectivity and design, and support the development and on-going maintenance of internally-developed applications as well as data capture and analysis, and Member and internal Exchange reports related to network and system performance. The above list of employee functions is not exhaustive of all the functions performed by Exchange employees to support 10Gb ULL and 1Gb connectivity, but illustrates the breadth of functions those employees perform in support of the above cost and time allocations.

Lastly, the Exchange notes that senior level executives' time was only allocated to the 10Gb ULL and 1Gb connectivity related Human Resources costs to the extent that they are involved in overseeing tasks related to providing physical connectivity. The Human Resources cost was calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost driver includes external fees paid to connect to other exchanges and third parties, cabling and switches required to operate the Exchange. The Connectivity cost driver is more narrowly focused on technology used to complete connections to the Exchange

and to connect to external markets. The Exchange notes that its connectivity to external markets is required in order to receive market data to run the Exchange's matching engine and basic operations compliant with existing regulations, primarily Regulation NMS.

The Exchange relies on various connectivity providers for connectivity to the entire U.S. options industry, 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 1Gb and 10Gb ULL connectivity. Specifically, the Exchange utilizes connectivity providers to connect to other national securities exchanges and the Options Price Reporting Authority ("OPRA"). The Exchange understands that these service providers provide services to most, if not all, of the other U.S. exchanges and other market participants. Connectivity provided by these service providers is critical to the Exchanges daily operations and performance of its System Networks to which market participants connect to via 1Gb and 10Gb ULL connectivity. Without these services 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 connectivity provider expense and recoups that expense, in part, by charging for 1Gb and 10Gb ULL connectivity.

#### ***Internet Services and External Market Data***

The next cost driver consists of Internet Services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton, New Jersey and Miami, Florida.

External market data includes fees paid to third parties, including other exchanges, to

receive market data. The Exchange includes external market data fee costs towards the provisions of physical connectivity because such market data is necessary for certain services related to connectivity, including pre-trade risk checks and checks for other conditions (e.g., repricing of orders to avoid locked or crossed markets and trading collars). Since external market data from other exchanges is consumed at the Exchange's matching engine level, (to which physical connectivity provides access) in order to validate orders before additional orders enter the matching engine or are executed, the Exchange believes it is reasonable to allocate an amount of such costs to 1Gb and 10Gb ULL connectivity.

The Exchange relies on various content service providers for data feeds for the entire U.S. options industry, as well as content for critical components of the network that are necessary to provide and maintain its System Networks and access to its System Networks via 1Gb and 10Gb ULL connectivity. Specifically, the Exchange utilizes content service providers to receive market data from OPRA, other exchanges and market data providers. The Exchange understands that these service providers provide services to most, if not all, of the other U.S. exchanges and other market participants. Market data provided by these service providers is critical to the Exchange's daily operations and performance of its System Networks to which market participants connect to via 1Gb and 10Gb ULL connectivity. Without these services providers, the Exchange would not be able to receive market data and, therefore, would not be able to operate and support its System Networks. The Exchange does not employ a separate fee to cover its content service provider expense and recoups that expense, in part, by charging for 1Gb and 10Gb ULL connectivity.

### ***Data Center***

Data Center costs includes an allocation of the costs the Exchange incurs to provide

physical connectivity in the third-party data centers where it maintains its equipment (such as dedicated space, security services, cooling and power). The Exchange notes that it does not own the primary data center or the secondary data center, but instead, leases space in data centers operated by third parties. The Exchange has allocated a high percentage of the total Data Center cost to physical 1Gb and 10Gb ULL connectivity (59.7% combined) because the third-party data centers and the Exchange's physical equipment contained therein is the most direct cost in providing physical access to the Exchange. In other words, for the Exchange to operate in a dedicated space with connectivity by market participants to a physical trading platform, the data centers are a very tangible cost, and in turn, if the Exchange did not maintain such a presence then physical connectivity would be of no value to market participants.

#### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to operate and monitor physical assets necessary to offer physical connectivity to the Exchange. This software is necessary for the Exchange to operate its options trading platform in order to maintain premium network performance. This hardware includes servers, network switches, cables, optics, protocol data units, and cabinets, to maintain a state-of-the-art technology platform. Accordingly, the Exchange allocated a high percentage of the total Hardware and Software Maintenance and License cost to physical 1Gb and 10Gb ULL connectivity (57.9% combined) because the hardware and software licenses are the most direct cost in providing physical access to the Exchange's platform.

#### ***Depreciation***

All physical assets, software, and hardware used to provide 1Gb and 10Gb ULL connectivity, which also includes assets used for testing and monitoring of Exchange

infrastructure, were valued at cost, and depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which are owned by the Exchange and some of which are leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange also included in the Depreciation cost driver certain budgeted improvements that the Exchange intends to capitalize and depreciate with respect to 1Gb and 10Gb ULL connectivity in the near-term. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost was therefore narrowly tailored to depreciation related to 1Gb and 10Gb ULL connectivity. As noted above, the Exchange allocated 63.6% of its allocated depreciation costs to providing physical 10Gb ULL connectivity and 2.3% of all depreciation costs to providing 1Gb connectivity.

#### *Allocated Shared Expenses*

Finally, as with other exchange products and services, a portion of general shared expenses was allocated to overall physical connectivity costs. These general shared costs are integral to exchange operations, including its ability to provide physical connectivity. Costs included in general shared expenses include office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications. Similarly, the cost of paying directors to serve on the Exchange's Board of Directors is also included in the Exchange's general shared expense cost driver.<sup>39</sup> These general shared expenses are incurred by the Exchange's parent company, MIH,

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<sup>39</sup> The Exchange notes that MEMX allocated a precise amount of 10% of the overall cost for directors to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26). The Exchange does not calculate its expenses at that granular a level. Instead, director costs are included as part of the overall general allocation.

as a direct result of operating the Exchange and its affiliated markets.

The Exchange employed a process to determine a reasonable percentage to allocate general shared expenses to 1Gb and 10Gb ULL connectivity pursuant to its multi-layered allocation process. First, general expenses were allocated among the Exchange and affiliated markets as described above. Then, the general shared expense assigned to the Exchange was allocated across core services of the Exchange, including connectivity. Then, these costs were further allocated to sub-categories within the final categories, i.e., 1Gb and 10Gb ULL connectivity as sub-categories of connectivity. In determining the percentage of general shared expenses allocated to connectivity that ultimately apply to 1Gb and 10Gb ULL connectivity, the Exchange looked at the percentage allocations of each of the cost drivers and determined a reasonable allocation percentage. The Exchange also held meetings with senior management, department heads, and the Finance Team to determine the proper amount of the shared general expense to allocate to 1Gb and 10Gb ULL connectivity. The Exchange, therefore, believes it is reasonable to assign allocations, in the range of allocations for other cost drivers, while continuing to ensure that these expenses are only allocated once. Again, the general shared expenses are incurred by the Exchange's parent company as a result of operating the Exchange and its affiliated markets and it is therefore reasonable to allocate a percentage of those expenses to the Exchange and ultimately to specific product offerings such as 1Gb and 10Gb ULL connectivity.

Again, a portion of all shared expenses were allocated to the Exchange (and its affiliated markets) which, in turn, allocated a portion of that overall allocation to all physical connectivity on the Exchange. The Exchange then allocated 47% of the portion allocated to physical connectivity to 10Gb ULL connectivity and 1.7% of the portion allocated to physical

connectivity to 1Gb connectivity. The Exchange believes these allocation percentages are reasonable because, while the overall dollar amounts may be higher than other cost drivers, the percentages are based on and in line with the percentage allocations of each of the Exchange's other cost drivers for each provision of connectivity. The percentage allocated to 10Gb ULL connectivity also reflects its importance to the Exchange's strategy and necessity towards the nature of the Exchange's overall operations, which is to provide a resilient, highly deterministic trading system that relies on faster 10Gb ULL connectivity than the Exchange's competitors to maintain premium performance. This allocation reflects the Exchange's focus on providing and maintaining high performance network connectivity, of which 10Gb ULL connectivity is a main contributor. The Exchange intends to differentiate itself by offering a "premium-product" network experience, as an operator of a high performance, ultra-low latency network with unparalleled system throughput, which system networks can support access to four distinct options markets and multiple competing market makers having affirmative obligations to continuously quote over 1,100,000 distinct trading products (per exchange), and the capacity to handle approximately 8 million quote messages per second. The "premium-product" network experience enables users of 10Gb ULL connections to receive the network monitoring and reporting services for those approximately 1,100,000 distinct trading products. These value add services are part of the Exchange's strategy for offering a high performance trading system, which utilizes 10Gb ULL connectivity.

The Exchange notes that the 47% allocation of general shared expenses for physical 10Gb ULL connectivity is higher than that allocated to general shared expenses for all other types of connectivity and ports. This is based on its allocation methodology that weighted costs attributable to each core service. While physical connectivity has several areas where certain

tangible costs are heavily weighted towards providing such service (e.g., Data Center, as described above), other types of connectivity and ports do not require as many broad or indirect resources as other core services.

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***Approximate Cost Per 1Gb and 10Gb ULL Connection Per Month***

The Exchange divided the total monthly cost for 10Gb ULL connectivity of \$532,820 by the number of physical 10Gb ULL connections the Exchange anticipates maintaining upon expiration of the full length of the waiver period for 10Gb ULL connections at the time the proposed pricing was determined (40), to arrive at a cost of approximately \$13,321 per month (rounded to the nearest dollar), per physical 10Gb ULL connection.

Similarly, the Exchange divided the total monthly cost for 1Gb connectivity of \$18,872 by the number of physical 1Gb connections the Exchange anticipates maintaining upon expiration of the waiver period at the time the proposed pricing was determined (12), to arrive at a cost of approximately \$1,573 per month (rounded to the nearest dollar), per physical 1Gb connection.

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***Costs Related to Offering Full Service MEO Ports***

The following chart details the individual line-item costs considered by the Exchange to be related to offering Full Service MEO Ports as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 5.1% of its overall Human Resources cost to offering Full Service MEO Ports).

<b>Full Service MEO Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$517,369	\$43,114	5.1%



Connectivity (external fees, cabling, switches, etc.)	\$160	\$13	0.6%
Internet Services and External Market Data	\$929	\$77	0.6%
Data Center	\$9,615	\$801	1.6%
Hardware and Software Maintenance and Licenses	\$3,106	\$259	0.6%
Depreciation	\$27,745	\$2,312	2.3%
Allocated Shared Expenses	\$46,983	\$3,915	1.7%
<b>TOTAL</b>	<b>\$605,907</b>	<b>\$50,491</b>	<b>3.9%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering Full Service MEO Ports.

### ***Human Resources***

With respect to Full Service MEO Ports, the Exchange calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing Full Service MEO Ports and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). Just as described above for connectivity, the estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks related to providing Full Service MEO Ports and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing Full Service MEO Ports and maintaining performance thereof. This includes personnel from the following Exchange departments that are predominately involved in providing Full Service MEO Ports: Business Systems Development, Trading Systems Development, Systems Operations and

Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. The Exchange notes that senior level executives were allocated Human Resources costs to the extent they are involved in overseeing tasks specifically related to providing Full Service MEO Ports. Senior level executives were only allocated Human Resources costs to the extent that they are involved in managing personnel responsible for tasks integral to providing Full Service MEO Ports. The Human Resources cost was again calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost driver includes external fees paid to connect to other exchanges and cabling and switches, as described above.

***Internet Services and External Market Data***

The next cost driver consists of internet services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton and Miami. For purposes of Full Service MEO Ports, the Exchange also includes a portion of its costs related to external market data. External market data includes fees paid to third parties, including other exchanges, to receive and consume market data from other markets. The Exchange includes external market data costs towards the provision of Full Service MEO Ports because such market data is necessary (in addition to physical connectivity) to offer certain services related to such ports, such as validating orders on entry against the NBBO and checking for other conditions (e.g., halted securities).<sup>40</sup> Thus, since market data from

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<sup>40</sup> The Exchange notes that MEMX separately allocated 7.5% of its external market data costs to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR

other exchanges is consumed at the Exchange's Full Service MEO Port level in order to validate orders, before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to Full Service MEO Ports.

### ***Data Center***

Data Center costs includes an allocation of the costs the Exchange incurs to provide Full Service MEO Ports in the third-party data centers where it maintains its equipment as well as related costs for market data to then enter the Exchange's system via Full Service MEO Ports (the Exchange does not own the primary data center or secondary data center, but instead leases space in data centers operated by third parties).

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange, as described above.

### ***Depreciation***

The vast majority of the software the Exchange uses to provide Full Service MEO Ports has been developed in-house and the cost of such development, which takes place over an extended period of time and includes not just development work, but also quality assurance and testing to ensure the software works as intended, is depreciated over time once the software is activated in the production environment. Hardware used to provide Full Service MEO Ports includes equipment used for testing and monitoring of order entry infrastructure and other physical equipment the Exchange purchased and is also depreciated over time.

All hardware and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods ranging from

three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 2.3% of all depreciation costs to providing Full Service MEO Ports. The Exchange allocated depreciation costs for depreciated software necessary to operate the Exchange to Full Service MEO Ports because such software is related to the provision of Full Service MEO Ports. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost driver was therefore narrowly tailored to depreciation related to Full Service MEO Ports.

#### *Allocated Shared Expenses*

Finally, a portion of general shared expenses was allocated to overall Full Service MEO Port costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide application sessions. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 4% of the overall cost for directors was allocated to providing Full Service MEO Ports. The Exchange notes that the 1.7% allocation of general shared expenses for Full Service MEO Ports is lower than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While Full Service MEO Ports have several areas where certain tangible costs are

heavily weighted towards providing such service (e.g., data centers, as described above), 10Gb ULL connectivity requires a broader level of support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange.

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***Approximate Cost Per Full Service MEO Port Per Month***

The Exchange divided the total monthly cost for Full Service MEO Ports of \$50,491 by the number of Full Service MEO Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (112), to arrive at a cost of approximately \$451 per month (rounded to the nearest dollar), per Full Service MEO Port.

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***Costs Related to Offering Limited Service MEO Ports***

The following chart details the individual line-item costs considered by the Exchange to be related to offering Limited Service MEO Ports as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 5% of its overall Human Resources cost to offering Limited Service MEO Ports).

<b>Limited Service MEO Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$512,844	\$42,737	5%
Connectivity (external fees, cabling, switches, etc.)	\$158	\$13	0.6%
Internet Services and External Market Data	\$921	\$77	0.6%
Data Center	\$9,531	\$794	1.6%
Hardware and Software Maintenance and Licenses	\$3,079	\$256	0.6%
Depreciation	\$27,503	\$2,292	2.2%
Allocated Shared Expenses	\$46,572	\$3,881	1.7%
<b>TOTAL</b>	<b>\$600,608</b>	<b>\$50,050</b>	<b>3.9%</b>

- a. The Annual Cost includes figures rounded to the nearest dollar.
- b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering Limited Service MEO Ports.

### ***Human Resources***

With respect to Limited Service MEO Ports, the Exchange calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing Limited Service MEO Ports and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). Just as described above for connectivity, the estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks related to providing Limited Service MEO Ports and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing Limited Service MEO Ports and maintaining performance thereof. This includes personnel from the following Exchange departments that are predominately involved in providing Limited Service MEO Ports: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. The Exchange notes that senior level executives were allocated Human Resources costs to the extent they are involved in overseeing tasks specifically related to providing Limited Service MEO Ports. Senior level executives were only allocated Human Resources costs to the extent that they are involved in managing personnel responsible for tasks

integral to providing and maintaining Limited Service MEO Ports. The Human Resources cost was again calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost includes external fees paid to connect to other exchanges and cabling and switches, as described above.

***Internet Services and External Market Data***

The next cost driver consists of internet services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton and Miami. For purposes of Limited Service MEO Ports, the Exchange also includes a portion of its costs related to external market data. External market data includes fees paid to third parties, including other exchanges, to receive and consume market data from other markets. The Exchange includes external market data costs towards the provision of Limited Service MEO Ports because such market data is necessary (in addition to physical connectivity) to offer certain services related to such ports, such as validating orders on entry against the NBBO and checking for other conditions (e.g., halted securities).<sup>41</sup> Thus, since market data from other exchanges is consumed at the Exchange's Limited Service MEO Port level in order to validate orders, before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to Limited Service MEI MEO.

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<sup>41</sup> The Exchange notes that MEMX separately allocated 7.5% of its external market data costs to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26).

### ***Data Center***

Data Center costs includes an allocation of the costs the Exchange incurs to provide Limited Service MEO Ports in the third-party data centers where it maintains its equipment as well as related costs for market data to then enter the Exchange's System via Limited Service MEO Ports (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).

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange, as described above.

### ***Depreciation***

The vast majority of the software the Exchange uses to provide Limited Service MEO Ports has been developed in-house and the cost of such development, which takes place over an extended period of time and includes not just development work, but also quality assurance and testing to ensure the software works as intended, is depreciated over time once the software is activated in the production environment. Hardware used to provide Limited Service MEO Ports includes equipment used for testing and monitoring of order entry infrastructure and other physical equipment the Exchange purchased and is also depreciated over time.

All hardware and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 2.2% of all depreciation costs to providing Limited Service MEO Ports. The Exchange allocated



depreciation costs for depreciated software necessary to operate the Exchange because such software is related to the provision of Limited Service MEO Ports. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost driver was therefore narrowly tailored to depreciation related to Limited Service MEO Ports.

### *Allocated Shared Expenses*

Finally, a portion of general shared expenses was allocated to overall Limited Service MEO Port costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide Limited Service MEO Ports. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 4% of the overall cost for directors was allocated to providing Limited Service MEO Ports. The Exchange notes that the 1.7% allocation of general shared expenses for Limited Service MEO Ports is lower than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While Limited Service MEO Ports have several areas where certain tangible costs are heavily weighted towards providing such service (e.g., data center, as described above), Limited Service MEO Ports require a broader level of support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange.

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***Approximate Cost Per Limited Service MEO Port Per Month***

The Exchange divided the total monthly cost for Limited Service MEO Ports of \$50,050 by the number of Limited Service MEO Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (208, for charged ports, without the cap on the number of Limited Service MEO Ports), to arrive at a cost of approximately \$241 per month (rounded to the nearest dollar), per Limited Service MEO Port.

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***Costs Related to Offering FIX, CTD and FXD Ports***

The following charts detail the individual line-item costs considered by the Exchange to be related to offering FIX, CTD and FXD Ports as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 1.3%, 0.9%, and 0.3% of its overall Human Resources cost to offering FIX Ports, CTD Ports, and FXD Ports, respectively).

<b>FIX Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$135,037	\$11,253	1.3%
Connectivity (external fees, cabling, switches, etc.)	\$42	\$4	0.2%
Internet Services and External Market Data	\$243	\$20	0.2%
Data Center	\$2,510	\$209	0.4%
Hardware and Software Maintenance and Licenses	\$811	\$66	0.2%
Depreciation	\$7,242	\$604	0.6%
Allocated Shared Expenses	\$12,263	\$1,022	0.4%
<b>TOTAL</b>	<b>\$158,148</b>	<b>\$13,178</b>	<b>1%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

<b>CTD Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$93,848	\$7,821	0.9%
Connectivity (external fees, cabling, switches, etc.)	\$29	\$2	0.1%
Internet Services and External Market Data	\$169	\$14	0.1%
Data Center	\$1,744	\$145	0.3%
Hardware and Software Maintenance and Licenses	\$563	\$47	0.1%
Depreciation	\$5,033	\$419	0.4%
Allocated Shared Expenses	\$8,522	\$710	0.3%
<b>TOTAL</b>	<b>\$109,908</b>	<b>\$9,158</b>	<b>0.7%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

<b>FXD Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$31,283	\$2,607	0.3%
Connectivity (external fees, cabling, switches, etc.)	\$10	\$1	0.04%
Internet Services and External Market Data	\$56	\$5	0.04%
Data Center	\$581	\$48	0.1%
Hardware and Software Maintenance and Licenses	\$188	\$16	0.04%
Depreciation	\$1,678	\$140	0.1%
Allocated Shared Expenses	\$2,841	\$237	0.1%
<b>TOTAL</b>	<b>\$36,637</b>	<b>\$3,054</b>	<b>0.2%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering FIX, CTD and FXD Ports.

### ***Human Resources***

With respect to FIX, CTD and FXD Ports, the Exchange calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing

FIX, CTD and FXD Ports and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). Just as described above for connectivity, the estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks related to providing FIX, CTD and FXD Ports and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing FIX, CTD and FXD Ports and maintaining performance thereof. This includes personnel from the following Exchange departments that are predominately involved in providing FIX, CTD and FXD Ports: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. The Exchange notes that senior level executives were allocated Human Resources costs to the extent they are involved in overseeing tasks specifically related to providing FIX, CTD and FXD Ports. Senior level executives were only allocated Human Resources costs to the extent that they are involved in managing personnel responsible for tasks integral to providing and maintaining FIX, CTD and FXD Ports. The Human Resources cost was again calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

Lastly, the Exchange notes that the Human Resource allocations for Full Service MEO Ports and Limited Service MEO Ports are greater than the Human Resource allocations for FIX, CTD and FXD Ports. For its Human Resource cost driver, the Exchange allocated 5.1% to Full

Service MEO Ports, 5% to Limited Service MEO Ports, 1.3% to FIX Ports, 0.9% to CTD Ports, and 0.3% to FXD Ports. This is because the MEO interface is a customized binary interface that the Exchange developed in-house and maintains on its own. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. Likewise, the CTD and FXD interfaces only provide information concerning clearing trade updates and trade execution, respectively, which also require less development, maintenance and support than the MEO interface. The MEO interface is performance oriented and designed to meet the needs of more latency sensitive Members. Due to the in-house development of the MEO interface, the Exchange was required to expend more internal personnel to support the MEO interface than the FIX, CTD or FXD interfaces. Because of the materially higher cost associated with maintaining and supporting MEO Ports (Full Service and Limited Service) versus FIX, CTD and FXD Ports, the Exchange allocates a materially higher percentage of Human Resource expense to MEO Ports versus FIX, CTD and FXD Ports.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost includes external fees paid to connect to other exchanges and cabling and switches, as described above.

***Internet Services and External Market Data***

The next cost driver consists of internet services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton and Miami. For purposes of FIX, CTD and FXD Ports, the Exchange also includes a portion of its costs related to external market data. External market data includes fees paid to third parties, including other exchanges, to receive and consume market data from other

markets. The Exchange includes external market data costs towards the provision of FIX, CTD and FXD Ports because such market data is necessary (in addition to physical connectivity) to offer certain services related to such ports, such as validating orders on entry against the NBBO and checking for other conditions (e.g., halted securities).<sup>42</sup> Thus, as market data from other exchanges is consumed at the port level in order to validate orders before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to FIX, CTD and FXD Ports.

### ***Data Center***

Data Center costs includes 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 for market data to then enter the Exchange's System via FIX, CTD and FXD Ports (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).

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange, as described above.

### ***Depreciation***

The vast majority of the software the Exchange uses to provide FIX, CTD and FXD Ports has been developed in-house and the cost of such development, which takes place over an extended period of time and includes not just development work, but also quality assurance and testing to ensure the software works as intended, is depreciated over time once the software is

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<sup>42</sup> The Exchange notes that MEMX separately allocated 7.5% of its external market data costs to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26).

activated in the production environment. Hardware used to provide FIX, CTD and FXD Ports includes equipment used for testing and monitoring of order entry infrastructure and other physical equipment the Exchange purchased and is also depreciated over time.

