



**Martha Redding**  
Associate General Counsel  
Assistant Secretary

New York Stock Exchange  
11 Wall Street  
New York, NY 10005

December 12, 2016

**VIA E-MAIL**

Brent J. Fields  
Secretary  
Securities and Exchange Commission  
100 F Street, N.E.  
Washington, DC 20549-1090

Re: Securities Exchange Act Rel. 34-78628 (SR-NYSEArca-2016-89)

Dear Mr. Fields:

NYSE Arca, Inc. filed the attached Amendment No. 2 to the above-referenced filing on December 9, 2016.

Sincerely,

A handwritten signature in blue ink, appearing to be the initials "BJF" followed by a large, stylized flourish.

Encl. (Amendment No. 2 to SR-NYSEArca-2016-89)

Required fields are shown with yellow backgrounds and asterisks.

Filing by NYSE Arca, Inc.  
Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

|                          |  |                          |                                      |                                      |                          |
|--------------------------|--|--------------------------|--------------------------------------|--------------------------------------|--------------------------|
| Initial *                | Amendment *                                      | Withdrawal               | Section 19(b)(2) *                   | Section 19(b)(3)(A) *                | Section 19(b)(3)(B) *    |
| <input type="checkbox"/> | <input checked="" type="checkbox"/>              | <input type="checkbox"/> | <input checked="" type="checkbox"/>  | <input type="checkbox"/>             | <input type="checkbox"/> |
|                          |  |                          | Rule                                 |                                      |                          |
| Pilot                    | Extension of Time Period for Commission Action * | Date Expires *           | <input type="checkbox"/> 19b-4(f)(1) | <input type="checkbox"/> 19b-4(f)(4) |                          |
| <input type="checkbox"/> | <input type="checkbox"/>                         | <input type="text"/>     | <input 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 | Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934 |
| Section 806(e)(1) *   | Section 806(e)(2) *  |
| <input type="checkbox"/>  | <input type="checkbox"/>   |
|   | Section 3C(b)(2) *   |
|   | <input type="checkbox"/>   |

|                                  |                                  |
|----------------------------------|----------------------------------|
| Exhibit 2 Sent As Paper Document | Exhibit 3 Sent As Paper Document |
| <input type="checkbox"/>         | <input type="checkbox"/>         |

**Description**

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

**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 \* Martha Last Name \* Redding

Title \* Associate General Counsel

E-mail \* [REDACTED]

Telephone \* [REDACTED] Fax [REDACTED]

**Signature**

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

(Title \*)

Date 12/09/2016 Senior Counsel

By David De Gregorio

(Name \*)

David DeGregorio,

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

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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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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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 Advance 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, security-based swap submission, or advance notice 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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Exhibit Sent As Paper Document

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 3 - Form, Report, or Questionnaire**

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Exhibit Sent As Paper Document

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 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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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) Pursuant to the provisions of Section 19(b)(1) of the Securities Exchange Act of 1934 (the “Act”)<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> NYSE Arca, Inc. (“NYSE Arca” or the “Exchange”) proposes to amend the co-location services offered by the Exchange to establish fees relating to Users’ access to third party trading and execution services; connectivity to third party data feeds and testing and certification feeds; access to clearing; and other services. In addition, this proposed rule change reflects changes to the NYSE Arca Options Fee Schedule (the “Options Fee Schedule”) and, through its wholly owned subsidiary NYSE Arca Equities, Inc. (“NYSE Arca Equities”), the NYSE Arca Equities Schedule of Fees and Charges for Exchange Services (the “Equities Fee Schedule” and, together with the Options Fee Schedule, the “Fee Schedules”) related to these co-location services. This Amendment No. 2 supersedes the original filing and Amendment 1 in their entirety.<sup>3</sup>

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

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

<sup>3</sup> The Securities and Exchange Commission (“Commission”) has issued an order instituting proceedings to determine whether to approve or disapprove the proposed rule change, as modified by amendments 1 and 2. See Securities Exchange Act Release No. 79379 (November 22, 2016), 81 FR 86036 (November 29, 2016) (SR-NYSEArca-2016-89) (the “November 22 Order”). In its filing, as amended by amendment 1, the Exchange proposed adding to the Fee Schedules (a) a more detailed description of the connectivity to certain market data products (the “Included Data Products”) that Users receive with connections to the local area networks available in the data center; and (b) connectivity fees for connecting to other market data products of the Exchange and its affiliates, New York Stock Exchange LLC and NYSE MKT LLC (the “Premium NYSE Data Products”). In the November 22 Order, the Commission cites language from the proposed rule change:

the Exchange also stated that the expectation of co-location was that normally Users would expect reduced latencies in . . . receiving market data from the Exchange by being colocated. Therefore, as the Exchange states in Amendment No. 2, both Included Data Products and Premium NYSE Data Products are ‘directly related to the purpose of co-location.’