All hardware and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 0.6%, 0.4% and 0.1% of all depreciation costs to providing FIX, CTD and FXD Ports, respectively. The Exchange allocated depreciation costs for depreciated software necessary to operate the Exchange because such software is related to the provision of FIX, CTD and FXD Ports. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost driver was therefore narrowly tailored to depreciation related to FIX, CTD and FXD Ports.

Lastly, the Exchange notes that the Depreciation allocations for MEO Ports (Full Service and Limited Service) are greater than the Depreciation allocations for FIX, CTD and FXD Ports. For its Depreciation cost driver, the Exchange allocated 2.3% to Full Service MEO Ports, 2.2% to Limited Service MEO Ports, 0.6% to FIX Ports, 0.4% to CTD Ports, and 0.1% to FXD Ports. As discussed above, this is because the MEO interface is a customized binary interface that the Exchange developed in-house and maintains on its own. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. Likewise, the CTD and FXD interfaces only provide information concerning clearing trade updates and trade execution, respectively, which also require less development,

maintenance and support than the MEO interface. The Exchange maintains more dedicated hardware per port for the MEO interface compared to the FIX, CTD and FXD interfaces. As a result, the MEO interface is supported by more dedicated in-house hardware and software than the FIX, CTD and FXD interfaces that is subject to depreciation. Thus, there is a greater amount of equipment supporting the MEO interface than the FIX, CTD and FXD interfaces, resulting in higher depreciation costs.

### *Allocated Shared Expenses*

Finally, a portion of general shared expenses was allocated to overall FIX, CTD and FXD Port costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide FIX, CTD and FXD Ports. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 2% of the overall cost for directors was allocated to providing FIX, CTD and FXD Ports. The Exchange notes that the 0.4%, 0.3% and 0.1% allocations of general shared expenses for FIX, CTD and FXD Ports, respectively, are lower than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While MEO Ports (Full Service and Limited Service) have several areas where certain tangible costs are heavily weighted towards providing such service (e.g., data center, as described above), FIX, CTD and FXD Ports require a broader level of



support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange.

Lastly, the Exchange notes that the Allocated Shared Expense allocations for MEO Ports (Full Service and Limited Service) are greater than the same allocations for FIX, CTD and FXD Ports. For its Allocated Shared Expense cost driver, the Exchange allocated 1.7% to Full Service MEO Ports, 1.7% to Limited Service MEO Ports, 0.4% to FIX Ports, 0.3% to CTD Ports, and 0.1% to FXD Ports. As discussed above, this is because the MEO interface is a customized binary interface that the Exchange developed in-house and maintains on its own. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. Likewise, the CTD and FXD interfaces only provide information concerning clearing trade updates and trade execution, respectively, which also require less development, maintenance and support than the MEO interface. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. The MEO interface is performance oriented and designed to meet the needs of more latency sensitive Members. This required more internal personnel and resources to support than the FIX, CTD and FXD interfaces. Because of the materially higher cost associated with maintaining and supporting MEO Ports versus FIX, CTD and FXD Ports, the Exchange allocates a materially higher percentage of Allocated Shared expense to MEO Ports versus FIX, CTD and FXD Ports, which are less complex, standardized solutions.

***Approximate Cost Per FIX, CTD and FXD Port Per Month***

The Exchange divided the total monthly cost for FIX Ports of \$13,178 by the number of FIX Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at

the time the proposed pricing was determined (25), to arrive at a cost of approximately \$527 per month (rounded to the nearest dollar), per FIX Port.

Similarly, the Exchange divided the total monthly cost for CTD Ports of \$9,158 by the number of CTD Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (10), to arrive at a cost of approximately \$916 per month (rounded to the nearest dollar), per CTD Port.

Finally, the Exchange divided the total monthly cost for FXD Ports of \$3,054 by the number of FXD Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (6), to arrive at a cost of approximately \$509 per month (rounded to the nearest dollar), per FXD Port.

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#### ***Cost Analysis – Additional Discussion***

In conducting its Cost Analysis, the Exchange did not allocate any of its expenses in full to any core services (including physical connectivity or ports) and did not double-count any expenses. Instead, as described above, the Exchange allocated applicable cost drivers across its core services and used the same Cost Analysis to form the basis of this proposal and the separate filings the Exchange submitted (or plans to submit) proposing fees for proprietary market data feeds offered by the Exchange, as well as for Purge Ports. For instance, in calculating the Human Resources expenses to be allocated to physical connections based upon the above described methodology, the Exchange has a team of employees dedicated to network infrastructure and with respect to such employees the Exchange allocated network infrastructure personnel with a high percentage of the cost of such personnel (49.1%) given their focus on functions necessary to provide 10Gb ULL physical connections. The salaries of those same

personnel were allocated only 6.8% to Full Service MEO Ports and 6.7% to Limited Service MEO Ports and the remaining 37.4% was allocated to 1Gb connectivity, other port services, transaction services, membership services and market data. The Exchange did not allocate any other Human Resources expense for providing physical connections to any other employee group, outside of a smaller allocation of 18.4% for 10Gb ULL connectivity and 0.6% for 1Gb ULL, of the cost associated with certain specified personnel who work closely with and support network infrastructure personnel. In contrast, the Exchange allocated much smaller percentages of costs (3.1% for Full Service MEO Ports and 0.6% for Limited Service MEO Ports) across a wider range of personnel groups in order to allocate Human Resources costs to providing Full Service MEO Ports and Limited Service MEO Ports (0.2% for FIX Ports, 0.1% for CTD Ports, and 0.04% for FXD Ports). This is because a much wider range of personnel are involved in functions necessary to offer, monitor and maintain Full Service MEO Ports and Limited Service MEO Ports but the tasks necessary to do so are not a primary or full-time function.

In total, the Exchange allocated 35.7% of its personnel costs to providing 10Gb ULL and 1Gb ULL connectivity, 5.1% of its personnel costs to providing Full Service MEO Ports, 5% of its personnel costs to providing Limited Service MEO Ports, 1.3% of its personnel costs to providing FIX Ports, 0.9% of its personnel costs to providing CTD Ports, and 0.3% of its personnel costs to providing FXD Ports, for a total allocation of 48.3% Human Resources expense to provide these specific connectivity and port services. In turn, the Exchange allocated the remaining 51.7% of its Human Resources expense to membership services, transaction services, other port services and market data. Thus, again, the Exchange's allocations of cost across core services were based on real costs of operating the Exchange and were not double-counted across the core services or their associated revenue streams.

As another example, the Exchange allocated depreciation expense to all core services, including physical connections and ports, but in different amounts. 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. Without this equipment, the Exchange would not be able to operate the network and provide connectivity and port services to its Members and non-Members and their customers. However, the Exchange did not allocate all of the depreciation and amortization expense toward the cost of providing connectivity services, but instead allocated approximately 65.9% of the Exchange's overall depreciation and amortization expense to connectivity services (63.6% attributed to 10Gb ULL physical connections, 2.3% to 1Gb physical connections, and 5.6% attributed to Full Service MEO Ports, Limited Service MEO Ports, FIX Ports, CTD Ports, and FXD Ports, combined). The Exchange allocated the remaining depreciation and amortization expense (approximately 28.5%) toward the cost of providing transaction services, membership services, other port services, and market data.

The Exchange notes that its revenue estimates are based on projections across all potential revenue streams and will only be realized to the extent such revenue streams actually produce the revenue estimated once the waiver periods expire for each applicable proposed fee. The Exchange does not yet know whether such expectations will be realized. For instance, in order to generate the revenue expected from connectivity, the Exchange will have to be successful in retaining existing clients that wish to maintain physical connectivity and/or ports or in obtaining new clients that will purchase such services. Similarly, the Exchange will have to

be successful in retaining a positive net capture on transaction fees in order to realize the anticipated revenue from transaction pricing.

The Exchange notes that personnel began to plan for and develop the Exchange beginning in early 2023, and costs included in this Cost Analysis are related to the development and buildout of the Exchange since that time. During the Exchange's development and buildout that occurred throughout 2023 and continues to today, the Exchange routinely studied its aggregate costs to provide connectivity and port services, which were used to determine the proposed pricing for the provisions of connectivity and port services that are part of the Exchange's Cost Analysis, including projections. It is possible, however, that actual costs may be higher or lower. To the extent the Exchange sees growth in use of connectivity or port services it will receive additional revenue to offset future cost increases. However, if use of connectivity or port services is static or decreases, the Exchange might not realize the revenue that it anticipates or needs in order to cover applicable costs. Accordingly, the Exchange is committing to conduct a one-year review after implementation of these fees. The Exchange expects that it may propose to adjust fees at that time, to increase fees in the event that revenues fail to cover costs and a reasonable mark-up of such costs. Similarly, the Exchange may propose to decrease fees in the event that revenue materially exceeds our current projections. In addition, the Exchange will periodically conduct a review to inform its decision making on whether a fee change is appropriate (e.g., to monitor for costs increasing/decreasing or subscribers increasing/decreasing, etc. in ways that suggest the then-current fees are becoming dislocated from the prior cost-based analysis) and would propose to increase fees in the event that revenues fail to cover its costs and a reasonable mark-up, or decrease fees in the event that revenue or the mark-up materially exceeds our current projections. In the event that the Exchange determines to

propose a fee change, the results of a timely review, including an updated cost estimate, will be included in the rule filing proposing the fee change. More generally, the Exchange believes that it is appropriate for an exchange to refresh and update information about its relevant costs and revenues in seeking any future changes to fees, and the Exchange commits to do so.

### ***Projected Revenue***

The proposed fees will allow the Exchange to cover certain costs incurred by the Exchange associated with providing and maintaining necessary hardware and other network infrastructure as well as network monitoring and support services; without such hardware, infrastructure, monitoring and support the Exchange would be unable to provide the connectivity and port services. Much of the cost relates to monitoring and analysis of data and performance of the network via the subscriber's connection(s). The above costs, namely those associated with hardware, software, and human capital, enable the Exchange to measure network performance with nanosecond granularity. These same costs are also associated with time and money spent seeking to continuously improve the network performance, improving the subscriber's experience, based on monitoring and analysis activity. The Exchange routinely works to improve the performance of the network's hardware and software. The costs associated with maintaining and enhancing a state-of-the-art exchange network is a significant expense for the Exchange, and thus the Exchange believes that it is reasonable and appropriate to help offset those costs by amending fees for connectivity services. Subscribers, particularly those of 10Gb ULL connectivity, expect the Exchange to provide this level of support to connectivity so they continue to receive the performance they expect. This differentiates the Exchange from its competitors. As detailed above, the Exchange has five primary sources of revenue that it can potentially use to fund its operations: transaction fees, fees for connectivity services, membership

and regulatory fees, and market data fees. Accordingly, the Exchange must cover its expenses from these five primary sources of revenue.

All revenue projections are based upon an annual return for each of the proposed fees once the relevant waiver periods expire.

The Exchange's Cost Analysis estimates the annual cost to provide 1Gb connectivity services will equal \$226,461. Based on projected 1Gb connectivity services usage, the Exchange would generate annual revenue of approximately \$241,200. The Exchange believes this represents a modest profit of 6.1% when compared to the cost of providing 1Gb connectivity services.

The Exchange's Cost Analysis estimates the annual cost to provide 10Gb ULL connectivity services will equal \$6,393,839. Based on projected 10Gb ULL connectivity services usage, the Exchange would generate annual revenue of approximately \$6,810,000. The Exchange believes this represents a modest profit of 6.1% when compared to the cost of providing 10Gb connectivity services.

The Exchange's Cost Analysis estimates the annual cost to provide Full Service MEO Port services will equal \$605,907. Based on projected Full Service MEO Port service usage, the Exchange would generate annual revenue of approximately \$399,000. The Exchange believes this represents a loss of 51.9% when compared to the cost of providing Full Service MEO Port services.

The Exchange's Cost Analysis estimates the annual cost to provide Limited Service MEO Port services will equal \$600,608. Since launch, taking into account the proposal to remove the cap on the number of Limited Service MEO Ports available and based on projected Limited Service MEO Port service usage, the Exchange would generate annual revenue of approximately

\$624,000. The Exchange believes this represents a modest profit of 3.7% for providing Limited Service MEO Port services.

The Exchange's Cost Analysis estimates the annual cost to provide FIX Port services will equal \$158,148. Based on projected FIX Port service usage, the Exchange would generate annual revenue of approximately \$77,700. The Exchange estimates that its costs to provide FIX Port services will exceed its revenues by 103.5%.

The Exchange's Cost Analysis estimates the annual cost to provide CTD Port services will equal \$109,908. Based on projected CTD Port service usage, the Exchange would generate annual revenue of approximately \$54,000. The Exchange estimates that its costs to provide CTD Port services will exceed its revenues by 103.5%.

The Exchange's Cost Analysis estimates the annual cost to provide FXD Port services will equal \$36,637. Based on projected FXD Port service usage, the Exchange would generate annual revenue of approximately \$18,000. The Exchange estimates that its costs FXD Port services will exceed its revenues by 103.5%.

Based on the above discussion, the Exchange believes that even if the Exchange earns the above revenue or incrementally more or less, the proposed fees are fair and reasonable because they will not result in pricing that deviates from that of other exchanges or a supra-competitive profit, when comparing the total expense of the Exchange associated with providing each of the proposed connectivity and port services versus the total projected revenue of the Exchange associated with connectivity and port services. The Exchange's affiliated options markets recently filed to raise certain connectivity and port fees to the same, or similar, rates as proposed herein and those filings were not suspended by the Commission.<sup>43</sup>

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<sup>43</sup> See Securities Exchange Act Release Nos. 99822 (March 21, 2024), 89 FR 21337 (March 27, 2024) (SR-MIAX-2024-16) (raising monthly 10Gb ULL connectivity fee to \$13,500 per connection and raising fee for



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The Exchange notes that its revenue estimate is based on projections and will only be realized to the extent customer activity produces the revenue estimated. As a competitor in the hyper-competitive exchange environment, and an exchange focused on driving competition, the Exchange does not yet know whether such projections will be realized. For instance, in order to generate the revenue expected from 10Gb ULL connectivity and Ports, the Exchange will have to be successful in retaining existing clients that wish to utilize 10Gb ULL connectivity and Ports and/or obtaining new clients that will purchase such access. To the extent the Exchange is successful in encouraging new clients to utilize 10Gb ULL connectivity and Ports, the Exchange does not believe it should be penalized for such success. To the extent the Exchange has mispriced and experiences a net loss in connectivity clients or in transaction activity, the Exchange could experience a net reduction in revenue. While the Exchange is supportive of transparency around costs and potential margins (applied across all exchanges), as well as periodic review of revenues and applicable costs (as discussed below), 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 – or seeking to earn – supra-competitive profits. The Exchange believes the Cost Analysis and related projections in this filing demonstrate this fact.

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Limited Service MEI Ports to \$275 per month per port); 99823 (March 21, 2024), 89 FR 21312 (March 27, 2024) (SR-PEARL-2024-14) (raising monthly 10Gb ULL connectivity fee to \$13,500 per connection and establishing tiered fees for Full Service MEO Ports ranging from \$5,000 to \$12,000 per month); and 99824 (March 21, 2024), 89 FR 21379 (March 27, 2024) (SR-EMERALD-2024-12) (raising monthly 10Gb ULL connectivity fee to \$13,500 per connection and raising fee for Limited Service MEI Ports to \$420 per month per port).

The Exchange is owned by a holding company that is the parent company of five exchange markets and, therefore, the Exchange and its affiliated markets must allocate shared costs across all of those markets accordingly, pursuant to the above-described allocation methodology. In contrast, the IEX, which currently operates only one exchange, and MEMX, which just started operating two exchanges, in their recent non-transaction fee filings allocate the entire amount of that same cost to a single exchange. This can result in lower profit margins for the non-transaction fees established by IEX and MEMX because the single allocated cost does not experience the efficiencies and synergies that result from sharing costs across multiple exchanges. The Exchange and its affiliated markets often share a single cost, which results in cost efficiencies that can cause a broader gap between the allocated cost amount and projected revenue, even though the fee levels being proposed are lower or competitive with competing markets (as described above). To the extent that the application of a cost-based standard results in Commission Staff making determinations as to the appropriateness of certain profit margins, the Exchange believes that Commission Staff should also consider whether the proposed fee level is comparable to, or competitive with, the same fee charged by competing exchanges and how different cost allocation methodologies (such as across multiple markets) may result in different profit margins for comparable fee levels. Further, if Commission Staff is making determinations as to appropriate profit margins in their approval of exchange fees, the Exchange believes that the Commission should be clear to all market participants as to what they have determined is an appropriate profit margin and should apply such determinations consistently and, in the case of certain legacy exchanges, retroactively, if such standards are to avoid having a discriminatory effect.

Further, as is reflected in the proposal, the Exchange continuously and aggressively works to control its costs as a matter of good business practice. A potential profit margin should not be evaluated solely on its size; that assessment should also consider cost management and whether the ultimate fee reflects the value of the services provided. For example, a profit margin on one exchange should not be deemed excessive where that exchange has been successful in controlling its costs, but not excessive on another exchange where that exchange is charging comparable fees but has a lower profit margin due to higher costs. Doing so could have the perverse effect of not incentivizing cost control where higher costs alone could be used to justify fees increases.

The Proposed Pricing is not Unfairly Discriminatory and Provides for the Equitable Allocation of Fees, Dues, and other Charges

The Exchange believes that the proposed fees for connectivity and ports are reasonable, fair, equitable, and not unfairly discriminatory because they are designed to align fees with services provided and will apply equally to all subscribers.

*Connectivity*

The Exchange believes that the proposed fees are equitably allocated among anticipated users of the network connectivity and port alternatives, as the Exchange expects that users of 10Gb ULL connections will consume substantially more bandwidth and network resources than users of 1Gb ULL connection. It is the experience of the Exchange's affiliates that this is the case as 10Gb ULL connection users account for more than 99% of message traffic over the network on those markets, which drives other costs that are linked to capacity utilization, as described above, while the users of the 1Gb ULL connections account for less than 1% of message traffic over the network. In the experience of the Exchange's affiliates, users of the

1Gb connections do not have the same business needs for the high-performance network as 10Gb ULL users.

The Exchange's high-performance network and supporting infrastructure (including employee support), will provide unparalleled system throughput with the network ability to support access to several distinct options markets. 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 will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities, just as they do for the Exchange's affiliate markets. The Exchange must then purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages to satisfy its record keeping requirements under the Exchange Act.<sup>44</sup> Thus, as the number of messages an entity increases, certain other costs incurred by the Exchange that are correlated to, though not directly affected by, connection costs (e.g., storage costs, surveillance costs, service expenses) will likely also increase. Given this anticipated 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 market participants' will benefit.

#### *Full Service MEO Ports*

The proposed fees for Full Service MEO Ports are not unfairly discriminatory because they would apply to all Market Makers equally. The Exchange proposes a pricing structure for

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<sup>44</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

Full Service MEO Ports that is the same as that used by the Exchange's affiliates, MIAX, MIAX Pearl, and MIAX Emerald, except with lower pricing for each tier.<sup>45</sup> In the experience of the Exchange's affiliated markets, Members that are frequently in the highest tier for Full Service MEO/MEI Ports consume the most bandwidth and resources of the network. For example, the Exchange's affiliate, MIAX Pearl, recently noted that Market Makers who reach the highest tier for Full Service MEO Ports accounted for greater than 84% of ADV on MIAX Pearl, while Market Makers that are typically in the lowest Tier for Full Service MEO Ports, accounted for less than 14% of ADV on the Exchange.<sup>46</sup> Further, as noted by MIAX Pearl, the remaining 1% was accounted for by Market Makers who are frequently in the middle Tier for Full Service MEO Ports.<sup>47</sup>

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 during anticipated peak market conditions. The need to support billions of messages per day will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. The Exchange may have to purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of its surveillance program and to satisfy its record keeping requirements under the Exchange Act.<sup>48</sup> Thus, as the number of connections a Market Maker has increases, the related pull on Exchange resources may also increase once the

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<sup>45</sup> See MIAX Fee Schedule, Section 5)d)ii), MIAX Pearl Fee Schedule, Section 5)d), and MIAX Emerald Fee Schedule, Section 5)d)ii).

<sup>46</sup> See Securities Exchange Act Release No. 99823 (March 21, 2024), 89 FR 21312 (March 27, 2024) (SR-PEARL-2024-14).

<sup>47</sup> Id.

<sup>48</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

Exchange launches operations. The Exchange sought to design the proposed tiered-pricing structure to set the amount of the fees to relate to the number of ports a firm purchases. The more ports purchased by a Market Maker likely results in greater expenditure of Exchange resources and increased cost to the Exchange.

The Exchange further believes that the proposed fees are reasonable, equitably allocated and not unfairly discriminatory because, for the flat fee in each tier, the Exchange provides each Member two (2) Full Service MEO Ports for each matching engine to which that Member is connected. Unlike other options exchanges that provide similar port functionality and charge fees on a per port basis,<sup>49</sup> the Exchange offers Full Service MEO Ports as a package and provides Market Makers with the option to receive up to two Full Service MEO Ports per matching engine to which it connects. The Exchange currently has eight matching engines, which means Market Makers may receive up to sixteen Full Service MEO Ports for a single monthly fee, that can vary based on certain volume percentages or classes the Market Maker is registered in. Assuming a Market Maker connects to all eight matching engines during the month, and achieves the highest Tier for that month, with two Full Service MEO Ports per matching engine, this would result in a cost of \$375 per Full Service MEO Port (\$6,000 divided by 16).