Id., at 86040. It goes on to say that, if Included Data Products and Premium NYSE Data Products are “integral to co-located Users for trading on the Exchange,” it was questionable whether obtaining the information from another source is a viable alternative. Id. The Exchange disagrees with the Commission’s description of Included Data Products and Premium NYSE Data Products as “integral” to Users for trading on the Exchange. Being related to the purpose of

A notice of the proposed rule change for publication in the Federal Register is attached hereto as Exhibit 1, and the text of the proposed rule change is attached as Exhibit 5.

- (b) The Exchange does not believe that the proposed rule change will have any direct effect, or any significant indirect effect, on any other Exchange rule in effect at the time of this filing.
- (c) Not applicable.

2. Procedures of the Self-Regulatory Organization

Senior management has approved the proposed rule change pursuant to authority delegated to it by the Board of the Exchange. No further action is required under the Exchange's governing documents. Therefore, the Exchange's internal procedures with respect to the proposed rule change are complete.

The person on the Exchange staff prepared to respond to questions and comments on the proposed rule change is:

Martha Redding  
Associate General Counsel  
NYSE Group, Inc.

( [REDACTED] )

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

(a) Purpose

The Exchange proposes to amend the co-location<sup>4</sup> services offered by the Exchange to establish fees relating to Users'<sup>5</sup> access to third party trading and

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co-location is not the same as being integral for trading. A User is not required to receive either Included Data Products or Premium NYSE Data Products in order to trade on the Exchange.

<sup>4</sup> The Exchange initially filed rule changes relating to its co-location services with the Commission in 2010. See Securities Exchange Act Release No. 63275 (November 8, 2010), 75 FR 70048 (November 16, 2010) (SR-NYSEArca-2010-100) (the "Original Co-location Filing"). The Exchange operates a data center in Mahwah, New Jersey (the "data center") from which it provides co-location services to Users.

<sup>5</sup> For purposes of the Exchange's co-location services, a "User" means any market participant that requests to receive co-location services directly from the

execution services; connectivity to third party data feeds and testing and certification feeds; access to clearing; and other services.

More specifically, the Exchange proposes to revise the Fee Schedules to include:

- a. fees for connectivity to:
  - the execution systems of third party markets and other content service providers (“Third Party Systems”);
  - data feeds from third party markets and other content service providers (the “Third Party Data Feeds”);
  - third party testing and certification feeds;
  - Depository Trust & Clearing Corporation (“DTCC”) services; and
- b. fees for virtual control circuits (“VCCs”) between two Users. VCCs are unicast connections between two participants over dedicated bandwidth.<sup>6</sup>

The Exchange provides access to Third Party Systems (“Access”) and connectivity to Third Party Data Feeds, third party testing and certification feeds, and DTCC (collectively, “Connectivity”) as conveniences to Users. Use of Access or Connectivity is completely voluntary, and several other access and connectivity options are available to a User. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the Exchange’s Secure

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Exchange. See Securities Exchange Act Release No. 76010 (September 29, 2015), 80 FR 60197 (October 5, 2015) (SR–NYSEArca–2015–82). As specified in the Fee Schedules, a User that incurs co-location fees for a particular co-location service pursuant thereto would not be subject to co-location fees for the same co-location service charged by the Exchange’s affiliates New York Stock Exchange LLC (“NYSE LLC”) and NYSE MKT LLC (“NYSE MKT and, together with NYSE LLC, the “Affiliate SROs”). See Securities Exchange Act Release No. 70173 (August 13, 2013), 78 FR 50459 (August 19, 2013) (SR–NYSEArca–2013–80).

<sup>6</sup> Information flows over existing network connections in two formats: “unicast” format, which is a format that allows one-to-one communication, similar to a phone line, in which information is sent to and from the Exchange; and “multicast” format, which is a format in which information is sent one-way from the Exchange to multiple recipients at once, like a radio broadcast.

Financial Transaction Infrastructure (“SFTI”) network, or a combination thereof.

Similarly, the Exchange provides VCCs as a convenience to Users. Use of a VCC is completely voluntary. As an alternative to an Exchange-provided VCC, a User may connect to another User through a fiber connection (“cross connect”).<sup>7</sup>

### Connectivity

#### *Connectivity to Third Party Systems*

The Exchange proposes to revise the Fee Schedules to provide that Users may obtain connectivity to Third Party Systems of multiple third party markets and other content service providers for a fee. Users connect to Third Party Systems over the internet protocol (“IP”) network, a local area network available in the data center.<sup>8</sup> The Exchange selects what connectivity to Third Party Systems to offer in the data center based on User demand.

In order to obtain access to a Third Party System, a User enters into an agreement with the relevant third party content service provider, pursuant to which the third party content service provider charges the User for access to the Third Party System. The Exchange then establishes a unicast connection between the User and the relevant third party content service provider over the IP network. The Exchange charges the User for the connectivity to the Third Party System. A User only receives, and is only charged for, access to Third Party Systems for which it enters into agreements with the third party content service provider.