The Exchange believes its proposal to provide a reduced Full Service MEO Port fee to Market Makers that fall within the 3<sup>rd</sup> and 4<sup>th</sup> levels of the proposed fee table is not unfairly discriminatory because this proposed lower monthly fee is designed to provide a lower fixed cost to those Market Makers who are willing to quote the entire Exchange market (or substantial

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<sup>49</sup> See NASDAQ Pricing Schedule, Options 7, Section 3, Ports and Other Services and NASDAQ Rules, General 8: Connectivity, Section 1. Co-Location Services (similar to the MIA X Pearl Options' MEO Ports, SQF ports are primarily utilized by Market Makers); ISE Pricing Schedule, Options 7, Section 7, Connectivity Fees and ISE Rules, General 8: Connectivity; NYSE American Options Fee Schedule, Section V.A. Port Fees and Section V.B. Co-Location Fees; GEMX Pricing Schedule, Options 7, Section 6, Connectivity Fees and GEMX Rules, General 8: Connectivity.

amount of the Exchange market), as objectively measured by either number of classes assigned or national ADV, but who do not otherwise execute a significant amount of volume on the Exchange. The Exchange believes that, by offering lower fixed costs to Market Makers that execute less volume, the Exchange will retain and attract smaller-scale Market Makers, which are an integral component of the option industry marketplace, but have been decreasing in number in recent years, due to industry consolidation and lower market maker profitability. The Exchange believes it is beneficial to incentivize these additional Market Makers to register to make markets on the Exchange to increase liquidity as the Exchange begins operations. Increased liquidity from a diverse set of market participants helps facilitate price discovery and the interaction of orders, which benefits all market participants of the Exchange. Since these smaller-scale Market Makers may utilize less Exchange capacity due to lower overall volume executed, the Exchange believes it is reasonable, equitably allocated and not unfairly discriminatory to offer such Market Makers a lower fixed cost. The Exchange notes that its affiliated markets, MIAX, MIAX Pearl, and MIAX Emerald, offer a similar reduced fee for their Full Service MEO/MEI Ports for smaller-scale Market Makers.<sup>50</sup>

#### *Limited Service MEO Ports*

The proposed fees for Limited Service MEO Ports are not unfairly discriminatory because they would apply to all Market Makers equally. All Market Makers will be eligible to receive four (4) free Limited Service MEO Ports per matching engine and those that elect to purchase more would be subject to the same monthly rate upon the expiration of the Initial Waiver Period, regardless of the number of additional Limited Service MEO Ports they

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<sup>50</sup> See MIAX Fee Schedule, Section 5)d)ii), note “\*”; MIAX Pearl Fee Schedule, Section 5)d), page 20, note “\*”; and MIAX Emerald Fee Schedule, Section 5)d)ii), note ■.

purchase. In the experience of the Exchange's affiliated markets, certain market participants choose to purchase additional Limited Service MEO Ports based on their own particular trading/quoting strategies and feel they need a certain number of connections to the Exchange to execute on those strategies. Other market participants may continue to choose to only utilize the free Limited Service MEO Ports to accommodate their own trading or quoting strategies, or other business models. All market participants elect to receive or purchase the amount of Limited Service MEO Ports they require based on their own business decisions and all market participants would be subject to the same fee structure and flat fee. Every market participant may receive up to four (4) free Limited Service MEO Ports and those that choose to purchase additional Limited Service MEO Ports may elect to do so based on their own business decisions and would continue to be subject to the same monthly fee.

The Exchange believes that its proposed fee for Limited Service MEO Ports is reasonable, equitable, and not unfairly discriminatory because it is designed to align fees with services provided, will apply equally to all Members that are assigned Limited Service MEO Ports (either directly or through a Service Bureau), and will minimize barriers to entry by providing all Members with four free Limited Service MEO Ports from the time the Exchange launches operations.<sup>51</sup> As a result of the proposed fee structure, a significant majority of Members may not be subject to any fee. In contrast, other exchanges generally charge in excess of \$450 per port without providing any free ports.<sup>52</sup> Even for Members that choose to maintain

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<sup>51</sup> The following rationale to support providing a certain number of Limited Service MEI Ports for free prior to applying a fee is similar to that used by the IEX in a 2020 proposal to do the same as proposed herein. See Securities Exchange Act Release No. 86626 (August 9, 2019), 84 FR 41793 (August 15, 2019) (SR-IEX-2019-07).

<sup>52</sup> See NASDAQ Pricing Schedule, Options 7, Section 3, Ports and Other Services and NASDAQ Rules, General 8: Connectivity, Section 1. Co-Location Services (similar to the Exchange's MEI Ports, SQF ports are primarily utilized by Market Makers); ISE Pricing Schedule, Options 7, Section 7, Connectivity Fees and ISE Rules, General 8: Connectivity; NYSE American Options Fee Schedule, Section V.A. Port Fees



more than four Limited Service MEI Ports, the Exchange believes that the cost-based fee proposed herein is low enough that it will not operate to restrain any Member's ability to maintain the number of Limited Service MEO Ports that it determines are consistent with its business objectives. Although the Exchange projects that no Members will utilize more than the four free Limited Service MEO Ports, if there is a small number of Members that do utilize more ports and are subject to the proposed fee of \$250 per port, those Members will still pay considerably less for such ports as compared to the fees that competing exchanges charge.<sup>53</sup> Further, the number of assigned Limited Service MEO Ports will continue to be based on decisions by each Member, including the ability to reduce fees by discontinuing unused Limited Service MEO Ports.

The Exchange believes that providing four free Limited Service MEO Ports is reasonable, equitable, and not unfairly discriminatory because it will enable Members to access the Exchange on this basis without having to pay for Limited Service MEO Ports, thereby encouraging order flow and liquidity from a diverse set of market participants, facilitating price discovery and the interaction of orders. The Exchange believes that four Limited Service MEO Ports is an appropriate number to provide for free because it aligns with the maximum number of free Limited Service MEO/MEI Ports offered by each of the Exchange's affiliated options

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and Section V.B. Co-Location Fees; GEMX Pricing Schedule, Options 7, Section 6, Connectivity Fees and GEMX Rules, General 8: Connectivity.

<sup>53</sup> Assuming a Member selects five Limited Service MEO Ports based on their business needs that Member on MIA X Sapphire would be charged only for the fifth Limited Service MEO Port and pay only the \$250 monthly fee, as the first four Limited Service MEO Ports would be free. Meanwhile, a Member that purchases five ports on NYSE Arca Options would pay \$450 per port per month, resulting in a total charge of \$2,250 per month. On Cboe BZX Options, that same member would pay \$750 per port per month, resulting in a total charge of \$3,750 per months for five ports. See NYSE Arca Options Fees and Charges, dated March 1, 2024, available at [https://www.nyse.com/publicdocs/nyse/markets/arca-options/NYSE\\_Arca\\_Options\\_Fee\\_Schedule.pdf](https://www.nyse.com/publicdocs/nyse/markets/arca-options/NYSE_Arca_Options_Fee_Schedule.pdf) and Cboe BZX Options Fee Schedule available at [https://www.cboe.com/us/options/membership/fee\\_schedule/](https://www.cboe.com/us/options/membership/fee_schedule/).

markets, and the Exchange believes will align with the amount of such ports that will be maintained by a substantial majority of Members once the Exchange launches operations.

Based on an initial survey of market participants that the Exchange anticipates will utilize Limited Service MEO Ports, the Exchange projects that only a few Members will be subject to any Limited Service MEO Port fees following the expiration of the Initial Waiver Period. In determining the appropriate number of Limited Service MEO Ports to provide for free, the Exchange considered several factors. First, the Exchange believes that, with respect to Limited Service MEO Port usage, Members will prefer at least two Limited Service MEO Ports, for redundancy purposes. Second, from a review of the number of Limited Service MEO Ports currently requested, the median number of ports per Member that will utilize Limited Service MEO Ports upon the launch of the Exchange is approximately eight. Thus, the Exchange believes that having four ports appears to be reasonably sufficient for the majority of Members to access the Exchange. On that basis, the Exchange chose four Limited Service MEO Ports as the maximum number of ports for which it will not charge to access the Exchange. The Exchange notes that some Members may use more Limited Service MEO Ports than other Members (and the four provided for free), which will be driven by the nature and volume of the business they conduct on the Exchange, and the choices they make in segmenting that business across different Limited Service MEO Ports. Allowing for this expansive use of Exchange capacity represents an aggregate cost that the Exchange seeks to recover through charging for ports five and higher.

The proposed fee structure is also designed to encourage Members to be efficient with their Limited Service MEO Port usage, thereby resulting in a corresponding increase in the efficiency that the Exchange would be able to realize in managing its aggregate costs for providing Limited Service MEO Ports. There is no requirement that any Member maintain a

specific number of Limited Service MEO Ports and a Member may choose to maintain as many or as few of such ports as each Member deems appropriate.

The Exchange assessed the impact of the structure and amount of the proposed fee on all Members that the Exchange anticipates will utilize Limited Service MEO Ports. The Exchange believes that the proposed fee is fair and equitably allocated across all Members. As a threshold matter, the fee will not by design apply differently to different types or sizes of Members. Nonetheless, upon launch, the Exchange will be able to assess whether there may be any differences in the amount of the projected fee that correlates to the type and/or size of different Members. This assessment will help determine whether the number of assigned Limited Service MEO Ports, and thus projected fees, correlates closely to a Member's inbound message volume to the Exchange. This is a similar assessment as that performed by the Exchange's affiliates, MIAX and MIAX Emerald, prior to changing their respective Limited Service MEI Port fees recently. Based on the experience of the Exchange's affiliates, as inbound message volume increases per Member, the number of requested and assigned Limited Service MEO Ports increases. As the Exchange has not launched operations at the time of this filing, the Exchange does not have data to show any correlation between a Member's inbound message volume and the number of Limited Service MEO Port assigned to the Member. However, based on the experience of the Exchange's affiliates, MIAX and MIAX Emerald, Members with relatively higher inbound message volume were projected to pay higher fees because they requested more Limited Service MEI Ports for those exchanges.

To achieve consistent, premium network performance, the Exchange must build and maintain a network that has the capacity to handle the message rate requirements of its heaviest network consumers during anticipated peak market conditions. The resultant need to support the

anticipated amount of billions of messages per day will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. This need will also require the Exchange to purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of its surveillance program and to satisfy its record keeping requirements under the Exchange Act.<sup>54</sup> Thus, as the number of connections per Market Maker increases, other costs incurred by the Exchange will likely also increase, e.g., storage costs, surveillance costs, service expenses.

The Exchange further believes that the proposed fees are reasonable, fair and equitable, and non-discriminatory because they will apply to all Members in the same manner and are not targeted at a specific type or category of market participant engaged in any particular trading strategy. All Members will receive four free Limited Service MEO Ports and pay the same proposed fee per Limited Service MEO Port for each additional Limited Service MEO Port. Each Limited Service MEO Port is identical, providing connectivity to the Exchange on identical terms. While the proposed fee will result in a different effective "per unit" rate for different Members after factoring in the four free Limited Service MEO Ports, the Exchange does not believe that this difference is material given the overall low proposed fee per Limited Service MEO Port. Because the first four Limited Service MEO Ports are free of charge, each entity will have a "per unit" rate of less than the proposed fee. Further, the fee is not connected to volume based tiers. All Members will be subject to the same fee schedule, regardless of the volume sent to or executed on the Exchange. The fee also does not depend on any distinctions between Members, customers, broker-dealers, or any other entity. The fee will be assessed solely based

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<sup>54</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

on the number of Limited Service MEO Ports an entity selects and not on any other distinction applied by the Exchange. While entities that send relatively more inbound messages to the Exchange may select more Limited Service MEO Ports, thereby resulting in higher fees, that distinction is based on decisions made by each Member and the extent and nature of the Member's business on the Exchange rather than application of the fee by the Exchange. Members can determine how many Limited Service MEO Ports they need to implement their trading strategies effectively. The Exchange proposes to offer additional Limited Service MEO Ports at a low fee to enable all Members to purchase as many Limited Service MEO Ports as their business needs dictate in order to optimize throughput and manage latency across the Exchange.

Notwithstanding that Members with the highest number of Limited Service MEO Ports will pay a greater percentage of the total projected fees than is represented by their Limited Service MEO Port usage, the Exchange does not believe that the proposed fee is unfairly discriminatory. It is not possible to fully synchronize the Exchange's objective to provide four free Limited Service MEO Ports to all Members, thereby minimizing barriers to entry and incentivizing liquidity on the Exchange, with an approach that exactly aligns the projected per Member fee with each Member's number of requested Limited Service MEO Ports. As proposed, the Exchange is providing a reasonable number of Limited Service MEO Ports to each Member without charge. Any variance between projected fees and Limited Service MEO Port usage is attributable to objective differences among Members in terms of the number of Limited Service MEO Ports they determine are appropriate based on their trading on the Exchange. Further, the Exchange believes that the low amount of the proposed fee (which in the aggregate

is projected to only partially recover the Exchange's directly-related costs as described herein) mitigates any disparate impact.

Further, the fee will help to encourage Limited Service MEO Port usage in a way that aligns with the Exchange's regulatory obligations. As a national securities exchange, the Exchange is subject to Regulation Systems Compliance and Integrity ("Reg SCI").<sup>55</sup> Reg SCI Rule 1001(a) requires that the Exchange establish, maintain, and enforce written policies and procedures reasonably designed to ensure (among other things) that its Reg SCI systems have levels of capacity adequate to maintain the Exchange's operational capability and promote the maintenance of fair and orderly markets.<sup>56</sup> By encouraging Members to be efficient with their Limited Service MEO Ports usage, the proposed fee will support the Exchange's Reg SCI obligations in this regard by ensuring that unused Limited Service MEO Ports are available to be allocated based on individual Members needs and as the Exchange's overall order and trade volumes increase. Additionally, because the Exchange will continue not to charge connectivity testing and certification fees to its disaster recovery facility or where the Exchange requires testing and certification, the proposed fee structure will further support the Exchange's Reg SCI compliance by reducing the potential impact of a disruption should the Exchange be required to switch to its disaster recovery facility and encouraging Members to engage in any necessary system testing without incurring any port fee costs.<sup>57</sup>

Finally, the Exchange believes that the proposed fee is consistent with Section 11A of the Exchange Act in that it is designed to facilitate the economically efficient execution of securities

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<sup>55</sup> 17 CFR 242.1000-1007.

<sup>56</sup> 17 CFR 242.1001(a).

<sup>57</sup> By comparison, some other exchanges charge less to connect to their disaster recovery facilities, but still charge an amount that could both recoup costs and potentially be a source of profits. See, e.g., Nasdaq Stock Market LLC Equity 7, Section 115 (Ports and other Services).

transactions, fair competition among brokers and dealers, exchange markets and markets other than exchange markets, and the practicability of brokers executing investors' orders in the best market. Specifically, the proposed low, cost-based fee will enable a broad range of the Exchange Members to continue to connect to the Exchange, thereby facilitating the economically efficient execution of securities transactions on the Exchange, fair competition between and among such Members, and the practicability of Members that are brokers executing investors' orders on the Exchange when it is the best market.

*FIX, CTD, and FXD Ports*

To achieve consistent, premium network performance, the Exchange must build and maintain a network that has the capacity to handle the message rate requirements of its heaviest network consumers during anticipated peak market conditions. The resultant need to support the anticipated amount of billions of messages per day will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. This need will also require the Exchange to purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of its surveillance program and to satisfy its record keeping requirements under the Exchange Act.<sup>58</sup> Thus, as the number of connections per Market Maker increases, other costs incurred by the Exchange will likely also increase, e.g., storage costs, surveillance costs, service expenses.

The Exchange further believes that the proposed fees for FIX, CTD and FXD Ports are reasonable, fair and equitable, and non-discriminatory because they will apply to all Members in the same manner and are not targeted at a specific type or category of market participant engaged

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<sup>58</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

in any particular trading strategy. The fee for each type of port does not depend on any distinctions between Members, customers, broker-dealers, or any other entity. The fee will be assessed solely based on the number of FIX, CTD or FXD Ports an entity selects and not on any other distinction applied by the Exchange.

*Waiver Period for Connectivity Fees*

The Exchange believes its proposal is consistent with Section 6(b)(4) of the Act,<sup>59</sup> which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges. Specifically, under the Exchange's proposal the monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and the 10Gb ULL connections to the disaster recovery facility for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The proposed monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be discounted by 50% for the three full calendar months thereafter.

The Exchange believes its proposal is reasonable, equitable and not unfairly discriminatory as the proposed fee waivers are equally available and will apply uniformly to all participants.

The Exchange also proposes that the monthly Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be waived for the partial month in which the Exchange launches operations, plus an additional three full calendar months. Additionally, the monthly Member network connectivity fees for the first two

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<sup>59</sup> 15 U.S.C. 78f(b)(4).



10Gb ULL connections on each switch to the primary/secondary facility will be discounted by 50% for the three full calendar months thereafter.

The Exchange believes that waiving the fees for the first two 10Gb ULL connections on each switch is reasonable, equitable and not unfairly discriminatory as all Exchange participants have an equal opportunity to take advantage of the proposed discount under the proposal. Additionally, the Exchange believes its proposal represents a balanced approach designed to incentivize connectivity to the Exchange and to also prevent oversubscription to ensure that the Exchange has the physical capacity necessary to support its proposal.

#### *Initial Waiver Period*

MIAX Sapphire proposes to assess monthly Financial Information Exchange (“FIX”) Port fees to Members in each month the Member is credentialed to use a FIX Port in the production environment and based upon the number of credentialed FIX Ports. However, the Exchange proposes that all port fees<sup>60</sup> will be waived during the Initial Waiver Period.<sup>61</sup> The Exchange believes its proposal is reasonable, equitable and not unfairly discriminatory as the proposed fee waivers are equally available and will apply uniformly to all participants.

#### **4. 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.

#### **Intra-Market Competition**

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<sup>60</sup> The port fees the Exchange proposes to waive during the Initial Waiver Period are Fix Port Fees (See Section d)i) of the Fee Schedule); MEO Port Fees (See Section d)ii) of the Fee Schedule); Clearing Trade Drop Port Fees (See Section d)iv) of the Fee Schedule); and FIX Drop Copy Port Fees (See Section d)v) of the Fee Schedule).

<sup>61</sup> See supra note 13.

The Exchange believes the proposed fees will not result in any burden on intra-market competition that is not necessary or appropriate in furtherance of the purposes of the Act because the proposed fees will allow the Exchange to recoup its costs with a small profit for providing 1Gb and 10Gb ULL connectivity, while recouping some of its costs for a negative margin for providing Full Service MEO Ports, Limited Service MEO Ports, FIX Ports, CTD Ports and FXD Ports, following expiration of the respective waiver periods for each fee. As described above, the Exchange anticipates operating at a loss for the majority of the above services in order to provide a low-cost alternative to attract order flow and encourage market participants to experience the high determinism and resiliency of the Exchange's trading Systems. To do so, the Exchange chooses to waive the fees for all of the connectivity and port services for a specified time period. This will likely result in the Exchange forgoing revenue it could generate from assessing any fees without a waiver period or higher fees upon expiration of the waiver periods. The Exchange could seek to charge higher fees upon launch, but that could serve to discourage participation on the Exchange. Instead, the Exchange chooses to provide a low-cost exchange alternative to the options industry, which may result in lower initial revenues.

Further, the Exchange does not believe that the proposed fees 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. The proposed fees will apply uniformly to all market participants regardless of the number of 1Gb or 10Gb ULL connections they choose to purchase. The proposed fees do not favor certain categories of market participants in a manner that would impose an undue burden on 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. In particular, Exchange personnel has been informally discussing potential fees for connectivity services with a diverse group of market participants that are likely to connect to the Exchange for launch (including large and small firms, firms with large connectivity service footprints and small connectivity service footprints, as well as extranets and service bureaus) for several months leading up to that time. The Exchange does not believe the proposed fees for connectivity services would negatively impact the ability of Members, non-Members (extranets or service bureaus), third-parties that purchase the Exchange's connectivity and resell it, and customers of those resellers to compete with other market participants or that they are placed at a disadvantage.

The Exchange does anticipate, however, that some market participants may reduce or discontinue use of connectivity services provided directly by the Exchange once the relevant waiver periods expire. The Exchange's affiliates have experienced similar reductions in use by their members for similar non-transaction fee increases. For example, one MIAX Pearl Options Market Maker terminated their MIAX Pearl Options membership on January 1, 2023 as a direct result of the similar proposed fee changes by MIAX Pearl Options.<sup>62</sup>

The Exchange does not believe that the proposed fees for connectivity services place certain market participants at a relative disadvantage to other market participants because the proposed connectivity pricing is associated with relative usage of the Exchange by each market participant and does not impose a barrier to entry to smaller participants. The Exchange believes

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<sup>62</sup> The Exchange acknowledges that IEX included in its proposal to adopt market data fees after offering market data for free an analysis of what its projected revenue would be if all of its existing customers continued to subscribe versus what its projected revenue would be if a limited number of customers subscribed due to the new fees. See Securities Exchange Act Release No. 94630 (April 7, 2022), 87 FR 21945 (April 13, 2022) (SR-IEX-2022-02). MEMX did not include a similar analysis in its recent non-transaction fee proposal. See *supra* note 41. The Exchange does not believe a similar analysis would be useful here because it is amending existing fees, not proposing to charge a new fee where existing subscribers may terminate connections because they are no longer enjoying the service at no cost.

its proposed pricing is reasonable and, when coupled with the availability of third-party providers that also offer connectivity solutions, that participation on the Exchange is affordable for all market participants, including smaller trading firms. As described above, the connectivity services purchased by market participants typically increase based on their additional message traffic and/or the complexity of their operations. The market participants that utilize more connectivity services typically utilize the most bandwidth, and those are the participants that consume the most resources from the network. Accordingly, the proposed fees for connectivity services do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation of the proposed connectivity fees reflects the network resources consumed by the various size of market participants and the costs to the Exchange of providing such connectivity services.

The Exchange does not believe its proposed fees for Limited Service MEO Ports will place certain market participants at a relative disadvantage to other market participants. All market participants would be eligible to receive four (4) free Limited Service MEO Ports and those that elect to purchase more would be subject to the same flat fee regardless of the number of additional Limited Service MEO Ports they purchase. All firms purchase the amount of Limited Service MEO Ports they require based on their own business decisions and similarly situated firms are subject to the same fees.

#### Inter-Market Competition

The Exchange also does not believe that the proposed rule change and price increase will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As this is a fee increase, arguably if set too high, this fee would make it easier for other exchanges to compete with the Exchange. Only if this were a

substantial fee decrease could this be considered a form of predatory pricing. In contrast, the Exchange believes that, without this fee increase, we are potentially at a competitive disadvantage to certain other exchanges that have in place higher fees for similar services. As we have noted, the Exchange believes that connectivity fees can be used to foster more competitive transaction pricing and additional infrastructure investment and there are other options markets of which market participants may connect to trade options at higher rates than the Exchange's. 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.

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

Not applicable.

6. **Extension of Time Period for Commission Action**

The Exchange does not consent to an extension of the time period for Commission action.

7. **Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2)**

Pursuant to Section 19(b)(3)(A)(ii) of the Act,<sup>63</sup> and Rule 19b-4(f)(2) thereunder<sup>64</sup> the Exchange has designated this proposal as establishing or changing a due, fee, or other charge imposed on any person, whether or not the person is a member of the self-regulatory organization, which renders the proposed rule change effective upon filing.

8. **Proposed Rule Change Based on rules of Another Self-Regulatory Organization or of the Commission**

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<sup>63</sup> 15 U.S.C. 78s(b)(3)(A)(ii).

<sup>64</sup> 17 CFR 240.19b-4.

The proposed rule change is not based on the rules of another self-regulatory organization or of the Commission.

**9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act**

Not applicable.

**10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act**

Not applicable.

**11. Exhibits**

1. Completed notice of proposed rule change for publication in the Federal Register.
5. Copy of the applicable section of the Fee Schedule.

**EXHIBIT 1**

SECURITIES AND EXCHANGE COMMISSION  
(Release No. 34- ; File No. SR-SAPPHIRE-2024-41)

December\_\_\_\_\_, 2024

Self-Regulatory Organizations: Notice of Filing and Immediate Effectiveness of a Proposed Rule Change by MIAX Sapphire, LLC to Amend the MIAX Sapphire Fee Schedule to Adopt Connectivity and Port Fees

Pursuant to the provisions of 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 December 7, 2024, MIAX Sapphire, LLC (“MIAX Sapphire” 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 Sapphire Options Exchange Fee Schedule (the “Fee Schedule”) to adopt connectivity and port fees.

The text of the proposed rule change is available on the Exchange’s website at <https://www.miaxglobal.com/markets/us-options/all-options-exchanges/rule-filings>, at MIAX Sapphire’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

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

<sup>2</sup> 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

On July 15, 2024, the U.S. Securities and Exchange Commission (“Commission”) approved the Exchange’s Form 1 application to register as a national securities exchange under Section 6 of the Exchange Act.<sup>3</sup> The Exchange commenced electronic operations on August 12, 2024.<sup>4</sup> The Exchange proposes to establish the following sections of the Fee Schedule, including proposed fee structures and amounts (the majority of which the Exchange proposes to waive for a specified time, as discussed further below): (1) connectivity fees for Members<sup>5</sup> and non-Members; and (2) certain port fees for Members and non-Members.<sup>6</sup> The Exchange initially filed this proposal on August 9, 2024 (SR-SAPPHIRE-2024-21). The Exchange withdrew SR-SAPPHIRE-2024-21 on August 14, 2024 and submitted SR-SAPPHIRE-2024-22. On October 10, 2024, the Exchange withdrew SR-SAPPHIRE-2024-22 and submitted SR-SAPPHIRE-2024-32. On December 6, 2024, the Exchange withdrew SR-SAPPHIRE-2024-32 and submitted this proposal.

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<sup>3</sup> See Securities Exchange Act Release No. 100539 (July 15, 2024), 89 FR 58848 (July 19, 2024) (File No. 10-240) (the “Approval Order”).

<sup>4</sup> See MIA X Sapphire News Alert, dated August 13, 2024, available at <https://www.miaxglobal.com/alert/2024/08/13/miami-international-holdings-announces-successful-launch-miax-sapphire?nav=all>.

<sup>5</sup> The term “Member” means an individual or organization that is registered with the Exchange pursuant to Chapter II of the Exchange’s Rules for purposes of trading on the Exchange as an “Electronic Exchange Member” or “Market Maker.” Members are deemed “members” under the Exchange Act. See Exchange Rule 100.

<sup>6</sup> The Exchange filed a separate rule filing to establish fees for Purge Ports. See SR-SAPPHIRE-2024-15. “Purge Ports” provide Market Makers with the ability to send quote purge messages to the MIA X Sapphire System. Purge Ports are not capable of sending or receiving any other type of messages or information. See the Definitions section of the Fee Schedule. Fees for all other types of ports are proposed in this filing.



### Connectivity Fees

The Exchange proposes to establish Section 5), System Connectivity Fees, which will describe network connectivity fees. The Exchange proposes to offer to both Members and non-Members the choice of a 1 Gigabit (“Gb”) fiber connection or the 10Gb ultra-low latency (“ULL”) fiber connection to the Exchange’s primary and secondary facilities, as well as its disaster recovery facility. The 1Gb and 10Gb ULL fees will be charged to both Members and non-Members for connectivity to the Exchange’s primary/secondary facility and to its disaster recovery facility.

The Exchange proposes to establish monthly fees of \$1,400 per 1Gb connection and \$13,500 per 10Gb ULL connection that will be assessed to Members and non-Members for connecting to the primary/secondary facility. The Exchange proposes to establish monthly fees of \$550 per 1Gb connection and \$2,750 per 10Gb ULL connection that will be assessed to Members and non-Members for connecting to the disaster recovery facility.

Monthly network connectivity fees for Members and non-Members for connectivity with the primary/secondary facility will be assessed in any month the Member or non-Member is credentialed to use any of the MIAX Sapphire Application Programming Interfaces (“APIs”) or market data feeds in the production environment. Further, the Exchange proposes to pro-rate the monthly 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 Sapphire 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. Monthly network connectivity fees for Members and non-Members for connectivity to the disaster recovery facility will be assessed in each month during which the Member or non-Member has

established connectivity to the disaster recovery facility.

The Exchange proposes that Members and non-Members utilizing the MENI<sup>7</sup> to connect to the trading platforms, market data systems, and disaster recovery facilities of the Exchange or its affiliated options markets (MIAX, MIAX Pearl, and MIAX Emerald)<sup>8</sup> via a single, shared 1Gb connection will only be assessed one monthly network connectivity fee per connection, regardless of the trading platforms, market data systems, and disaster recovery facilities accessed via such connection.

*Waiver Period for Connectivity Fees.* The Exchange proposes to waive the monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and the 10Gb ULL connections to the disaster recovery facility for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The proposed monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be discounted by 50% for the three full calendar months thereafter.

The Exchange proposes to waive the monthly Member and non-Member network

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<sup>7</sup> The term “MENI” means the MIAX Express Network Interconnect, which is a network infrastructure which provides Members and non-Members network connectivity to the MIAX Sapphire trading platform, market data systems, test systems, and disaster recovery facilities. When utilizing a shared 1Gb cross-connect, the MENI can also be configured to offer network connectivity to the trading platforms, market data systems, test systems, and disaster recovery facilities of the Exchange’s affiliates, MIAX, MIAX Pearl and MIAX Emerald. When utilizing a Dedicated cross-connect, the MENI can only be configured to offer network connectivity to the trading platforms, market data systems, and test systems of MIAX Sapphire. See the Definitions section of the Fee Schedule.

<sup>8</sup> The term “MIAX” means Miami International Securities Exchange, LLC. See Exchange Rule 100. The term “MIAX Pearl” means MIAX PEARL, LLC. All references to “MIAX Pearl” in this filing are to the options trading facility of MIAX PEARL, LLC. References to “MIAX Pearl Equities” are to the equities trading facility of MIAX PEARL, LLC. See MIAX Pearl Rule 1901. The term “MIAX Emerald” means MIAX Emerald, LLC. See Exchange Rule 100. MIAX, MIAX Pearl and MIAX Emerald are collectively referred to herein as the “affiliated markets.”

connectivity fees for the first two 10Gb ULL connections on each switch<sup>9</sup> to the primary/secondary facility for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The Exchange proposes that the monthly Member and non-Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be discounted by 50% for the three full calendar months thereafter. Any subsequent 10Gb ULL connections on each switch will be charged the full monthly rate of \$13,500 per 10Gb ULL connection.

For clarity, the Exchange provides the below examples regarding connectivity fees, utilizing the launch date of August 12, 2024:

- Members and non-Members that subscribe to the 1Gb connection to the primary/secondary facility and/or disaster recovery facility, and/or subscribe to the 10Gb ULL connection to the disaster recovery facility, will not be charged the proposed rates (i.e., \$1,400 for 1Gb connections to the primary/secondary facility, \$550 for 1Gb connections to the disaster recovery facility, or \$2,750 for 10Gb ULL connections to the disaster recovery facility) for the remaining days in August, as well as for the entire period covering the months of September 2024 through November 2024. Thereafter, Members and non-Members will receive a 50% discount for each 1Gb connection to the primary/secondary facility and disaster recovery facility, and for each 10Gb ULL connection to the disaster recovery facility for entire period covering December 2024 through February 2025.

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<sup>9</sup> The network switches are the first layer of access to the trading platform that firms connect to before being able to access the Exchange's matching engines, each of which pertain to a certain list of underlying symbols. The Exchange notes that it is possible to reach each matching engine from a single switch.

- Members and non-Members that subscribe to the 10Gb ULL connection to the primary/secondary facility will not be charged the proposed rate (\$13,500) for the first two 10Gb ULL connections on each switch to the primary/secondary facility for the remaining days in August, as well as the entire period covering the months of September through November 2024. Thereafter, Members and non-Members will receive a 50% discount for the first two 10Gb ULL connections on each switch to the primary/secondary facility for entire period covering December 2024 through February 2025. For each 10Gb ULL connection on each switch greater than two (i.e., three or more), Members and non-Members will be assessed the entire amount of the proposed rate beginning upon the launch of the Exchange.

The Exchange previously communicated to market participants that the Exchange intends to waive the monthly Member and non-Member network connectivity fees in the manner described above.<sup>10</sup> Even though the Exchange proposes to waive the Member and non-Member network connectivity fees for the periods of time described above, the Exchange believes that it is appropriate to provide market participants with the overall structure of the fees by outlining the structure and amounts in the Fee Schedule, so that there is general awareness that the Exchange intends to assess such fees in the future. The Exchange notes that its affiliated markets, MIAX, MIAX Pearl, and MIAX Emerald, provide for the same structure and amounts, absent the waiver and discount periods described above, for connectivity fees assessed to their

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<sup>10</sup> See Fee Change Alert, MIAX Sapphire Options Exchange – Updated Summary of Proposed Non-Transaction Fees to Clarify Application of Production Connectivity Waiver Period, dated July 26, 2024, available at <https://www.miaxglobal.com/alert/2024/07/26/miax-sapphire-options-exchange-updated-summary-proposed-non-transaction>.

Members and non-Members.<sup>11</sup>

### Port Fees

The Exchange proposes to establish Section 5)d), Port Fees, which will provide the fee structure and amounts for the different types of ports offered by the Exchange, which are described below.<sup>12</sup> MIAX Sapphire has primary and secondary data centers and a disaster recovery center. Each port provides access to all Exchange data centers for a single fee. The Exchange notes that, unless otherwise specifically set forth in the Fee Schedule, the port fees include the information communicated through the port. That is, unless otherwise specifically set forth in the Fee Schedule, there is no additional charge for the information that is communicated through the port apart from what the user is assessed for each port.

*Waiver Period.* The Exchange proposes to waive all port fees during the Initial Waiver Period.<sup>13</sup> Even though the Exchange proposes to fully waive all port fees during the Initial Waiver Period upon launching operations, the Exchange believes that is appropriate to provide market participants with the overall structure of the fees by outlining the structure and amounts in the Fee Schedule, so that there is general awareness that the Exchange intends to assess such fees upon the expiration of the defined period of the Initial Waiver Period.

### *FIX Port Fees*<sup>14</sup>

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<sup>11</sup> See MIAX Fee Schedule, Sections 5)a)-b); MIAX Pearl Fee Schedule, Sections 5)a)-b); and MIAX Emerald Fee Schedule, Sections 5)a)-b).

<sup>12</sup> The Exchange notes that this filing includes proposed fees for FIX Ports, Full Service MEO Ports, Limited Service MEO Ports, Clearing Trade Drop Ports, and FIX Drop Copy Ports. The Exchange separately filed to establish fees for Purge Ports. See SR-SAPPHIRE-2024-26. The Exhibit 5 reflects the separate filing to establish fees for Purge Ports.

<sup>13</sup> The term “Initial Waiver Period” means, for each applicable fee, the period of time from the initial effective date of the MIAX Sapphire Fee Schedule plus an additional six (6) full calendar months after the completion of the partial month of the Exchange launch. See the Definitions Section of the Fee Schedule.

<sup>14</sup> The term “FIX Interface” means the Financial Information Exchange interface used for submitting certain order types (as set forth in Rule 516) to the MIAX Sapphire System. See Exchange Rule 100. The term “FIX Port” means a FIX port that allows Members to send orders and other messages using the FIX protocol. See the Definitions section of the Fee Schedule.

The Exchange proposes to establish Section 5)d)i), FIX Port Fees, pursuant to which the Exchange will assess FIX Port fees to Members in each month the Member is credentialed to use a FIX Port in the production environment and based upon the number of credentialed FIX Ports. In particular, the Exchange proposes to assess Members the following monthly FIX Port fees: (i) \$275 for the 1<sup>st</sup> FIX Port; (ii) \$175 per port for the 2<sup>nd</sup> through 5<sup>th</sup> FIX Ports; and (iii) \$75 per port for the 6<sup>th</sup> FIX Port and each additional FIX Port. FIX Port fees will be waived during the Initial Waiver Period.

*MEO Port Fees*<sup>15</sup>

The Exchange proposes to establish Section 5)d)ii), MEO Port Fees, pursuant to which the Exchange will assess MEO Port fees based upon the different types of MEO Ports offered by the Exchange. MIAX Sapphire offers different types of MEO Ports depending on the services required by Members.

The Exchange proposes to assess monthly Full Service MEO Port<sup>16</sup> fees to Market Makers<sup>17</sup> based upon the number of classes or class volume accessed by the Market Maker. MIAX Sapphire will assess monthly Full Service MEO Port fees to Market Makers in each month the Market Maker has been credentialed to use the Full Service MEO Port in the production environment and has registered to quote in at least one class.

Specifically, the Exchange proposes to establish the following monthly Full Service MEO Port fees: (i) \$2,500 for Market Maker registrations in up to 10 option classes or up to 20%

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<sup>15</sup> The term “MEO Interface” or “MEO” means a binary order interface for certain order types as set forth in Rule 516 into the MIAX Sapphire System. See Exchange Rule 100 and the Definitions section of the Fee Schedule.

<sup>16</sup> The term “Full Service MEO Port” means an MEO port that supports all MEO input message types and binary bulk order entry. See the Definitions section of the Fee Schedule.

<sup>17</sup> The term “Market Maker” or “MM” means a Member registered with the Exchange for the purpose of making markets in options contracts traded on the Exchange and that is vested with the rights and responsibilities specified in Chapter VI of the Exchange’s Rules. See Exchange Rule 100.

of option classes by volume; (ii) \$3,750 for Market Maker registrations in up to 40 option classes or up to 35% of option classes by volume; (iii) \$5,000 for Market Maker registrations in up to 100 option classes or up to 50% of option classes by volume; and (iv) \$6,000 for Market Maker registrations in over 100 option classes or over 50% of option classes by volume up to all option classes listed on MIAX Sapphire.

The Exchange also proposes to adopt footnote “b.” for its Full Service MEO Port fees that will apply to the Market Makers who fall within the following Full Service MEO Port fee levels, which represent the 3<sup>rd</sup> and 4<sup>th</sup> levels of the fee table: Market Makers who have (i) registrations in up to 100 option classes or up to 50% of option classes by volume, and (ii) registrations in over 100 option classes or over 50% of option classes by volume up to all option classes listed on MIAX Sapphire. The Exchange proposes that for these monthly Full Service MEO Port tier levels, if the Market Maker’s total monthly executed volume during the relevant month is less than 0.015% of the total monthly executed volume reported by OCC in the Market Maker account type for MIAX Sapphire–listed option classes for that month, then the fee will be \$4,000 instead of the fee otherwise applicable to such level (i.e., \$5,000 or \$6,000).

The purpose of this proposed lower monthly Full Service MEO Port fee is to provide a lower fixed cost to those Market Makers who quote the entire Exchange market (or substantial amount of the Exchange market), as objectively measured by either number of classes assigned or national average daily volume (“ADV”), but who do not otherwise execute a significant amount of volume on the Exchange. The Exchange believes that, by offering lower fixed costs to Market Makers that execute less volume, the Exchange will retain and attract smaller-scale Market Makers, which are an integral component of the option industry marketplace, but have been decreasing in number in recent years, due to industry consolidation and lower market maker profitability. Since these smaller-scale Market Makers utilize less Exchange capacity due to

lower overall volume executed, the Exchange believes it is reasonable and appropriate to offer such Market Makers a lower fixed cost. The Exchange notes that its affiliated markets, MIAX, MIAX Pearl, and MIAX Emerald, offer a similar reduced fee for their full service MEO/MEI ports for smaller-scale Market Makers.<sup>18</sup> Accordingly, this concept is not novel.

For the calculation of the monthly Full Service MEO Port fees, the applicable fee rate is the lesser of either the per class basis or percentage of total national ADV measurement. The amount of the monthly Full Service MEO Port fee will be based upon the number of classes in which the Market Maker was registered to quote on any given day within the calendar month, or upon the class volume percentages set forth in the table in Section 5)d)ii) of the Fee Schedule. A Market Maker is determined to be registered in a class if that Market Maker has been registered in one or more series in that class.<sup>19</sup> The Exchange will assess MIAX Sapphire Market Makers the monthly Full Service MEO Port fee based on the greatest number of classes listed on MIAX Sapphire that the MIAX Sapphire Market Maker registered to quote in on any given day within a calendar month. The class volume percentage is based on the total national average daily volume in classes listed on MIAX Sapphire in the prior calendar quarter. Newly listed option classes are excluded from the calculation of the monthly Full Service MEO Port fee until the calendar quarter following their listing, at which time the newly listed option classes will be included in both the per class count and the percentage of total national average daily volume.

MEO Port users will be allocated two (2) Full Service MEO Ports and four (4) Limited Service MEO Ports per Matching Engine<sup>20</sup> to which they connect. MEO Port fees include MEO

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<sup>18</sup> See MIAX Fee Schedule, Section 5)d)ii), note “\*”; MIAX Pearl Fee Schedule, Section 5)d), page 20, note “\*”; and MIAX Emerald Fee Schedule, Section 5)d)ii), note ■.

<sup>19</sup> See, generally, Chapter VI of the Exchange’s Rules.

<sup>20</sup> A “Matching Engine” is a part of the MIAX Sapphire electronic system that processes options orders and trades on a symbol-by-symbol basis. Some Matching Engines will process option classes with multiple root symbols, and other Matching Engines may be dedicated to one single option root symbol (for example, options on SPY may be processed by one single Matching Engine that is dedicated only to SPY). A particular



Ports at the primary, secondary and disaster recovery data centers. Market Makers may request additional Limited Service MEO Ports for which MIAX Sapphire proposes to assess Market Makers \$250 per month per additional Limited Service MEO Port for each Matching Engine in excess of the four (4) Limited Service MEO Ports described above.

Full Service MEO Port fees and Limited Service MEO Port fees will be waived during the Initial Waiver Period.

#### *Clearing Trade Drop Port Fees*<sup>21</sup>

The Exchange proposes to establish Section 5)d)iv), Clearing Trade Drop Port Fees. The Exchange proposes to assess a CTD Port fee of \$450 per month. This fixed fee structure and amount is the same as the CTD Port fee in place at the Exchange's affiliate, MIAX Emerald.<sup>22</sup> CTD Port fees will be waived during the Initial Waiver Period.

#### *FIX Drop Copy Port Fees*<sup>23</sup>

The Exchange proposes to establish Section 5)d)v), Fix Drop Copy Port Fees. The Exchange proposes to assess an FXD Port fee of \$250 per month. This fixed fee structure is the

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root symbol may only be assigned to a single designated Matching Engine. A particular root symbol may not be assigned to multiple Matching Engines. See the Definitions section of the Fee Schedule.

<sup>21</sup> A "CTD Port" or "Clearing Trade Drop Port" provides an Exchange Member with a real-time clearing trade updates. The updates include the Member's clearing trade messages on a low latency, real-time basis. The trade messages are routed to a Member's connection containing certain information. The information includes, among other things, the following: (i) trade date and time; (ii) symbol information; (iii) trade price/size information; (iv) Member type (for example, and without limitation, Market Maker, Electronic Exchange Member, Broker-Dealer); and (v) Exchange MPID for each side of the transaction, including Clearing Member MPID. See the Definitions section of the Fee Schedule. The term "Electronic Exchange Member" or "EEM" means the holder of a Trading Permit who is a Member representing as agent Public Customer Orders or Non-Customer Orders on the Exchange and those non-Market Maker Members conducting proprietary trading. Electronic Exchange Members are deemed "members" under the Exchange Act. See Exchange Rule 100.

<sup>22</sup> See MIAX Emerald Fee Schedule, Section 5)d)iii).

<sup>23</sup> The term "FXD" or "FIX Drop Copy Port" means a messaging interface that provides a copy of real-time trade execution, trade correction and trade cancellation information to FIX Drop Copy Port users who subscribe to the service. FXD Port users are those users who are designated by an EEM to receive the information and the information is restricted for use by the EEM only. See the Definitions section of the Fee Schedule.

same as the FXD Port fee structure in place at the Exchange's affiliate, MIAX Emerald, and is half the price of the FXD Port fee for MIAX Emerald.<sup>24</sup> FXD Port fees will be waived during the Initial Waiver Period.

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As described more fully below, the Exchange provides a cost analysis to support its proposed connectivity and port fees that includes, among other things, descriptions of how the Exchange allocated costs among it and its affiliated markets (MIAX, MIAX Pearl, and MIAX Emerald) to ensure no cost was allocated more than once, as well as additional detail supporting its cost allocation processes. The Exchange proposes connectivity and port fees that are intended to cover the Exchange's cost of providing connectivity and ports, with a reasonable mark-up over those costs.

## 2. Statutory Basis

The Exchange believes that the proposed fees are consistent with Section 6(b) of the Act<sup>25</sup> in general, and furthers the objectives of Section 6(b)(4) of the Act<sup>26</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 which the Exchange operates or controls. The Exchange also believes the proposed fees further the objectives of Section 6(b)(5) of the Act<sup>27</sup> in that they are designed to promote just and equitable principles of trade, remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in

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<sup>24</sup> See MIAX Emerald Fee Schedule, Section 5)d)iv).

<sup>25</sup> 15 U.S.C. 78f(b).

<sup>26</sup> 15 U.S.C. 78f(b)(4).

<sup>27</sup> 15 U.S.C. 78f(b)(5).

general protect investors and the public interest and are not designed to permit unfair discrimination between customers, issuers, brokers and dealers.

#### Cost Analysis

In general, 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 Exchange Act requirements that fees be reasonable, equitably allocated, not unfairly discriminatory, and not create an undue burden on competition among members and markets. In particular, the Exchange believes that each exchange should take extra care to be able to demonstrate that these fees are based on its costs and reasonable business needs.

In proposing to charge fees for connectivity and port services, the Exchange is especially diligent in assessing those fees in a transparent way against its own aggregate costs of providing the related service, and in carefully and transparently assessing the impact on Members – both generally and in relation to other Members, i.e., to assure the fee will not create a financial burden on any participant and will not have an undue impact in particular on smaller Members and competition among Members in general. The Exchange believes that this level of diligence and transparency is called for by the requirements of Section 19(b)(1) under the Act,<sup>28</sup> and Rule 19b-4 thereunder,<sup>29</sup> with respect to the types of information exchanges should provide when filing fee changes, and Section 6(b) of the Act,<sup>30</sup> which requires, among other things, that exchange fees be reasonable and equitably allocated,<sup>31</sup> not designed to permit unfair discrimination,<sup>32</sup> and that they not impose a burden on competition not necessary or appropriate

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<sup>28</sup> 15 U.S.C. 78s(b)(1).

<sup>29</sup> 17 CFR 240.19b-4.

<sup>30</sup> 15 U.S.C. 78f(b).

<sup>31</sup> 15 U.S.C. 78f(b)(4).

<sup>32</sup> 15 U.S.C. 78f(b)(5).

in furtherance of the purposes of the Act.<sup>33</sup> This rule change proposal addresses those requirements, and the analysis and data in each of the sections that follow are designed to clearly and comprehensively show how they are met.<sup>34</sup>

As detailed below, the Exchange recently calculated its aggregate annual costs (and approximations for monthly costs) for providing 1Gb and 10Gb ULL connectivity, Full Service MEO Ports, Limited Service MEO Ports, FIX Ports, CTD Ports, and FXD Ports. For physical 1Gb and 10Gb ULL connectivity combined, the Exchange calculated its aggregate annual cost to equal \$6,620,300 (or approximately \$551,692 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months). For the various port services, the Exchange calculated the following annual costs: \$605,907 for Full Service MEO Ports (or approximately \$50,491 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); \$600,608 for Limited Service MEO Ports (or approximately \$50,050 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); \$158,148 for FIX Ports (or approximately \$13,178 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); \$109,908 for CTD Ports (or approximately \$9,158 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months); and \$36,637 for FXD Ports (or approximately \$3,054 per month, when rounded to the nearest dollar when dividing the combined annual cost by 12 months). In order to cover the aggregate costs of providing connectivity and ports to its users (both Members and non-Members<sup>35</sup>) going forward and to

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<sup>33</sup> 15 U.S.C. 78f(b)(8).

<sup>34</sup> See supra note 31.

<sup>35</sup> Types of market participants that obtain connectivity services from the Exchange but are not Members include service bureaus and extranets. Service bureaus offer technology-based services to other companies for a fee, including order entry services, and thus, may access ports on behalf of one or more Members. Extranets offer physical connectivity services to Members and non-Members.

make a modest profit for connectivity services, as described below, the Exchange proposes to modify its Fee Schedule to establish the connectivity and port fees described above, subject to certain fee waiver periods. The Exchange does not anticipate that it will make an overall profit on the various port services following the expiration of the Initial Waiver Period, on an annual basis, based on projected subscriber data.

The Exchange's affiliates previously completed a study of their aggregate costs to provide connectivity and port services and produce market data, defined above as its Cost Analysis.<sup>36</sup> Personnel began to plan for and develop the Exchange beginning in early 2023, and costs included in this Cost Analysis are related to the development and buildout of the Exchange since that time. During the Exchange's development and buildout that occurred throughout 2023 and continues to today, the Exchange routinely studied its aggregate costs to provide connectivity and port services, which were used to determine the proposed pricing for the provisions of connectivity and port services that are part of the Exchange's Cost Analysis. The Cost Analysis required a detailed analysis of the Exchange's aggregate baseline costs, including a determination and allocation of costs for core services provided by the Exchange – transaction execution, market data, membership services, physical connectivity, and port access (which provide order entry, cancellation and modification functionality, risk functionality, the ability to receive drop copies, and other functionality). The Exchange separately divided its costs between those costs necessary to deliver each of these core services, including infrastructure, software, human resources (i.e., personnel), and certain general and administrative expenses ("cost

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<sup>36</sup> See Securities Exchange Act Release Nos. 100041 (April 26, 2024), 89 FR 35868 (May 2, 2024) (SR-MIAX-2024-25); 100319 (June 12, 2024), 89 FR 51562 (June 18, 2024) (SR-PEARL-2024-25); 100042 (April 26, 2024), 89 FR 35879 (May 2, 2024) (SR-EMERALD-2024-15). The Exchange frequently updates its Cost Analysis as strategic initiatives change, costs increase or decrease, and market participant needs and trading activity (once live trading begins) changes. The Exchange's most recent Cost Analysis was conducted ahead of this filing.

drivers”).

As an initial step, the Exchange determined the total cost for the Exchange and the affiliated markets for each cost driver as part of its 2024 budget review process. The 2024 budget review is a company-wide process that occurs over the course of many months, includes meetings among senior management, department heads, and the Finance Team. Each department head is required to send a “bottom up” budget to the Finance Team allocating costs at the profit and loss account and vendor levels for the Exchange and its affiliated markets based on a number of factors, including server counts, additional hardware and software utilization, current or anticipated functional or non-functional development projects, capacity needs, end-of-life or end-of-service intervals, number of members, market model (e.g., price time or pro-rata, simple only or simple and complex markets, auction functionality, etc.), which may impact message traffic, individual system architectures that impact platform size,<sup>37</sup> storage needs, dedicated infrastructure versus shared infrastructure allocated per platform based on the resources required to support each platform, number of available connections, and employees allocated time. For the 2024 budget process for MIAX Sapphire, only costs and anticipated revenues associated with the electronic exchange were considered. While MIAX Sapphire plans on opening its trading floor in 2025 costs and anticipated revenues from the trading floor were not included as part of any analysis for MIAX Sapphire for 2024.<sup>38</sup>All of these factors result in different allocation percentages among the Exchange and its affiliated markets, i.e., the different percentages of the overall cost driver allocated to the Exchange and its affiliated markets will

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<sup>37</sup> For example, MIAX Sapphire maintains 8 matching engines, MIAX Emerald maintains 12 matching engines, MIAX Pearl Options maintains 12 matching engines, MIAX Pearl Equities maintains 24 matching engines, and MIAX maintains 24 matching engines.

<sup>38</sup> Additionally, while MIAX Sapphire received approval as a national securities exchange on July 15, 2024, start-up costs associated with the launch of MIAX Sapphire were not included in the costs used for the 2024 electronic exchange projections.

cause the dollar amount of the overall cost allocated among the Exchange and its affiliated markets to also differ. Because the Exchange's parent company currently owns and operates four separate and distinct marketplaces, the Exchange must determine the costs associated with each actual market – as opposed to the Exchange's parent company simply concluding that all cost drivers are the same at each individual marketplace and dividing total cost by five (5) (evenly for each marketplace). Rather, the Exchange's parent company determines an accurate cost for each marketplace, which results in different allocations and amounts across exchanges for the same cost drivers, due to the unique factors of each marketplace as described above. This allocation methodology also ensures that no cost would be allocated twice or double-counted between the Exchange and its affiliated markets. The Finance Team then consolidates the budget and sends it to senior management, including the Chief Financial Officer and Chief Executive Officer, for review and approval. Next, the budget is presented to the Board of Directors and the Finance and Audit Committees for each exchange for their approval. The above steps encompass the first step of the cost allocation process.

The next step involves determining what portion of the cost allocated to the Exchange pursuant to the above methodology is to be allocated to each core service, e.g., connectivity and ports, market data, and transaction services. The Exchange and its affiliated markets adopted an allocation methodology with thoughtful and consistently applied principles to guide how much of a particular cost amount allocated to the Exchange should be allocated within the Exchange to each core service. This is the final step in the cost allocation process and is applied to each of the cost drivers set forth below. For instance, fixed costs that are not driven by client activity (e.g., message rates), such as data center costs, were allocated more heavily to the provision of 10Gb ULL physical connectivity (57.7% of total expense amount allocated to 10Gb ULL connectivity), with smaller allocations to Full Service MEO Ports (1.6%) and Limited Service

MEO Ports (1.6%), and the remainder to the provision of other connectivity, other ports, transaction execution, membership services and market data services (39.1%). This next level of the allocation methodology at the individual exchange level also took into account factors similar to those set forth under the first step of the allocation methodology process described above, to determine the appropriate allocation to connectivity or market data versus allocations for other services. This allocation methodology was developed through an assessment of costs with senior management intimately familiar with each area of the Exchange's operations. After adopting this allocation methodology, the Exchange then applied an allocation of each cost driver to each core service, resulting in the cost allocations described below. Each of the below cost allocations is unique to the Exchange and represents a percentage of overall cost that was allocated to the Exchange pursuant to the initial allocation described above.

By allocating segmented costs to each core service, the Exchange was able to estimate by core service the potential margin it might earn based on different fee models. The Exchange notes that as a non-listing venue it has five primary sources of revenue that it can potentially use to fund its operations: transaction fees, fees for connectivity and port services, membership fees, regulatory fees, and market data fees. Accordingly, the Exchange must cover its expenses from these five primary sources of revenue. The Exchange also notes that as a general matter each of these sources of revenue is based on services that are interdependent. For instance, the Exchange's system for executing transactions is dependent on physical hardware and connectivity; only Members and parties that they sponsor to participate directly on the Exchange may submit orders to the Exchange; many Members (but not all) consume market data from the Exchange in order to trade on the Exchange; and the Exchange consumes market data from external sources in order to comply with regulatory obligations. Accordingly, given this interdependence, the allocation of costs to each service or revenue source required judgment of



the Exchange and was weighted based on estimates of the Exchange that the Exchange believes are reasonable, as set forth below. While there is no standardized and generally accepted methodology for the allocation of an exchange's costs, the Exchange's methodology is the result of an extensive review and analysis and will be consistently applied going forward for any other potential fee proposals. In the absence of the Commission attempting to specify a methodology for the allocation of exchanges' interdependent costs, the Exchange will continue to be left with its best efforts to attempt to conduct such an allocation in a thoughtful and reasonable manner.

Through the Exchange's extensive updated Cost Analysis, which was again recently further refined, the Exchange analyzed every expense item in the Exchange's general expense ledger to determine whether each such expense relates to the provision of connectivity and port services, and, if such expense did so relate, what portion (or percentage) of such expense actually supports the provision of connectivity and port services, and thus bears a relationship that is, "in nature and closeness," directly related to network connectivity and port services. In turn, the Exchange allocated certain costs more to physical connectivity and others to ports, while certain costs were only allocated to such services at a very low percentage or not at all, using consistent allocation methodologies as described above. Based on this analysis, the Exchange estimates that the aggregate monthly costs for connectivity and ports are as follows: \$532,820 for 10Gb ULL connectivity; \$18,872 for 1Gb connectivity; \$50,491 for Full Service MEO Ports; \$50,050 for Limited Service MEO Ports; \$13,178 for FIX Ports; \$9,158 for CTD Ports; and \$3,054 for FXD Ports (all calculations utilized the number rounded to the nearest dollar when dividing the annual cost for each type of connectivity or port by 12 months), as further detailed below.

***Costs Related to Offering Physical 1Gb and 10Gb ULL Connectivity***

The following charts detail the individual line-item costs considered by the Exchange to be related to offering physical dedicated 1Gb and 10Gb ULL connectivity as well as the

percentage of the Exchange's overall costs that such costs represent for each cost driver (e.g., as set forth below, the Exchange allocated approximately 1.2% of its overall Human Resources cost to offering 1Gb connectivity and 34.5% to offering 10Gb ULL physical connectivity).

<b>1Gb Connectivity</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$125,167	\$10,431	1.2%
Connectivity (external fees, cabling, switches, etc.)	\$522	\$44	2.0%
Internet Services and External Market Data	\$3,675	\$306	2.5%
Data Center	\$12,571	\$1,048	2.0%
Hardware and Software Maintenance and Licenses	\$9,826	\$819	2.0%
Depreciation	\$27,679	\$2,307	2.3%
Allocated Shared Expenses	\$47,021	\$3,918	1.7%
<b>TOTAL</b>	<b>\$226,461</b>	<b>\$18,872</b>	<b>1.5%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

<b>10Gb ULL Connectivity</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$3,533,950	\$294,496	34.5%
Connectivity (external fees, cabling, switches, etc.)	\$14,741	\$1,228	57.7%
Internet Services and External Market Data	\$103,750	\$8,646	69.8%
Data Center	\$354,917	\$29,576	57.7%
Hardware and Software Maintenance and Licenses	\$277,415	\$23,118	55.9%
Depreciation	\$781,473	\$65,123	63.6%
Allocated Shared Expenses	\$1,327,593	\$110,633	47%
<b>TOTAL</b>	<b>\$6,393,839</b>	<b>\$532,820</b>	<b>41.1%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering physical 1Gb and 10Gb ULL connectivity.

### *Human Resources*

The Exchange notes that it and its affiliated markets anticipate that by year-end 2024, there will be 289 employees (excluding employees at non-options/equities exchange subsidiaries of Miami International Holdings, Inc. (“MIH”), the holding company of the Exchange and its affiliated markets), and each department leader has direct knowledge of the time spent by each employee with respect to the various tasks necessary to operate the Exchange. Specifically, twice a year, and as needed with additional new hires and new project initiatives, in consultation with employees as needed, managers and department heads assign a percentage of time to every employee and then allocate that time amongst the Exchange and its affiliated markets to determine each market’s individual Human Resources expense. Then, managers and department heads assign a percentage of each employee’s time allocated to the Exchange into buckets including network connectivity, ports, market data, and other exchange services. This process ensures that every employee is 100% allocated, ensuring there is no double counting between the Exchange and its affiliated markets.

For personnel costs (Human Resources), the Exchange calculated an allocation of employee time for employees whose functions include providing and maintaining physical connectivity and performance thereof (primarily the Exchange’s network infrastructure team, which spends most of their time performing functions necessary to provide physical connectivity). As described more fully above, the Exchange’s parent company allocates costs to the Exchange and its affiliated markets and then a portion of the Human Resources costs allocated to the Exchange is then allocated to connectivity. From that portion allocated to the Exchange that applied to connectivity, the Exchange then allocated weighted averages of 49.1% for 10Gb ULL connectivity and 1.7% for 1Gb connectivity of each employee’s time from the above group.

The Exchange also allocated Human Resources costs to provide physical connectivity to a limited subset of personnel with ancillary functions related to establishing and maintaining such connectivity (such as information security, sales, membership, and finance personnel). The Exchange allocated cost on an employee-by-employee basis (i.e., only including those personnel who support functions related to providing physical connectivity) and then applied a smaller allocation to such employees' time to 10Gb ULL connectivity (18.4%) and a smaller allocation to 1Gb connectivity (0.6%). This other group of personnel with a smaller allocation of Human Resources costs also have a direct nexus to 10Gb ULL connectivity, whether it is a sales person selling a connection, finance personnel billing for connectivity or providing budget analysis, or information security ensuring that such connectivity is secure and adequately defended from an outside intrusion.

The estimates of Human Resources cost were therefore determined by consulting with such department leaders, determining which employees are involved in tasks related to providing physical connectivity, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of time such employees devote to those tasks. This includes personnel from the Exchange departments that are predominately involved in providing 1Gb and 10Gb ULL connectivity: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. Again, the Exchange allocated 49.1% for 10Gb ULL connectivity and 1.7% for 1Gb connectivity of each of their employee's time assigned to the Exchange for 10Gb ULL and 1Gb connectivity, as stated above. Employees from these departments perform numerous functions to support 10Gb ULL connectivity, such as the installation, re-location, configuration, and maintenance of 10Gb ULL connections and the hardware they access. This hardware includes servers, routers, switches, firewalls, and

monitoring devices. These employees also perform software upgrades, vulnerability assessments, remediation and patch installs, equipment configuration and hardening, as well as performance and capacity management. These employees also engage in research and development analysis for equipment and software supporting 10Gb ULL connectivity and design, and support the development and on-going maintenance of internally-developed applications as well as data capture and analysis, and Member and internal Exchange reports related to network and system performance. The above list of employee functions is not exhaustive of all the functions performed by Exchange employees to support 10Gb ULL and 1Gb connectivity, but illustrates the breadth of functions those employees perform in support of the above cost and time allocations.

Lastly, the Exchange notes that senior level executives' time was only allocated to the 10Gb ULL and 1Gb connectivity related Human Resources costs to the extent that they are involved in overseeing tasks related to providing physical connectivity. The Human Resources cost was calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost driver includes external fees paid to connect to other exchanges and third parties, cabling and switches required to operate the Exchange. The Connectivity cost driver is more narrowly focused on technology used to complete connections to the Exchange and to connect to external markets. The Exchange notes that its connectivity to external markets is required in order to receive market data to run the Exchange's matching engine and basic operations compliant with existing regulations, primarily Regulation NMS.

The Exchange relies on various connectivity providers for connectivity to the entire U.S. options industry, 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 1Gb and 10Gb ULL connectivity. Specifically, the Exchange utilizes connectivity providers to connect to other national securities exchanges and the Options Price Reporting Authority (“OPRA”). The Exchange understands that these service providers provide services to most, if not all, of the other U.S. exchanges and other market participants. Connectivity provided by these service providers is critical to the Exchange’s daily operations and performance of its System Networks to which market participants connect to via 1Gb and 10Gb ULL connectivity. Without these services 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 connectivity provider expense and recoups that expense, in part, by charging for 1Gb and 10Gb ULL connectivity.

#### ***Internet Services and External Market Data***

The next cost driver consists of Internet Services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange’s networks, primary and secondary data centers, and office locations in Princeton, New Jersey and Miami, Florida.

External market data includes fees paid to third parties, including other exchanges, to receive market data. The Exchange includes external market data fee costs towards the provisions of physical connectivity because such market data is necessary for certain services related to connectivity, including pre-trade risk checks and checks for other conditions (e.g., re-pricing of orders to avoid locked or crossed markets and trading collars). Since external market data from other exchanges is consumed at the Exchange’s matching engine level, (to which physical connectivity provides access) in order to validate orders before additional orders enter

the matching engine or are executed, the Exchange believes it is reasonable to allocate an amount of such costs to 1Gb and 10Gb ULL connectivity.

The Exchange relies on various content service providers for data feeds for the entire U.S. options industry, as well as content for critical components of the network that are necessary to provide and maintain its System Networks and access to its System Networks via 1Gb and 10Gb ULL connectivity. Specifically, the Exchange utilizes content service providers to receive market data from OPRA, other exchanges and market data providers. The Exchange understands that these service providers provide services to most, if not all, of the other U.S. exchanges and other market participants. Market data provided by these service providers is critical to the Exchange's daily operations and performance of its System Networks to which market participants connect to via 1Gb and 10Gb ULL connectivity. Without these services providers, the Exchange would not be able to receive market data and, therefore, would not be able to operate and support its System Networks. The Exchange does not employ a separate fee to cover its content service provider expense and recoups that expense, in part, by charging for 1Gb and 10Gb ULL connectivity.

### ***Data Center***

Data Center costs includes an allocation of the costs the Exchange incurs to provide physical connectivity in the third-party data centers where it maintains its equipment (such as dedicated space, security services, cooling and power). The Exchange notes that it does not own the primary data center or the secondary data center, but instead, leases space in data centers operated by third parties. The Exchange has allocated a high percentage of the total Data Center cost to physical 1Gb and 10Gb ULL connectivity (59.7% combined) because the third-party data centers and the Exchange's physical equipment contained therein is the most direct cost in providing physical access to the Exchange. In other words, for the Exchange to operate in a

dedicated space with connectivity by market participants to a physical trading platform, the data centers are a very tangible cost, and in turn, if the Exchange did not maintain such a presence then physical connectivity would be of no value to market participants.

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to operate and monitor physical assets necessary to offer physical connectivity to the Exchange. This software is necessary for the Exchange to operate its options trading platform in order to maintain premium network performance. This hardware includes servers, network switches, cables, optics, protocol data units, and cabinets, to maintain a state-of-the-art technology platform. Accordingly, the Exchange allocated a high percentage of the total Hardware and Software Maintenance and License cost to physical 1Gb and 10Gb ULL connectivity (57.9% combined) because the hardware and software licenses are the most direct cost in providing physical access to the Exchange's platform.

### ***Depreciation***

All physical assets, software, and hardware used to provide 1Gb and 10Gb ULL connectivity, which also includes assets used for testing and monitoring of Exchange infrastructure, were valued at cost, and depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which are owned by the Exchange and some of which are leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange also included in the Depreciation cost driver certain budgeted improvements that the Exchange intends to capitalize and depreciate with respect to 1Gb and 10Gb ULL connectivity in the near-term. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost was therefore narrowly tailored to depreciation related to 1Gb and 10Gb ULL connectivity. As



noted above, the Exchange allocated 63.6% of its allocated depreciation costs to providing physical 10Gb ULL connectivity and 2.3% of all depreciation costs to providing 1Gb connectivity.

### *Allocated Shared Expenses*

Finally, as with other exchange products and services, a portion of general shared expenses was allocated to overall physical connectivity costs. These general shared costs are integral to exchange operations, including its ability to provide physical connectivity. Costs included in general shared expenses include office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications. Similarly, the cost of paying directors to serve on the Exchange's Board of Directors is also included in the Exchange's general shared expense cost driver.<sup>39</sup> These general shared expenses are incurred by the Exchange's parent company, MIH, as a direct result of operating the Exchange and its affiliated markets.

The Exchange employed a process to determine a reasonable percentage to allocate general shared expenses to 1Gb and 10Gb ULL connectivity pursuant to its multi-layered allocation process. First, general expenses were allocated among the Exchange and affiliated markets as described above. Then, the general shared expense assigned to the Exchange was allocated across core services of the Exchange, including connectivity. Then, these costs were further allocated to sub-categories within the final categories, i.e., 1Gb and 10Gb ULL connectivity as sub-categories of connectivity. In determining the percentage of general shared

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<sup>39</sup> The Exchange notes that MEMX allocated a precise amount of 10% of the overall cost for directors to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26). The Exchange does not calculate its expenses at that granular a level. Instead, director costs are included as part of the overall general allocation.

expenses allocated to connectivity that ultimately apply to 1Gb and 10Gb ULL connectivity, the Exchange looked at the percentage allocations of each of the cost drivers and determined a reasonable allocation percentage. The Exchange also held meetings with senior management, department heads, and the Finance Team to determine the proper amount of the shared general expense to allocate to 1Gb and 10Gb ULL connectivity. The Exchange, therefore, believes it is reasonable to assign allocations, in the range of allocations for other cost drivers, while continuing to ensure that these expenses are only allocated once. Again, the general shared expenses are incurred by the Exchange's parent company as a result of operating the Exchange and its affiliated markets and it is therefore reasonable to allocate a percentage of those expenses to the Exchange and ultimately to specific product offerings such as 1Gb and 10Gb ULL connectivity.

Again, a portion of all shared expenses were allocated to the Exchange (and its affiliated markets) which, in turn, allocated a portion of that overall allocation to all physical connectivity on the Exchange. The Exchange then allocated 47% of the portion allocated to physical connectivity to 10Gb ULL connectivity and 1.7% of the portion allocated to physical connectivity to 1Gb connectivity. The Exchange believes these allocation percentages are reasonable because, while the overall dollar amounts may be higher than other cost drivers, the percentages are based on and in line with the percentage allocations of each of the Exchange's other cost drivers for each provision of connectivity. The percentage allocated to 10Gb ULL connectivity also reflects its importance to the Exchange's strategy and necessity towards the nature of the Exchange's overall operations, which is to provide a resilient, highly deterministic trading system that relies on faster 10Gb ULL connectivity than the Exchange's competitors to maintain premium performance. This allocation reflects the Exchange's focus on providing and maintaining high performance network connectivity, of which 10Gb ULL connectivity is a main

contributor. The Exchange intends to differentiate itself by offering a “premium-product” network experience, as an operator of a high performance, ultra-low latency network with unparalleled system throughput, which system networks can support access to four distinct options markets and multiple competing market makers having affirmative obligations to continuously quote over 1,100,000 distinct trading products (per exchange), and the capacity to handle approximately 8 million quote messages per second. The “premium-product” network experience enables users of 10Gb ULL connections to receive the network monitoring and reporting services for those approximately 1,100,000 distinct trading products. These value add services are part of the Exchange’s strategy for offering a high performance trading system, which utilizes 10Gb ULL connectivity.

The Exchange notes that the 47% allocation of general shared expenses for physical 10Gb ULL connectivity is higher than that allocated to general shared expenses for all other types of connectivity and ports. This is based on its allocation methodology that weighted costs attributable to each core service. While physical connectivity has several areas where certain tangible costs are heavily weighted towards providing such service (e.g., Data Center, as described above), other types of connectivity and ports do not require as many broad or indirect resources as other core services.

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***Approximate Cost Per 1Gb and 10Gb ULL Connection Per Month***

The Exchange divided the total monthly cost for 10Gb ULL connectivity of \$532,820 by the number of physical 10Gb ULL connections the Exchange anticipates maintaining upon expiration of the full length of the waiver period for 10Gb ULL connections at the time the proposed pricing was determined (40), to arrive at a cost of approximately \$13,321 per month (rounded to the nearest dollar), per physical 10Gb ULL connection.

Similarly, the Exchange divided the total monthly cost for 1Gb connectivity of \$18,872 by the number of physical 1Gb connections the Exchange anticipates maintaining upon expiration of the waiver period at the time the proposed pricing was determined (12), to arrive at a cost of approximately \$1,573 per month (rounded to the nearest dollar), per physical 1Gb connection.

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### ***Costs Related to Offering Full Service MEO Ports***

The following chart details the individual line-item costs considered by the Exchange to be related to offering Full Service MEO Ports as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 5.1% of its overall Human Resources cost to offering Full Service MEO Ports).

<b>Full Service MEO Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$517,369	\$43,114	5.1%
Connectivity (external fees, cabling, switches, etc.)	\$160	\$13	0.6%
Internet Services and External Market Data	\$929	\$77	0.6%
Data Center	\$9,615	\$801	1.6%
Hardware and Software Maintenance and Licenses	\$3,106	\$259	0.6%
Depreciation	\$27,745	\$2,312	2.3%
Allocated Shared Expenses	\$46,983	\$3,915	1.7%
<b>TOTAL</b>	<b>\$605,907</b>	<b>\$50,491</b>	<b>3.9%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering Full Service MEO Ports.

### ***Human Resources***

With respect to Full Service MEO Ports, the Exchange calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing Full Service MEO Ports and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). Just as described above for connectivity, the estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks related to providing Full Service MEO Ports and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing Full Service MEO Ports and maintaining performance thereof. This includes personnel from the following Exchange departments that are predominately involved in providing Full Service MEO Ports: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. The Exchange notes that senior level executives were allocated Human Resources costs to the extent they are involved in overseeing tasks specifically related to providing Full Service MEO Ports. Senior level executives were only allocated Human Resources costs to the extent that they are involved in managing personnel responsible for tasks integral to providing Full Service MEO Ports. The Human Resources cost was again calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

*Connectivity (external fees, cabling, switches, etc.)*

The Connectivity cost driver includes external fees paid to connect to other exchanges and cabling and switches, as described above.

### ***Internet Services and External Market Data***

The next cost driver consists of internet services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton and Miami. For purposes of Full Service MEO Ports, the Exchange also includes a portion of its costs related to external market data. External market data includes fees paid to third parties, including other exchanges, to receive and consume market data from other markets. The Exchange includes external market data costs towards the provision of Full Service MEO Ports because such market data is necessary (in addition to physical connectivity) to offer certain services related to such ports, such as validating orders on entry against the NBBO and checking for other conditions (e.g., halted securities).<sup>40</sup> Thus, since market data from other exchanges is consumed at the Exchange's Full Service MEO Port level in order to validate orders, before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to Full Service MEO Ports.

### ***Data Center***

Data Center costs includes an allocation of the costs the Exchange incurs to provide Full Service MEO Ports in the third-party data centers where it maintains its equipment as well as related costs for market data to then enter the Exchange's system via Full Service MEO Ports (the Exchange does not own the primary data center or secondary data center, but instead leases space in data centers operated by third parties).

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<sup>40</sup> The Exchange notes that MEMX separately allocated 7.5% of its external market data costs to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26).

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange, as described above.

### ***Depreciation***

The vast majority of the software the Exchange uses to provide Full Service MEO Ports has been developed in-house and the cost of such development, which takes place over an extended period of time and includes not just development work, but also quality assurance and testing to ensure the software works as intended, is depreciated over time once the software is activated in the production environment. Hardware used to provide Full Service MEO Ports includes equipment used for testing and monitoring of order entry infrastructure and other physical equipment the Exchange purchased and is also depreciated over time.

All hardware and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 2.3% of all depreciation costs to providing Full Service MEO Ports. The Exchange allocated depreciation costs for depreciated software necessary to operate the Exchange to Full Service MEO Ports because such software is related to the provision of Full Service MEO Ports. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost driver was therefore narrowly tailored to depreciation related to Full Service MEO Ports.

### ***Allocated Shared Expenses***

Finally, a portion of general shared expenses was allocated to overall Full Service MEO Port costs as without these general shared costs the Exchange would not be able to operate in the

manner that it does and provide application sessions. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 4% of the overall cost for directors was allocated to providing Full Service MEO Ports. The Exchange notes that the 1.7% allocation of general shared expenses for Full Service MEO Ports is lower than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While Full Service MEO Ports have several areas where certain tangible costs are heavily weighted towards providing such service (e.g., data centers, as described above), 10Gb ULL connectivity requires a broader level of support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange.

\* \* \* \* \*

***Approximate Cost Per Full Service MEO Port Per Month***

The Exchange divided the total monthly cost for Full Service MEO Ports of \$50,491 by the number of Full Service MEO Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (112), to arrive at a cost of approximately \$451 per month (rounded to the nearest dollar), per Full Service MEO Port.

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***Costs Related to Offering Limited Service MEO Ports***



The following chart details the individual line-item costs considered by the Exchange to be related to offering Limited Service MEO Ports as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 5% of its overall Human Resources cost to offering Limited Service MEO Ports).

<b>Limited Service MEO Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$512,844	\$42,737	5%
Connectivity (external fees, cabling, switches, etc.)	\$158	\$13	0.6%
Internet Services and External Market Data	\$921	\$77	0.6%
Data Center	\$9,531	\$794	1.6%
Hardware and Software Maintenance and Licenses	\$3,079	\$256	0.6%
Depreciation	\$27,503	\$2,292	2.2%
Allocated Shared Expenses	\$46,572	\$3,881	1.7%
<b>TOTAL</b>	<b>\$600,608</b>	<b>\$50,050</b>	<b>3.9%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering Limited Service MEO Ports.

### ***Human Resources***

With respect to Limited Service MEO Ports, the Exchange calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing Limited Service MEO Ports and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). Just as described above for connectivity, the estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks

related to providing Limited Service MEO Ports and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing Limited Service MEO Ports and maintaining performance thereof. This includes personnel from the following Exchange departments that are predominately involved in providing Limited Service MEO Ports: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. The Exchange notes that senior level executives were allocated Human Resources costs to the extent they are involved in overseeing tasks specifically related to providing Limited Service MEO Ports. Senior level executives were only allocated Human Resources costs to the extent that they are involved in managing personnel responsible for tasks integral to providing and maintaining Limited Service MEO Ports. The Human Resources cost was again calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost includes external fees paid to connect to other exchanges and cabling and switches, as described above.

***Internet Services and External Market Data***

The next cost driver consists of internet services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton and Miami. For purposes of Limited Service MEO Ports, the Exchange also includes a portion of its costs related to external market data. External market data includes fees paid to third parties, including other exchanges, to receive and consume market data from

other markets. The Exchange includes external market data costs towards the provision of Limited Service MEO Ports because such market data is necessary (in addition to physical connectivity) to offer certain services related to such ports, such as validating orders on entry against the NBBO and checking for other conditions (e.g., halted securities).<sup>41</sup> Thus, since market data from other exchanges is consumed at the Exchange's Limited Service MEO Port level in order to validate orders, before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to Limited Service MEI MEO.

### ***Data Center***

Data Center costs includes an allocation of the costs the Exchange incurs to provide Limited Service MEO Ports in the third-party data centers where it maintains its equipment as well as related costs for market data to then enter the Exchange's System via Limited Service MEO Ports (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).

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange, as described above.

### ***Depreciation***

The vast majority of the software the Exchange uses to provide Limited Service MEO Ports has been developed in-house and the cost of such development, which takes place over an extended period of time and includes not just development work, but also quality assurance and testing to ensure the software works as intended, is depreciated over time once the software is

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<sup>41</sup> The Exchange notes that MEMX separately allocated 7.5% of its external market data costs to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26).

activated in the production environment. Hardware used to provide Limited Service MEO Ports includes equipment used for testing and monitoring of order entry infrastructure and other physical equipment the Exchange purchased and is also depreciated over time.

All hardware and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 2.2% of all depreciation costs to providing Limited Service MEO Ports. The Exchange allocated depreciation costs for depreciated software necessary to operate the Exchange because such software is related to the provision of Limited Service MEO Ports. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost driver was therefore narrowly tailored to depreciation related to Limited Service MEO Ports.

#### *Allocated Shared Expenses*

Finally, a portion of general shared expenses was allocated to overall Limited Service MEO Port costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide Limited Service MEO Ports. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 4% of the overall cost for directors was allocated to providing Limited Service MEO

Ports. The Exchange notes that the 1.7% allocation of general shared expenses for Limited Service MEO Ports is lower than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While Limited Service MEO Ports have several areas where certain tangible costs are heavily weighted towards providing such service (e.g., data center, as described above), Limited Service MEO Ports require a broader level of support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange.

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***Approximate Cost Per Limited Service MEO Port Per Month***

The Exchange divided the total monthly cost for Limited Service MEO Ports of \$50,050 by the number of Limited Service MEO Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (208, for charged ports, without the cap on the number of Limited Service MEO Ports), to arrive at a cost of approximately \$241 per month (rounded to the nearest dollar), per Limited Service MEO Port.

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***Costs Related to Offering FIX, CTD and FXD Ports***

The following charts detail the individual line-item costs considered by the Exchange to be related to offering FIX, CTD and FXD Ports as well as the percentage of the Exchange’s overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 1.3%, 0.9%, and 0.3% of its overall Human Resources cost to offering FIX Ports, CTD Ports, and FXD Ports, respectively).

<b>FIX Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>

Human Resources	\$135,037	\$11,253	1.3%
Connectivity (external fees, cabling, switches, etc.)	\$42	\$4	0.2%
Internet Services and External Market Data	\$243	\$20	0.2%
Data Center	\$2,510	\$209	0.4%
Hardware and Software Maintenance and Licenses	\$811	\$66	0.2%
Depreciation	\$7,242	\$604	0.6%
Allocated Shared Expenses	\$12,263	\$1,022	0.4%
<b>TOTAL</b>	<b>\$158,148</b>	<b>\$13,178</b>	<b>1%</b>
<p>a. The Annual Cost includes figures rounded to the nearest dollar.</p> <p>b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.</p>			

<b>CTD Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$93,848	\$7,821	0.9%
Connectivity (external fees, cabling, switches, etc.)	\$29	\$2	0.1%
Internet Services and External Market Data	\$169	\$14	0.1%
Data Center	\$1,744	\$145	0.3%
Hardware and Software Maintenance and Licenses	\$563	\$47	0.1%
Depreciation	\$5,033	\$419	0.4%
Allocated Shared Expenses	\$8,522	\$710	0.3%
<b>TOTAL</b>	<b>\$109,908</b>	<b>\$9,158</b>	<b>0.7%</b>
<p>a. The Annual Cost includes figures rounded to the nearest dollar.</p> <p>b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.</p>			

<b>FXD Ports</b>			
<b>COST DRIVERS</b>	<b>ALLOCATED ANNUAL COST<sup>a</sup></b>	<b>ALLOCATED MONTHLY COST<sup>b</sup></b>	<b>% OF ALL</b>
Human Resources	\$31,283	\$2,607	0.3%
Connectivity (external fees, cabling, switches, etc.)	\$10	\$1	0.04%
Internet Services and External Market Data	\$56	\$5	0.04%
Data Center	\$581	\$48	0.1%
Hardware and Software Maintenance and Licenses	\$188	\$16	0.04%
Depreciation	\$1,678	\$140	0.1%

Allocated Shared Expenses	\$2,841	\$237	0.1%
<b>TOTAL</b>	<b>\$36,637</b>	<b>\$3,054</b>	<b>0.2%</b>
a. The Annual Cost includes figures rounded to the nearest dollar. b. The Monthly Cost was determined by dividing the Annual Cost for each line item by twelve (12) months and rounding up or down to the nearest dollar.			

Below are additional details regarding each of the line-item costs considered by the Exchange to be related to offering FIX, CTD and FXD Ports.

### *Human Resources*

With respect to FIX, CTD and FXD Ports, the Exchange calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing FIX, CTD and FXD Ports and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). Just as described above for connectivity, the estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks related to providing FIX, CTD and FXD Ports and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing FIX, CTD and FXD Ports and maintaining performance thereof. This includes personnel from the following Exchange departments that are predominately involved in providing FIX, CTD and FXD Ports: Business Systems Development, Trading Systems Development, Systems Operations and Network Monitoring, Network and Data Center Operations, Listings, Trading Operations, and Project Management. The Exchange notes that senior level executives were allocated Human Resources costs to the extent they are involved in overseeing tasks specifically related to providing FIX, CTD and FXD Ports. Senior level executives were only allocated Human

Resources costs to the extent that they are involved in managing personnel responsible for tasks integral to providing and maintaining FIX, CTD and FXD Ports. The Human Resources cost was again calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

Lastly, the Exchange notes that the Human Resource allocations for Full Service MEO Ports and Limited Service MEO Ports are greater than the Human Resource allocations for FIX, CTD and FXD Ports. For its Human Resource cost driver, the Exchange allocated 5.1% to Full Service MEO Ports, 5% to Limited Service MEO Ports, 1.3% to FIX Ports, 0.9% to CTD Ports, and 0.3% to FXD Ports. This is because the MEO interface is a customized binary interface that the Exchange developed in-house and maintains on its own. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. Likewise, the CTD and FXD interfaces only provide information concerning clearing trade updates and trade execution, respectively, which also require less development, maintenance and support than the MEO interface. The MEO interface is performance oriented and designed to meet the needs of more latency sensitive Members. Due to the in-house development of the MEO interface, the Exchange was required to expend more internal personnel to support the MEO interface than the FIX, CTD or FXD interfaces. Because of the materially higher cost associated with maintaining and supporting MEO Ports (Full Service and Limited Service) versus FIX, CTD and FXD Ports, the Exchange allocates a materially higher percentage of Human Resource expense to MEO Ports versus FIX, CTD and FXD Ports.

***Connectivity (external fees, cabling, switches, etc.)***

The Connectivity cost includes external fees paid to connect to other exchanges and cabling and switches, as described above.

***Internet Services and External Market Data***



The next cost driver consists of internet services and external market data. Internet services includes third-party service providers that provide the internet, fiber and bandwidth connections between the Exchange's networks, primary and secondary data centers, and office locations in Princeton and Miami. For purposes of FIX, CTD and FXD Ports, the Exchange also includes a portion of its costs related to external market data. External market data includes fees paid to third parties, including other exchanges, to receive and consume market data from other markets. The Exchange includes external market data costs towards the provision of FIX, CTD and FXD Ports because such market data is necessary (in addition to physical connectivity) to offer certain services related to such ports, such as validating orders on entry against the NBBO and checking for other conditions (e.g., halted securities).<sup>42</sup> Thus, as market data from other exchanges is consumed at the port level in order to validate orders before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to FIX, CTD and FXD Ports.

### ***Data Center***

Data Center costs includes 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 for market data to then enter the Exchange's System via FIX, CTD and FXD Ports (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).

### ***Hardware and Software Maintenance and Licenses***

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange, as described above.

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<sup>42</sup> The Exchange notes that MEMX separately allocated 7.5% of its external market data costs to providing physical connectivity. See Securities Exchange Act Release No. 95936 (September 27, 2022), 87 FR 59845 (October 3, 2022) (SR-MEMX-2022-26).

### ***Depreciation***

The vast majority of the software the Exchange uses to provide FIX, CTD and FXD Ports has been developed in-house and the cost of such development, which takes place over an extended period of time and includes not just development work, but also quality assurance and testing to ensure the software works as intended, is depreciated over time once the software is activated in the production environment. Hardware used to provide FIX, CTD and FXD Ports includes equipment used for testing and monitoring of order entry infrastructure and other physical equipment the Exchange purchased and is also depreciated over time.

All hardware and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 0.6%, 0.4% and 0.1% of all depreciation costs to providing FIX, CTD and FXD Ports, respectively. The Exchange allocated depreciation costs for depreciated software necessary to operate the Exchange because such software is related to the provision of FIX, CTD and FXD Ports. As with the other allocated costs in the Exchange's updated Cost Analysis, the Depreciation cost driver was therefore narrowly tailored to depreciation related to FIX, CTD and FXD Ports.

Lastly, the Exchange notes that the Depreciation allocations for MEO Ports (Full Service and Limited Service) are greater than the Depreciation allocations for FIX, CTD and FXD Ports. For its Depreciation cost driver, the Exchange allocated 2.3% to Full Service MEO Ports, 2.2% to Limited Service MEO Ports, 0.6% to FIX Ports, 0.4% to CTD Ports, and 0.1% to FXD Ports. As discussed above, this is because the MEO interface is a customized binary interface that the

Exchange developed in-house and maintains on its own. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. Likewise, the CTD and FXD interfaces only provide information concerning clearing trade updates and trade execution, respectively, which also require less development, maintenance and support than the MEO interface. The Exchange maintains more dedicated hardware per port for the MEO interface compared to the FIX, CTD and FXD interfaces. As a result, the MEO interface is supported by more dedicated in-house hardware and software than the FIX, CTD and FXD interfaces that is subject to depreciation. Thus, there is a greater amount of equipment supporting the MEO interface than the FIX, CTD and FXD interfaces, resulting in higher depreciation costs.

#### *Allocated Shared Expenses*

Finally, a portion of general shared expenses was allocated to overall FIX, CTD and FXD Port costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide FIX, CTD and FXD Ports. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 2% of the overall cost for directors was allocated to providing FIX, CTD and FXD Ports. The Exchange notes that the 0.4%, 0.3% and 0.1% allocations of general shared expenses for FIX, CTD and FXD Ports, respectively, are lower than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based

on an understanding of each area. While MEO Ports (Full Service and Limited Service) have several areas where certain tangible costs are heavily weighted towards providing such service (e.g., data center, as described above), FIX, CTD and FXD Ports require a broader level of support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange.

Lastly, the Exchange notes that the Allocated Shared Expense allocations for MEO Ports (Full Service and Limited Service) are greater than the same allocations for FIX, CTD and FXD Ports. For its Allocated Shared Expense cost driver, the Exchange allocated 1.7% to Full Service MEO Ports, 1.7% to Limited Service MEO Ports, 0.4% to FIX Ports, 0.3% to CTD Ports, and 0.1% to FXD Ports. As discussed above, this is because the MEO interface is a customized binary interface that the Exchange developed in-house and maintains on its own. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. Likewise, the CTD and FXD interfaces only provide information concerning clearing trade updates and trade execution, respectively, which also require less development, maintenance and support than the MEO interface. The FIX interface is the industry standard for simple order entry which requires less development, maintenance, and support than the MEO interface. The MEO interface is performance oriented and designed to meet the needs of more latency sensitive Members. This required more internal personnel and resources to support than the FIX, CTD and FXD interfaces. Because of the materially higher cost associated with maintaining and supporting MEO Ports versus FIX, CTD and FXD Ports, the Exchange allocates a materially higher percentage of Allocated Shared expense to MEO Ports versus FIX, CTD and FXD Ports, which are less complex, standardized solutions.

***Approximate Cost Per FIX, CTD and FXD Port Per Month***

The Exchange divided the total monthly cost for FIX Ports of \$13,178 by the number of FIX Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (25), to arrive at a cost of approximately \$527 per month (rounded to the nearest dollar), per FIX Port.

Similarly, the Exchange divided the total monthly cost for CTD Ports of \$9,158 by the number of CTD Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (10), to arrive at a cost of approximately \$916 per month (rounded to the nearest dollar), per CTD Port.

Finally, the Exchange divided the total monthly cost for FXD Ports of \$3,054 by the number of FXD Ports the Exchange anticipates maintaining upon expiration of the Initial Waiver Period at the time the proposed pricing was determined (6), to arrive at a cost of approximately \$509 per month (rounded to the nearest dollar), per FXD Port.

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***Cost Analysis – Additional Discussion***

In conducting its Cost Analysis, the Exchange did not allocate any of its expenses in full to any core services (including physical connectivity or ports) and did not double-count any expenses. Instead, as described above, the Exchange allocated applicable cost drivers across its core services and used the same Cost Analysis to form the basis of this proposal and the separate filings the Exchange submitted (or plans to submit) proposing fees for proprietary market data feeds offered by the Exchange, as well as for Purge Ports. For instance, in calculating the Human Resources expenses to be allocated to physical connections based upon the above described methodology, the Exchange has a team of employees dedicated to network infrastructure and with respect to such employees the Exchange allocated network infrastructure

personnel with a high percentage of the cost of such personnel (49.1%) given their focus on functions necessary to provide 10Gb ULL physical connections. The salaries of those same personnel were allocated only 6.8% to Full Service MEO Ports and 6.7% to Limited Service MEO Ports and the remaining 37.4% was allocated to 1Gb connectivity, other port services, transaction services, membership services and market data. The Exchange did not allocate any other Human Resources expense for providing physical connections to any other employee group, outside of a smaller allocation of 18.4% for 10Gb ULL connectivity and 0.6% for 1Gb ULL, of the cost associated with certain specified personnel who work closely with and support network infrastructure personnel. In contrast, the Exchange allocated much smaller percentages of costs (3.1% for Full Service MEO Ports and 0.6% for Limited Service MEO Ports) across a wider range of personnel groups in order to allocate Human Resources costs to providing Full Service MEO Ports and Limited Service MEO Ports (0.2% for FIX Ports, 0.1% for CTD Ports, and 0.04% for FXD Ports). This is because a much wider range of personnel are involved in functions necessary to offer, monitor and maintain Full Service MEO Ports and Limited Service MEO Ports but the tasks necessary to do so are not a primary or full-time function.

In total, the Exchange allocated 35.7% of its personnel costs to providing 10Gb ULL and 1Gb ULL connectivity, 5.1% of its personnel costs to providing Full Service MEO Ports, 5% of its personnel costs to providing Limited Service MEO Ports, 1.3% of its personnel costs to providing FIX Ports, 0.9% of its personnel costs to providing CTD Ports, and 0.3% of its personnel costs to providing FXD Ports, for a total allocation of 48.3% Human Resources expense to provide these specific connectivity and port services. In turn, the Exchange allocated the remaining 51.7% of its Human Resources expense to membership services, transaction services, other port services and market data. Thus, again, the Exchange's allocations of cost across core services were based on real costs of operating the Exchange and were not double-

counted across the core services or their associated revenue streams.

As another example, the Exchange allocated depreciation expense to all core services, including physical connections and ports, but in different amounts. 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. Without this equipment, the Exchange would not be able to operate the network and provide connectivity and port services to its Members and non-Members and their customers. However, the Exchange did not allocate all of the depreciation and amortization expense toward the cost of providing connectivity services, but instead allocated approximately 65.9% of the Exchange's overall depreciation and amortization expense to connectivity services (63.6% attributed to 10Gb ULL physical connections, 2.3% to 1Gb physical connections, and 5.6% attributed to Full Service MEO Ports, Limited Service MEO Ports, FIX Ports, CTD Ports, and FXD Ports, combined). The Exchange allocated the remaining depreciation and amortization expense (approximately 28.5%) toward the cost of providing transaction services, membership services, other port services, and market data.

The Exchange notes that its revenue estimates are based on projections across all potential revenue streams and will only be realized to the extent such revenue streams actually produce the revenue estimated once the waiver periods expire for each applicable proposed fee. The Exchange does not yet know whether such expectations will be realized. For instance, in order to generate the revenue expected from connectivity, the Exchange will have to be successful in retaining existing clients that wish to maintain physical connectivity and/or ports or in obtaining new clients that will purchase such services. Similarly, the Exchange will have to

be successful in retaining a positive net capture on transaction fees in order to realize the anticipated revenue from transaction pricing.

The Exchange notes that personnel began to plan for and develop the Exchange beginning in early 2023, and costs included in this Cost Analysis are related to the development and buildout of the Exchange since that time. During the Exchange's development and buildout that occurred throughout 2023 and continues to today, the Exchange routinely studied its aggregate costs to provide connectivity and port services, which were used to determine the proposed pricing for the provisions of connectivity and port services that are part of the Exchange's Cost Analysis, including projections. It is possible, however, that actual costs may be higher or lower. To the extent the Exchange sees growth in use of connectivity or port services it will receive additional revenue to offset future cost increases. However, if use of connectivity or port services is static or decreases, the Exchange might not realize the revenue that it anticipates or needs in order to cover applicable costs. Accordingly, the Exchange is committing to conduct a one-year review after implementation of these fees. The Exchange expects that it may propose to adjust fees at that time, to increase fees in the event that revenues fail to cover costs and a reasonable mark-up of such costs. Similarly, the Exchange may propose to decrease fees in the event that revenue materially exceeds our current projections. In addition, the Exchange will periodically conduct a review to inform its decision making on whether a fee change is appropriate (e.g., to monitor for costs increasing/decreasing or subscribers increasing/decreasing, etc. in ways that suggest the then-current fees are becoming dislocated from the prior cost-based analysis) and would propose to increase fees in the event that revenues fail to cover its costs and a reasonable mark-up, or decrease fees in the event that revenue or the mark-up materially exceeds our current projections. In the event that the Exchange determines to propose a fee change, the results of a timely review, including an updated cost estimate, will be



included in the rule filing proposing the fee change. More generally, the Exchange believes that it is appropriate for an exchange to refresh and update information about its relevant costs and revenues in seeking any future changes to fees, and the Exchange commits to do so.

### ***Projected Revenue***

The proposed fees will allow the Exchange to cover certain costs incurred by the Exchange associated with providing and maintaining necessary hardware and other network infrastructure as well as network monitoring and support services; without such hardware, infrastructure, monitoring and support the Exchange would be unable to provide the connectivity and port services. Much of the cost relates to monitoring and analysis of data and performance of the network via the subscriber's connection(s). The above costs, namely those associated with hardware, software, and human capital, enable the Exchange to measure network performance with nanosecond granularity. These same costs are also associated with time and money spent seeking to continuously improve the network performance, improving the subscriber's experience, based on monitoring and analysis activity. The Exchange routinely works to improve the performance of the network's hardware and software. The costs associated with maintaining and enhancing a state-of-the-art exchange network is a significant expense for the Exchange, and thus the Exchange believes that it is reasonable and appropriate to help offset those costs by amending fees for connectivity services. Subscribers, particularly those of 10Gb ULL connectivity, expect the Exchange to provide this level of support to connectivity so they continue to receive the performance they expect. This differentiates the Exchange from its competitors. As detailed above, the Exchange has five primary sources of revenue that it can potentially use to fund its operations: transaction fees, fees for connectivity services, membership and regulatory fees, and market data fees. Accordingly, the Exchange must cover its expenses from these five primary sources of revenue.

All revenue projections are based upon an annual return for each of the proposed fees once the relevant waiver periods expire.

The Exchange's Cost Analysis estimates the annual cost to provide 1Gb connectivity services will equal \$226,461. Based on projected 1Gb connectivity services usage, the Exchange would generate annual revenue of approximately \$241,200. The Exchange believes this represents a modest profit of 6.1% when compared to the cost of providing 1Gb connectivity services.

The Exchange's Cost Analysis estimates the annual cost to provide 10Gb ULL connectivity services will equal \$6,393,839. Based on projected 10Gb ULL connectivity services usage, the Exchange would generate annual revenue of approximately \$6,810,000. The Exchange believes this represents a modest profit of 6.1% when compared to the cost of providing 10Gb connectivity services.

The Exchange's Cost Analysis estimates the annual cost to provide Full Service MEO Port services will equal \$605,907. Based on projected Full Service MEO Port service usage, the Exchange would generate annual revenue of approximately \$399,000. The Exchange believes this represents a loss of 51.9% when compared to the cost of providing Full Service MEO Port services.

The Exchange's Cost Analysis estimates the annual cost to provide Limited Service MEO Port services will equal \$600,608. Since launch, taking into account the proposal to remove the cap on the number of Limited Service MEO Ports available and based on projected Limited Service MEO Port service usage, the Exchange would generate annual revenue of approximately \$624,000. The Exchange believes this represents a modest profit of 3.7% for providing Limited Service MEO Port services.

The Exchange's Cost Analysis estimates the annual cost to provide FIX Port services will equal \$158,148. Based on projected FIX Port service usage, the Exchange would generate annual revenue of approximately \$77,700. The Exchange estimates that its costs to provide FIX Port services will exceed its revenues by 103.5%.

The Exchange's Cost Analysis estimates the annual cost to provide CTD Port services will equal \$109,908. Based on projected CTD Port service usage, the Exchange would generate annual revenue of approximately \$54,000. The Exchange estimates that its costs to provide CTD Port services will exceed its revenues by 103.5%.

The Exchange's Cost Analysis estimates the annual cost to provide FXD Port services will equal \$36,637. Based on projected FXD Port service usage, the Exchange would generate annual revenue of approximately \$18,000. The Exchange estimates that its costs FXD Port services will exceed its revenues by 103.5%.

Based on the above discussion, the Exchange believes that even if the Exchange earns the above revenue or incrementally more or less, the proposed fees are fair and reasonable because they will not result in pricing that deviates from that of other exchanges or a supra-competitive profit, when comparing the total expense of the Exchange associated with providing each of the proposed connectivity and port services versus the total projected revenue of the Exchange associated with connectivity and port services. The Exchange's affiliated options markets recently filed to raise certain connectivity and port fees to the same, or similar, rates as proposed herein and those filings were not suspended by the Commission.<sup>43</sup>

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<sup>43</sup> See Securities Exchange Act Release Nos. 99822 (March 21, 2024), 89 FR 21337 (March 27, 2024) (SR-MIAX-2024-16) (raising monthly 10Gb ULL connectivity fee to \$13,500 per connection and raising fee for Limited Service MEI Ports to \$275 per month per port); 99823 (March 21, 2024), 89 FR 21312 (March 27, 2024) (SR-PEARL-2024-14) (raising monthly 10Gb ULL connectivity fee to \$13,500 per connection and establishing tiered fees for Full Service MEO Ports ranging from \$5,000 to \$12,000 per month); and 99824 (March 21, 2024), 89 FR 21379 (March 27, 2024) (SR-EMERALD-2024-12) (raising monthly 10Gb ULL

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The Exchange notes that its revenue estimate is based on projections and will only be realized to the extent customer activity produces the revenue estimated. As a competitor in the hyper-competitive exchange environment, and an exchange focused on driving competition, the Exchange does not yet know whether such projections will be realized. For instance, in order to generate the revenue expected from 10Gb ULL connectivity and Ports, the Exchange will have to be successful in retaining existing clients that wish to utilize 10Gb ULL connectivity and Ports and/or obtaining new clients that will purchase such access. To the extent the Exchange is successful in encouraging new clients to utilize 10Gb ULL connectivity and Ports, the Exchange does not believe it should be penalized for such success. To the extent the Exchange has mispriced and experiences a net loss in connectivity clients or in transaction activity, the Exchange could experience a net reduction in revenue. While the Exchange is supportive of transparency around costs and potential margins (applied across all exchanges), as well as periodic review of revenues and applicable costs (as discussed below), 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 – or seeking to earn – supra-competitive profits. The Exchange believes the Cost Analysis and related projections in this filing demonstrate this fact.

The Exchange is owned by a holding company that is the parent company of five exchange markets and, therefore, the Exchange and its affiliated markets must allocate shared costs across all of those markets accordingly, pursuant to the above-described allocation

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connectivity fee to \$13,500 per connection and raising fee for Limited Service MEI Ports to \$420 per month per port).

methodology. In contrast, the IEX, which currently operates only one exchange, and MEMX, which just started operating two exchanges, in their recent non-transaction fee filings allocate the entire amount of that same cost to a single exchange. This can result in lower profit margins for the non-transaction fees established by IEX and MEMX because the single allocated cost does not experience the efficiencies and synergies that result from sharing costs across multiple exchanges. The Exchange and its affiliated markets often share a single cost, which results in cost efficiencies that can cause a broader gap between the allocated cost amount and projected revenue, even though the fee levels being proposed are lower or competitive with competing markets (as described above). To the extent that the application of a cost-based standard results in Commission Staff making determinations as to the appropriateness of certain profit margins, the Exchange believes that Commission Staff should also consider whether the proposed fee level is comparable to, or competitive with, the same fee charged by competing exchanges and how different cost allocation methodologies (such as across multiple markets) may result in different profit margins for comparable fee levels. Further, if Commission Staff is making determinations as to appropriate profit margins in their approval of exchange fees, the Exchange believes that the Commission should be clear to all market participants as to what they have determined is an appropriate profit margin and should apply such determinations consistently and, in the case of certain legacy exchanges, retroactively, if such standards are to avoid having a discriminatory effect.

Further, as is reflected in the proposal, the Exchange continuously and aggressively works to control its costs as a matter of good business practice. A potential profit margin should not be evaluated solely on its size; that assessment should also consider cost management and whether the ultimate fee reflects the value of the services provided. For example, a profit margin on one exchange should not be deemed excessive where that exchange has been successful in

controlling its costs, but not excessive on another exchange where that exchange is charging comparable fees but has a lower profit margin due to higher costs. Doing so could have the perverse effect of not incentivizing cost control where higher costs alone could be used to justify fees increases.

The Proposed Pricing is not Unfairly Discriminatory and Provides for the Equitable Allocation of Fees, Dues, and other Charges

The Exchange believes that the proposed fees for connectivity and ports are reasonable, fair, equitable, and not unfairly discriminatory because they are designed to align fees with services provided and will apply equally to all subscribers.

*Connectivity*

The Exchange believes that the proposed fees are equitably allocated among anticipated users of the network connectivity and port alternatives, as the Exchange expects that users of 10Gb ULL connections will consume substantially more bandwidth and network resources than users of 1Gb ULL connection. It is the experience of the Exchange's affiliates that this is the case as 10Gb ULL connection users account for more than 99% of message traffic over the network on those markets, which drives other costs that are linked to capacity utilization, as described above, while the users of the 1Gb ULL connections account for less than 1% of message traffic over the network. In the experience of the Exchange's affiliates, users of the 1Gb connections do not have the same business needs for the high-performance network as 10Gb ULL users.

The Exchange's high-performance network and supporting infrastructure (including employee support), will provide unparalleled system throughput with the network ability to support access to several distinct options markets. 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 will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities, just as they do for the Exchange's affiliate markets. The Exchange must then purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages to satisfy its record keeping requirements under the Exchange Act.<sup>44</sup> Thus, as the number of messages an entity increases, certain other costs incurred by the Exchange that are correlated to, though not directly affected by, connection costs (e.g., storage costs, surveillance costs, service expenses) will likely also increase. Given this anticipated 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 market participants' will benefit.

#### *Full Service MEO Ports*

The proposed fees for Full Service MEO Ports are not unfairly discriminatory because they would apply to all Market Makers equally. The Exchange proposes a pricing structure for Full Service MEO Ports that is the same as that used by the Exchange's affiliates, MIAX, MIAX Pearl, and MIAX Emerald, except with lower pricing for each tier.<sup>45</sup> In the experience of the Exchange's affiliated markets, Members that are frequently in the highest tier for Full Service MEO/MEI Ports consume the most bandwidth and resources of the network. For example, the Exchange's affiliate, MIAX Pearl, recently noted that Market Makers who reach the highest tier for Full Service MEO Ports accounted for greater than 84% of ADV on MIAX Pearl, while Market Makers that are typically in the lowest Tier for Full Service MEO Ports, accounted for

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<sup>44</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

<sup>45</sup> See MIAX Fee Schedule, Section 5)d)ii), MIAX Pearl Fee Schedule, Section 5)d), and MIAX Emerald Fee Schedule, Section 5)d)ii).

less than 14% of ADV on the Exchange.<sup>46</sup> Further, as noted by MIA X Pearl, the remaining 1% was accounted for by Market Makers who are frequently in the middle Tier for Full Service MEO Ports.<sup>47</sup>

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 during anticipated peak market conditions. The need to support billions of messages per day will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. The Exchange may have to purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of its surveillance program and to satisfy its record keeping requirements under the Exchange Act.<sup>48</sup> Thus, as the number of connections a Market Maker has increases, the related pull on Exchange resources may also increase once the Exchange launches operations. The Exchange sought to design the proposed tiered-pricing structure to set the amount of the fees to relate to the number of ports a firm purchases. The more ports purchased by a Market Maker likely results in greater expenditure of Exchange resources and increased cost to the Exchange.

The Exchange further believes that the proposed fees are reasonable, equitably allocated and not unfairly discriminatory because, for the flat fee in each tier, the Exchange provides each Member two (2) Full Service MEO Ports for each matching engine to which that Member is connected. Unlike other options exchanges that provide similar port functionality and charge

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<sup>46</sup> See Securities Exchange Act Release No. 99823 (March 21, 2024), 89 FR 21312 (March 27, 2024) (SR-PEARL-2024-14).

<sup>47</sup> Id.

<sup>48</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).



fees on a per port basis,<sup>49</sup> the Exchange offers Full Service MEO Ports as a package and provides Market Makers with the option to receive up to two Full Service MEO Ports per matching engine to which it connects. The Exchange currently has eight matching engines, which means Market Makers may receive up to sixteen Full Service MEO Ports for a single monthly fee, that can vary based on certain volume percentages or classes the Market Maker is registered in. Assuming a Market Maker connects to all eight matching engines during the month, and achieves the highest Tier for that month, with two Full Service MEO Ports per matching engine, this would result in a cost of \$375 per Full Service MEO Port (\$6,000 divided by 16).

The Exchange believes its proposal to provide a reduced Full Service MEO Port fee to Market Makers that fall within the 3<sup>rd</sup> and 4<sup>th</sup> levels of the proposed fee table is not unfairly discriminatory because this proposed lower monthly fee is designed to provide a lower fixed cost to those Market Makers who are willing to quote the entire Exchange market (or substantial amount of the Exchange market), as objectively measured by either number of classes assigned or national ADV, but who do not otherwise execute a significant amount of volume on the Exchange. The Exchange believes that, by offering lower fixed costs to Market Makers that execute less volume, the Exchange will retain and attract smaller-scale Market Makers, which are an integral component of the option industry marketplace, but have been decreasing in number in recent years, due to industry consolidation and lower market maker profitability. The Exchange believes it is beneficial to incentivize these additional Market Makers to register to make markets on the Exchange to increase liquidity as the Exchange begins operations.

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<sup>49</sup> See NASDAQ Pricing Schedule, Options 7, Section 3, Ports and Other Services and NASDAQ Rules, General 8: Connectivity, Section 1. Co-Location Services (similar to the MIA X Pearl Options' MEO Ports, SQF ports are primarily utilized by Market Makers); ISE Pricing Schedule, Options 7, Section 7, Connectivity Fees and ISE Rules, General 8: Connectivity; NYSE American Options Fee Schedule, Section V.A. Port Fees and Section V.B. Co-Location Fees; GEMX Pricing Schedule, Options 7, Section 6, Connectivity Fees and GEMX Rules, General 8: Connectivity.

Increased liquidity from a diverse set of market participants helps facilitate price discovery and the interaction of orders, which benefits all market participants of the Exchange. Since these smaller-scale Market Makers may utilize less Exchange capacity due to lower overall volume executed, the Exchange believes it is reasonable, equitably allocated and not unfairly discriminatory to offer such Market Makers a lower fixed cost. The Exchange notes that its affiliated markets, MIAX, MIAX Pearl, and MIAX Emerald, offer a similar reduced fee for their Full Service MEO/MEI Ports for smaller-scale Market Makers.<sup>50</sup>

*Limited Service MEO Ports*

The proposed fees for Limited Service MEO Ports are not unfairly discriminatory because they would apply to all Market Makers equally. All Market Makers will be eligible to receive four (4) free Limited Service MEO Ports per matching engine and those that elect to purchase more would be subject to the same monthly rate upon the expiration of the Initial Waiver Period, regardless of the number of additional Limited Service MEO Ports they purchase. In the experience of the Exchange's affiliated markets, certain market participants choose to purchase additional Limited Service MEO Ports based on their own particular trading/quoting strategies and feel they need a certain number of connections to the Exchange to execute on those strategies. Other market participants may continue to choose to only utilize the free Limited Service MEO Ports to accommodate their own trading or quoting strategies, or other business models. All market participants elect to receive or purchase the amount of Limited Service MEO Ports they require based on their own business decisions and all market participants would be subject to the same fee structure and flat fee. Every market participant may receive up to four (4) free Limited Service MEO Ports and those that choose to purchase

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<sup>50</sup> See MIAX Fee Schedule, Section 5)d)ii), note “\*”; MIAX Pearl Fee Schedule, Section 5)d), page 20, note “\*”; and MIAX Emerald Fee Schedule, Section 5)d)ii), note ■.

additional Limited Service MEO Ports may elect to do so based on their own business decisions and would continue to be subject to the same monthly fee.

The Exchange believes that its proposed fee for Limited Service MEO Ports is reasonable, equitable, and not unfairly discriminatory because it is designed to align fees with services provided, will apply equally to all Members that are assigned Limited Service MEO Ports (either directly or through a Service Bureau), and will minimize barriers to entry by providing all Members with four free Limited Service MEO Ports from the time the Exchange launches operations.<sup>51</sup> As a result of the proposed fee structure, a significant majority of Members may not be subject to any fee. In contrast, other exchanges generally charge in excess of \$450 per port without providing any free ports.<sup>52</sup> Even for Members that choose to maintain more than four Limited Service MEI Ports, the Exchange believes that the cost-based fee proposed herein is low enough that it will not operate to restrain any Member's ability to maintain the number of Limited Service MEO Ports that it determines are consistent with its business objectives. Although the Exchange projects that no Members will utilize more than the four free Limited Service MEO Ports, if there is a small number of Members that do utilize more ports and are subject to the proposed fee of \$250 per port, those Members will still pay considerably less for such ports as compared to the fees that competing exchanges charge.<sup>53</sup>

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<sup>51</sup> The following rationale to support providing a certain number of Limited Service MEI Ports for free prior to applying a fee is similar to that used by the IEX in a 2020 proposal to do the same as proposed herein. See Securities Exchange Act Release No. 86626 (August 9, 2019), 84 FR 41793 (August 15, 2019) (SR-IEX-2019-07).

<sup>52</sup> See NASDAQ Pricing Schedule, Options 7, Section 3, Ports and Other Services and NASDAQ Rules, General 8: Connectivity, Section 1. Co-Location Services (similar to the Exchange's MEI Ports, SQF ports are primarily utilized by Market Makers); ISE Pricing Schedule, Options 7, Section 7, Connectivity Fees and ISE Rules, General 8: Connectivity; NYSE American Options Fee Schedule, Section V.A. Port Fees and Section V.B. Co-Location Fees; GEMX Pricing Schedule, Options 7, Section 6, Connectivity Fees and GEMX Rules, General 8: Connectivity.

<sup>53</sup> Assuming a Member selects five Limited Service MEO Ports based on their business needs that Member on MIA X Sapphire would be charged only for the fifth Limited Service MEO Port and pay only the \$250 monthly fee, as the first four Limited Service MEO Ports would be free. Meanwhile, a Member that purchases five ports on NYSE Arca Options would pay \$450 per port per month, resulting in a total charge

Further, the number of assigned Limited Service MEO Ports will continue to be based on decisions by each Member, including the ability to reduce fees by discontinuing unused Limited Service MEO Ports.

The Exchange believes that providing four free Limited Service MEO Ports is reasonable, equitable, and not unfairly discriminatory because it will enable Members to access the Exchange on this basis without having to pay for Limited Service MEO Ports, thereby encouraging order flow and liquidity from a diverse set of market participants, facilitating price discovery and the interaction of orders. The Exchange believes that four Limited Service MEO Ports is an appropriate number to provide for free because it aligns with the maximum number of free Limited Service MEO/MEI Ports offered by each of the Exchange's affiliated options markets, and the Exchange believes will align with the amount of such ports that will be maintained by a substantial majority of Members once the Exchange launches operations.

Based on an initial survey of market participants that the Exchange anticipates will utilize Limited Service MEO Ports, the Exchange projects that only a few Members will be subject to any Limited Service MEO Port fees following the expiration of the Initial Waiver Period. In determining the appropriate number of Limited Service MEO Ports to provide for free, the Exchange considered several factors. First, the Exchange believes that, with respect to Limited Service MEO Port usage, Members will prefer at least two Limited Service MEO Ports, for redundancy purposes. Second, from a review of the number of Limited Service MEI Ports currently requested, the median number of ports per Member that will utilize Limited Service MEO Ports upon the launch of the Exchange is approximately eight. Thus, the Exchange

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of \$2,250 per month. On Cboe BZX Options, that same member would pay \$750 per port per month, resulting in a total charge of \$3,750 per month for five ports. See NYSE Arca Options Fees and Charges, dated March 1, 2024, available at [https://www.nyse.com/publicdocs/nyse/markets/arca-options/NYSE\\_Arca\\_Options\\_Fee\\_Schedule.pdf](https://www.nyse.com/publicdocs/nyse/markets/arca-options/NYSE_Arca_Options_Fee_Schedule.pdf) and Cboe BZX Options Fee Schedule available at [https://www.cboe.com/us/options/membership/fee\\_schedule/](https://www.cboe.com/us/options/membership/fee_schedule/).

believes that having four ports appears to be reasonably sufficient for the majority of Members to access the Exchange. On that basis, the Exchange chose four Limited Service MEO Ports as the maximum number of ports for which it will not charge to access the Exchange. The Exchange notes that some Members may use more Limited Service MEO Ports than other Members (and the four provided for free), which will be driven by the nature and volume of the business they conduct on the Exchange, and the choices they make in segmenting that business across different Limited Service MEO Ports. Allowing for this expansive use of Exchange capacity represents an aggregate cost that the Exchange seeks to recover through charging for ports five and higher.

The proposed fee structure is also designed to encourage Members to be efficient with their Limited Service MEO Port usage, thereby resulting in a corresponding increase in the efficiency that the Exchange would be able to realize in managing its aggregate costs for providing Limited Service MEO Ports. There is no requirement that any Member maintain a specific number of Limited Service MEO Ports and a Member may choose to maintain as many or as few of such ports as each Member deems appropriate.

The Exchange assessed the impact of the structure and amount of the proposed fee on all Members that the Exchange anticipates will utilize Limited Service MEO Ports. The Exchange believes that the proposed fee is fair and equitably allocated across all Members. As a threshold matter, the fee will not by design apply differently to different types or sizes of Members. Nonetheless, upon launch, the Exchange will be able to assess whether there may be any differences in the amount of the projected fee that correlates to the type and/or size of different Members. This assessment will help determine whether the number of assigned Limited Service MEO Ports, and thus projected fees, correlates closely to a Member's inbound message volume to the Exchange. This is a similar assessment as that performed by the Exchange's affiliates, MIAX and MIAX Emerald, prior to changing their respective Limited Service MEI Port fees

recently. Based on the experience of the Exchange's affiliates, as inbound message volume increases per Member, the number of requested and assigned Limited Service MEO Ports increases. As the Exchange has not launched operations at the time of this filing, the Exchange does not have data to show any correlation between a Member's inbound message volume and the number of Limited Service MEO Port assigned to the Member. However, based on the experience of the Exchange's affiliates, MIAX and MIAX Emerald, Members with relatively higher inbound message volume were projected to pay higher fees because they requested more Limited Service MEI Ports for those exchanges.

To achieve consistent, premium network performance, the Exchange must build and maintain a network that has the capacity to handle the message rate requirements of its heaviest network consumers during anticipated peak market conditions. The resultant need to support the anticipated amount of billions of messages per day will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. This need will also require the Exchange to purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of its surveillance program and to satisfy its record keeping requirements under the Exchange Act.<sup>54</sup> Thus, as the number of connections per Market Maker increases, other costs incurred by the Exchange will likely also increase, e.g., storage costs, surveillance costs, service expenses.

The Exchange further believes that the proposed fees are reasonable, fair and equitable, and non-discriminatory because they will apply to all Members in the same manner and are not targeted at a specific type or category of market participant engaged in any particular trading strategy. All Members will receive four free Limited Service MEO Ports and pay the same

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<sup>54</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

proposed fee per Limited Service MEO Port for each additional Limited Service MEO Port. Each Limited Service MEO Port is identical, providing connectivity to the Exchange on identical terms. While the proposed fee will result in a different effective “per unit” rate for different Members after factoring in the four free Limited Service MEO Ports, the Exchange does not believe that this difference is material given the overall low proposed fee per Limited Service MEO Port. Because the first four Limited Service MEO Ports are free of charge, each entity will have a “per unit” rate of less than the proposed fee. Further, the fee is not connected to volume based tiers. All Members will be subject to the same fee schedule, regardless of the volume sent to or executed on the Exchange. The fee also does not depend on any distinctions between Members, customers, broker-dealers, or any other entity. The fee will be assessed solely based on the number of Limited Service MEO Ports an entity selects and not on any other distinction applied by the Exchange. While entities that send relatively more inbound messages to the Exchange may select more Limited Service MEO Ports, thereby resulting in higher fees, that distinction is based on decisions made by each Member and the extent and nature of the Member's business on the Exchange rather than application of the fee by the Exchange. Members can determine how many Limited Service MEO Ports they need to implement their trading strategies effectively. The Exchange proposes to offer additional Limited Service MEO Ports at a low fee to enable all Members to purchase as many Limited Service MEO Ports as their business needs dictate in order to optimize throughput and manage latency across the Exchange.

Notwithstanding that Members with the highest number of Limited Service MEO Ports will pay a greater percentage of the total projected fees than is represented by their Limited Service MEO Port usage, the Exchange does not believe that the proposed fee is unfairly discriminatory. It is not possible to fully synchronize the Exchange's objective to provide four

free Limited Service MEO Ports to all Members, thereby minimizing barriers to entry and incentivizing liquidity on the Exchange, with an approach that exactly aligns the projected per Member fee with each Member's number of requested Limited Service MEO Ports. As proposed, the Exchange is providing a reasonable number of Limited Service MEO Ports to each Member without charge. Any variance between projected fees and Limited Service MEO Port usage is attributable to objective differences among Members in terms of the number of Limited Service MEO Ports they determine are appropriate based on their trading on the Exchange. Further, the Exchange believes that the low amount of the proposed fee (which in the aggregate is projected to only partially recover the Exchange's directly-related costs as described herein) mitigates any disparate impact.

Further, the fee will help to encourage Limited Service MEO Port usage in a way that aligns with the Exchange's regulatory obligations. As a national securities exchange, the Exchange is subject to Regulation Systems Compliance and Integrity ("Reg SCI").<sup>55</sup> Reg SCI Rule 1001(a) requires that the Exchange establish, maintain, and enforce written policies and procedures reasonably designed to ensure (among other things) that its Reg SCI systems have levels of capacity adequate to maintain the Exchange's operational capability and promote the maintenance of fair and orderly markets.<sup>56</sup> By encouraging Members to be efficient with their Limited Service MEO Ports usage, the proposed fee will support the Exchange's Reg SCI obligations in this regard by ensuring that unused Limited Service MEO Ports are available to be allocated based on individual Members needs and as the Exchange's overall order and trade volumes increase. Additionally, because the Exchange will continue not to charge connectivity testing and certification fees to its disaster recovery facility or where the Exchange requires

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<sup>55</sup> 17 CFR 242.1000-1007.

<sup>56</sup> 17 CFR 242.1001(a).



testing and certification, the proposed fee structure will further support the Exchange's Reg SCI compliance by reducing the potential impact of a disruption should the Exchange be required to switch to its disaster recovery facility and encouraging Members to engage in any necessary system testing without incurring any port fee costs.<sup>57</sup>

Finally, the Exchange believes that the proposed fee is consistent with Section 11A of the Exchange Act in that it is designed to facilitate the economically efficient execution of securities transactions, fair competition among brokers and dealers, exchange markets and markets other than exchange markets, and the practicability of brokers executing investors' orders in the best market. Specifically, the proposed low, cost-based fee will enable a broad range of the Exchange Members to continue to connect to the Exchange, thereby facilitating the economically efficient execution of securities transactions on the Exchange, fair competition between and among such Members, and the practicability of Members that are brokers executing investors' orders on the Exchange when it is the best market.

#### *FIX, CTD, and FXD Ports*

To achieve consistent, premium network performance, the Exchange must build and maintain a network that has the capacity to handle the message rate requirements of its heaviest network consumers during anticipated peak market conditions. The resultant need to support the anticipated amount of billions of messages per day will consume the Exchange's resources and significantly contribute to the overall network connectivity expense for storage and network transport capabilities. This need will also require the Exchange to purchase additional storage capacity on an ongoing basis to ensure it has sufficient capacity to store these messages as part of

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<sup>57</sup> By comparison, some other exchanges charge less to connect to their disaster recovery facilities, but still charge an amount that could both recoup costs and potentially be a source of profits. See, e.g., Nasdaq Stock Market LLC Equity 7, Section 115 (Ports and other Services).

it surveillance program and to satisfy its record keeping requirements under the Exchange Act.<sup>58</sup> Thus, as the number of connections per Market Maker increases, other costs incurred by the Exchange will likely also increase, e.g., storage costs, surveillance costs, service expenses.

The Exchange further believes that the proposed fees for FIX, CTD and FXD Ports are reasonable, fair and equitable, and non-discriminatory because they will apply to all Members in the same manner and are not targeted at a specific type or category of market participant engaged in any particular trading strategy. The fee for each type of port does not depend on any distinctions between Members, customers, broker-dealers, or any other entity. The fee will be assessed solely based on the number of FIX, CTD or FXD Ports an entity selects and not on any other distinction applied by the Exchange.

*Waiver Period for Connectivity Fees*

The Exchange believes its proposal is consistent with Section 6(b)(4) of the Act,<sup>59</sup> which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges. Specifically, under the Exchange's proposal the monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and the 10Gb ULL connections to the disaster recovery facility for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The proposed monthly Member and non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be discounted by 50% for the three full calendar months thereafter.

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<sup>58</sup> 17 CFR 240.17a-1 (recordkeeping rule for national securities exchanges, national securities associations, registered clearing agencies and the Municipal Securities Rulemaking Board).

<sup>59</sup> 15 U.S.C. 78f(b)(4).

The Exchange believes its proposal is reasonable, equitable and not unfairly discriminatory as the proposed fee waivers are equally available and will apply uniformly to all participants.

The Exchange also proposes that the monthly Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be waived for the partial month in which the Exchange launches operations, plus an additional three full calendar months. Additionally, the monthly Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be discounted by 50% for the three full calendar months thereafter.

The Exchange believes that waiving the fees for the first two 10Gb ULL connections on each switch is reasonable, equitable and not unfairly discriminatory as all Exchange participants have an equal opportunity to take advantage of the proposed discount under the proposal. Additionally, the Exchange believes its proposal represents a balanced approach designed to incentivize connectivity to the Exchange and to also prevent oversubscription to ensure that the Exchange has the physical capacity necessary to support its proposal.

#### *Initial Waiver Period*

MIAX Sapphire proposes to assess monthly Financial Information Exchange (“FIX”) Port fees to Members in each month the Member is credentialed to use a FIX Port in the production environment and based upon the number of credentialed FIX Ports. However, the Exchange proposes that all port fees<sup>60</sup> will be waived during the Initial Waiver Period.<sup>61</sup> The

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<sup>60</sup> The port fees the Exchange proposes to waive during the Initial Waiver Period are Fix Port Fees (See Section d)i) of the Fee Schedule); MEO Port Fees (See Section d)ii) of the Fee Schedule); Clearing Trade Drop Port Fees (See Section d)iv) of the Fee Schedule); and FIX Drop Copy Port Fees (See Section d)v) of the Fee Schedule).

<sup>61</sup> See supra note 13.

Exchange believes its proposal is reasonable, equitable and not unfairly discriminatory as the proposed fee waivers are equally available and will apply uniformly to all participants.

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.

Intra-Market Competition

The Exchange believes the proposed fees will not result in any burden on intra-market competition that is not necessary or appropriate in furtherance of the purposes of the Act because the proposed fees will allow the Exchange to recoup its costs with a small profit for providing 1Gb and 10Gb ULL connectivity, while recouping some of its costs for a negative margin for providing Full Service MEO Ports, Limited Service MEO Ports, FIX Ports, CTD Ports and FXD Ports, following expiration of the respective waiver periods for each fee. As described above, the Exchange anticipates operating at a loss for the majority of the above services in order to provide a low-cost alternative to attract order flow and encourage market participants to experience the high determinism and resiliency of the Exchange's trading Systems. To do so, the Exchange chooses to waive the fees for all of the connectivity and port services for a specified time period. This will likely result in the Exchange forgoing revenue it could generate from assessing any fees without a waiver period or higher fees upon expiration of the waiver periods. The Exchange could seek to charge higher fees upon launch, but that could serve to discourage participation on the Exchange. Instead, the Exchange chooses to provide a low-cost exchange alternative to the options industry, which may result in lower initial revenues.

Further, the Exchange does not believe that the proposed fees 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. The proposed fees will apply uniformly

to all market participants regardless of the number of 1Gb or 10Gb ULL connections they choose to purchase. The proposed fees do not favor certain categories of market participants in a manner that would impose an undue burden on 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. In particular, Exchange personnel has been informally discussing potential fees for connectivity services with a diverse group of market participants that are likely to connect to the Exchange for launch (including large and small firms, firms with large connectivity service footprints and small connectivity service footprints, as well as extranets and service bureaus) for several months leading up to that time. The Exchange does not believe the proposed fees for connectivity services would negatively impact the ability of Members, non-Members (extranets or service bureaus), third-parties that purchase the Exchange's connectivity and resell it, and customers of those resellers to compete with other market participants or that they are placed at a disadvantage.

The Exchange does anticipate, however, that some market participants may reduce or discontinue use of connectivity services provided directly by the Exchange once the relevant waiver periods expire. The Exchange's affiliates have experienced similar reductions in use by their members for similar non-transaction fee increases. For example, one MIAX Pearl Options Market Maker terminated their MIAX Pearl Options membership on January 1, 2023 as a direct result of the similar proposed fee changes by MIAX Pearl Options.<sup>62</sup>

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<sup>62</sup> The Exchange acknowledges that IEX included in its proposal to adopt market data fees after offering market data for free an analysis of what its projected revenue would be if all of its existing customers continued to subscribe versus what its projected revenue would be if a limited number of customers subscribed due to the new fees. See Securities Exchange Act Release No. 94630 (April 7, 2022), 87 FR 21945 (April 13, 2022) (SR-IEX-2022-02). MEMX did not include a similar analysis in its recent non-transaction fee proposal. See supra note 41. The Exchange does not believe a similar analysis would be

The Exchange does not believe that the proposed fees for connectivity services place certain market participants at a relative disadvantage to other market participants because the proposed connectivity pricing is associated with relative usage of the Exchange by each market participant and does not impose a barrier to entry to smaller participants. The Exchange believes its proposed pricing is reasonable and, when coupled with the availability of third-party providers that also offer connectivity solutions, that participation on the Exchange is affordable for all market participants, including smaller trading firms. As described above, the connectivity services purchased by market participants typically increase based on their additional message traffic and/or the complexity of their operations. The market participants that utilize more connectivity services typically utilize the most bandwidth, and those are the participants that consume the most resources from the network. Accordingly, the proposed fees for connectivity services do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation of the proposed connectivity fees reflects the network resources consumed by the various size of market participants and the costs to the Exchange of providing such connectivity services.

The Exchange does not believe its proposed fees for Limited Service MEO Ports will place certain market participants at a relative disadvantage to other market participants. All market participants would be eligible to receive four (4) free Limited Service MEO Ports and those that elect to purchase more would be subject to the same flat fee regardless of the number of additional Limited Service MEO Ports they purchase. All firms purchase the amount of Limited Service MEO Ports they require based on their own business decisions and similarly situated firms are subject to the same fees.

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useful here because it is amending existing fees, not proposing to charge a new fee where existing subscribers may terminate connections because they are no longer enjoying the service at no cost.

### Inter-Market Competition

The Exchange also does not believe that the proposed rule change and price increase will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As this is a fee increase, arguably if set too high, this fee would make it easier for other exchanges to compete with the Exchange. Only if this were a substantial fee decrease could this be considered a form of predatory pricing. In contrast, the Exchange believes that, without this fee increase, we are potentially at a competitive disadvantage to certain other exchanges that have in place higher fees for similar services. As we have noted, the Exchange believes that connectivity fees can be used to foster more competitive transaction pricing and additional infrastructure investment and there are other options markets of which market participants may connect to trade options at higher rates than the Exchange's. 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,<sup>63</sup> and Rule 19b-4(f)(2)<sup>64</sup> 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,

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<sup>63</sup> 15 U.S.C. 78s(b)(3)(A)(ii).

<sup>64</sup> 17 CFR 240.19b-4(f)(2).

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](mailto:to-rule-comments@sec.gov). Please include File Number SR-SAPPHIRE-2024-41 on the subject line.

##### Paper comments:

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

All submissions should refer to file number SR-SAPPHIRE-2024-41. This file number should be included on the subject line if email 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 (<https://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 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-SAPPHIRE-2024-41 and should be submitted on or before [INSERT DATE 21 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>65</sup>

**Sherry R. Haywood,**  
*Assistant Secretary*

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<sup>65</sup> 17 CFR 200.30-3(a)(12).

## Exhibit 5

New text is underlined;

Deleted text is in [brackets]

### MIAX Sapphire Options Exchange Fee Schedule

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## 5) System Connectivity Fees

### a) [Reserved.] Monthly Member Network Connectivity Fees

<u>Member Network Connectivity Per Month</u>	<u>Primary/Secondary Facility 1 Gigabit ULL Per Connection</u>	<u>Disaster Recovery Facility 1 Gigabit ULL Per Connection</u>	<u>Disaster Recovery Facility 10 Gigabit ULL Per Connection</u>	<u>Primary/Secondary Facility 10 Gigabit ULL Per Connection</u>
<u>Individual Firm</u>	<u>\$1,400.00</u>	<u>\$550.00</u>	<u>\$2,750.00</u>	<u>\$13,500.00</u>

The monthly Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be waived for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The monthly Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be discounted by 50% for the three full calendar months thereafter.

The monthly Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be waived for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The monthly Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be discounted by 50% for the three full calendar months thereafter. Any subsequent 10Gb ULL connections on each switch will be charged the full monthly rate of \$13,500 per 10Gb ULL connection.

The monthly Member network connectivity fees for connectivity with the primary/secondary facility will be assessed in any month the Member is credentialed to use any of the MIAX Sapphire APIs or market data feeds in the production environment and will be pro-rated when a 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 has been credentialed to utilize any of the MIAX Sapphire 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 monthly Member network connectivity fees for connectivity with the disaster recovery facility will be assessed in each month during which the Member has established connectivity with the disaster recovery facility.

Members utilizing the MENI to connect to the trading platforms, market data systems, test systems, and disaster recovery facilities of the Exchange, MIAX, MIAX Pearl Options, and MIAX Emerald via a single, shared 1Gb connection will only be assessed one monthly Member network connectivity

fee per connection, regardless of the trading platforms, market data systems, test systems, and disaster recovery facilities accessed via such connection.

### **b) [Reserved.] Monthly Non-Member Network Connectivity Fees**

<u>Non-Member Network Connectivity Per Month</u>	<u>Primary/Secondary Facility 1 Gigabit ULL Per Connection</u>	<u>Disaster Recovery Facility 1 Gigabit ULL Per Connection</u>	<u>Disaster Recovery Facility 10 Gigabit ULL Per Connection</u>	<u>Primary/Secondary Facility 10 Gigabit ULL Per Connection</u>
<u>Service Bureau/Extranet Provider and other non-Members</u>	<u>\$1,400.00</u>	<u>\$550.00</u>	<u>\$2,750.00</u>	<u>\$13,500.00</u>

The monthly non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be waived for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The monthly non-Member network connectivity fees for the 1Gb connections to the primary/secondary facility and disaster recovery facility, and 10Gb ULL connections to the disaster recovery facility will be discounted by 50% for the three full calendar months thereafter.

The monthly non-Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be waived for the partial month in which the Exchange launches operations, plus an additional three full calendar months. The monthly non-Member network connectivity fees for the first two 10Gb ULL connections on each switch to the primary/secondary facility will be discounted by 50% for the three full calendar months thereafter. Any subsequent 10Gb ULL connections on each switch will be charged the full monthly rate of \$13,500 per 10Gb ULL connection.

The monthly non-Member network connectivity fees for connectivity with the primary/secondary facility will be assessed in each month the non-Member has been credentialed to use any of the MIAX Sapphire APIs or market data feeds via the network connection in the production environment and will be pro-rated when a 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 non-Member has been credentialed to utilize any of the MIAX Sapphire 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 monthly non-Member network connectivity fees for connectivity with the disaster recovery facility will be assessed in each month during which the non-Member has established connectivity with the disaster recovery facility.

Non-Members utilizing the MENI to connect to the trading platforms, market data systems, test systems, and disaster recovery facilities of the Exchange, MIAX, MIAX Pearl, and MIAX Emerald via a single, shared 1Gb connection will only be assessed one monthly non-Member network connectivity fee per connection, regardless of the trading platforms, market data systems, test systems, and disaster recovery facilities accessed via such connection.

c) No change.

d) **[Reserved.] Port Fees**

All Port Fees will be waived during the Initial Waiver Period.

**i) FIX Port Fees**

MIAX Sapphire will assess monthly Financial Information Exchange (“FIX”) Port fees to Members in each month the Member is credentialed to use a FIX Port in the production environment and based upon the number of credentialed FIX Ports.

<u>FIX Port Fees</u>	<u>MIAX Sapphire Monthly Port Fees Includes Connectivity to the Primary, Secondary and Disaster Recovery Data Centers</u>
<u>1st FIX Port</u>	<u>\$275.00</u>
<u>FIX Ports 2 through 5</u>	<u>\$175.00</u>
<u>Additional FIX Ports over 5</u>	<u>\$75.00</u>

**ii) MEO Port Fees**

<u>Type of Member</u>	<u>Type of Port</u>	<u>Monthly Full Service MEO Port Fee</u>	<u>Market Maker Registrations (the lesser of the applicable measurements below)</u>	
			<u>Per Class</u>	<u>% of National Average Daily Volume</u>
<u>Market Maker</u>	<u>Full Service MEO Port</u>	<u>\$2,500.00</u>	<u>Up to 10 Classes</u>	<u>Up to 20% of Classes by volume</u>
		<u>\$3,750.00</u>	<u>Up to 40 Classes</u>	<u>Up to 35% of Classes by volume</u>
		<u>\$5,000.00<sup>b</sup></u>	<u>Up to 100 Classes</u>	<u>Up to 50% of Classes by volume</u>
		<u>\$6,000.00<sup>b</sup></u>	<u>Over 100 Classes</u>	<u>Over 50% of Classes by volume up to all Classes listed on MIAX Sapphire Options</u>

b. For this Monthly MIAX Sapphire Full Service MEO Port tier level, if the Market Maker’s total monthly executed volume during the relevant month is less than 0.015% of the total monthly executed volume reported by OCC in the Market Maker account type for MIAX Sapphire-listed option classes for that month, then the fee will be \$4,000 instead of the fee otherwise applicable to such level.

For the calculation of the monthly Full Service MEO Port fees to be assessed to Market Makers, the applicable fee rate is the lesser of either the per class basis or percentage of total national average daily volume measurement. The amount of the monthly Full Service MEO Port fee will be based upon the number of classes in which the Market Maker was registered to quote on any given day within the calendar month, or upon the class volume percentages set forth in the above table. A Market Maker is determined to be registered in a class if that Market Maker has been registered in one or more series in that class. The Exchange will assess MIAX Sapphire Market Makers the monthly Full Service MEO Port fee based on the greatest number of classes listed on MIAX Sapphire that the MIAX Sapphire Market Maker registered to quote in on any given day within a

calendar month. The class volume percentage is based on the total national average daily volume in classes listed on MIAX Sapphire in the prior calendar quarter. Newly listed option classes are excluded from the calculation of the monthly Full Service MEO Port fee until the calendar quarter following their listing, at which time the newly listed option classes will be included in both the per class count and the percentage of total national average daily volume.

MIAX Sapphire will assess monthly MEO Port fees to Market Makers in each month the Market Maker has been credentialed to use the MEO Port in the production environment and has registered to quote in at least one class.

MEO Port users will be allocated two (2) Full Service MEO Ports and four (4) Limited Service MEO Ports per Matching Engine to which they connect. MEO Port fees include MEO Ports at the primary, secondary and disaster recovery data centers. MIAX Sapphire Market Makers may request additional Limited Service MEO Ports for which MIAX Sapphire will assess MIAX Sapphire Market Makers \$250 per month per additional Limited Service MEO Port for each Matching Engine in excess of the four (4) Limited Service MEO Ports described above.

**iii) Purge Port Fees (No change).**

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**iv) Clearing Trade Drop Port Fees**

<u>Description</u>	<u>Monthly Fee</u>
Real-Time CTD Information	\$450.00

Clearing Trade Drop (“CTD”) provides Members with real-time clearing trade updates. The updates include the Member’s clearing trade messages on a low latency, real-time basis. The trade messages are routed to a Member’s connection containing certain information. The information includes, among other things, the following: (i) trade date and time; (ii) symbol information; (iii) trade price/size information; (iv) Member type (for example, and without limitation, Market Maker, EEM, broker-dealer); (v) Exchange Member Participant Identifier (“MPID”) for each side of the transaction, including Clearing Member MPID; and (vi) strategy specific information for complex transactions. CTD Port fees will be assessed in any month the Member is credentialed to use the CTD Port in the production environment.

**v) FIX Drop Copy Port Fees**

<u>Description</u>	<u>MIAX Sapphire Monthly Port Fees Includes connectivity to the Primary, Secondary and Disaster Recovery Data Centers</u>
FIX Drop Copy Port	\$250.00

The FIX Drop Copy (“FXD”) Port is a messaging interface that will provide a copy of real-time trade execution, trade correction and trade cancellation information to FXD Port users who subscribe to the service. FXD Port users are those users who are designated by an EEM to receive the information and the information is restricted for use by the EEM. FXD Port Fees will be assessed in any month the Member is credentialed to use the FXD Port in the production environment.

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