With the exception of the Intercontinental Exchange (“ICE”) feed,<sup>9</sup> the Exchange has no ownership interest in the Third Party Systems. Establishing a User’s access to a Third Party System does not give the Exchange any right to use the Third Party Systems. Connectivity to a Third Party System does not provide access or

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<sup>7</sup> See Original Co-location Filing, *supra* note 4, at 70049 and Securities Exchange Act Release No. 74219 (February 6, 2015), 80 FR 7899 (February 12, 2015) (SR-NYSEArca-2015-03) (notice of filing and immediate effectiveness of proposed rule change to include IP network connections and fiber cross connects between a User’s cabinet and non-User’s equipment as co-location services) (the “IP Network Release”).

<sup>8</sup> See *id.*, at 7899.

<sup>9</sup> ICE is owned by the Exchange’s ultimate parent, Intercontinental Exchange, Inc., and so the Exchange has an indirect interest in the ICE feeds. The ICE feeds include both market data and trading and clearing services, but the Exchange includes it as a Third Party Data Feed. In order for a User to receive an ICE feed, ICE must provide authorization for the User to receive both data and trading and clearing services.

order entry to the Exchange's execution system, and a User's connection to a Third Party System is not through the Exchange's execution system.<sup>10</sup>

The Exchange charges a monthly recurring fee for connectivity to a Third Party System. Specifically, when a User requests access to a Third Party System, it identifies the applicable third party market or other content service provider and what bandwidth connection it requires.

The monthly recurring fee the Exchange charges Users for unicast connectivity to each Third Party System varies by the bandwidth of the connection, as follows:

| <b>Bandwidth of connection to Third Party System</b> | <b>Monthly recurring fee per connection to Third Party System</b> |
|--|---|
| 1Mb  | \$200   |
| 3Mb  | \$400   |
| 5Mb  | \$500   |
| 10Mb   | \$800   |
| 25Mb   | \$1,200   |
| 50Mb   | \$1,800   |
| 100Mb  | \$2,500   |
| 200 Mb   | \$3,000   |
| 1 Gb   | \$3,500   |

The Exchange provides connectivity to the following Third Party Systems:

|   |
|---|
| Americas Trading Group (ATG)            |
| BATS                                    |
| Boston Options Exchange (BOX)           |
| Chicago Board Options Exchange (CBOE)   |
| Credit Suisse                           |
| International Securities Exchange (ISE) |
| Nasdaq                                  |
| National Stock Exchange                 |
| NYFIX Marketplace                       |

In addition to the connectivity fees, the Exchange proposes to add language to the Fee Schedules stating the following:

Pricing for access to the execution systems of third party markets and other service providers (Third Party Systems) is for connectivity only.

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<sup>10</sup> The Exchange has a dedicated network connection to each of the Third Party Systems.



Connectivity to Third Party Systems is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Systems is over the IP network. Any applicable fees are charged independently by the relevant third party content service provider. The Exchange is not the exclusive method to connect to Third Party Systems.

*Connectivity to Third Party Data Feeds*

The Exchange proposes to revise the Fee Schedules to provide that Users may obtain connectivity to Third Party Data Feeds for a fee. The Exchange receives Third Party Data Feeds from multiple national securities exchanges and other content service providers at its data center. It then provides connectivity to that data to Users for a fee. With the exceptions of Global OTC and NYSE Global Index, Users connect to Third Party Data Feeds over the IP network.<sup>11</sup>

The Exchange notes that charging Users a monthly fee for connectivity to Third Party Data Feeds is consistent with the monthly fee Nasdaq charges its co-location customers for connectivity to third party data. For instance, Nasdaq charges its co-location customers monthly fees of \$1,500 and \$4,000 for connectivity to BATS Y and BATS, respectively, and of \$2,500 for connectivity to EDGA or EDGX.<sup>12</sup>

In order to connect to a Third Party Data Feed, a User enters into a contract with the relevant third party market or other content service provider, pursuant to which the content service provider charges the User for the Third Party Data Feed. The Exchange receives the Third Party Data Feed over its fiber optic network and, after the data provider and User enter into the contract and the Exchange receives authorization from the data provider, the Exchange re-transmits the data to the User over the User's port. The Exchange charges the User for the connectivity to the Third Party Data Feed. A User only receives, and is only charged for, connectivity to the Third Party Data Feeds for which it enters into contracts.

With the exception of the ICE, Global OTC and NYSE Global Index feeds,<sup>13</sup> the

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<sup>11</sup> See IP Network Release, *supra* note 7, at 7899 (“The IP network also provides Users with access to away market data products.”). Users can connect to Global OTC and NYSE Global Index over the IP network or the Liquidity Center Network (“LCN”), a local area network available in the data center.

<sup>12</sup> See Nasdaq Stock Market Rule 7034.

<sup>13</sup> ICE and the Global OTC alternative trading system are both owned by the Exchange's ultimate parent, Intercontinental Exchange, Inc., and so the Exchange has an indirect interest in the ICE and Global OTC feeds. The NYSE Global Index feed includes index and exchange traded product valuations data, with data

Exchange has no affiliation with the sellers of the Third Party Data Feeds. It has no right to use the Third Party Data Feeds other than as a redistributor of the data. The Third Party Data Feeds do not provide access or order entry to the Exchange's execution system. With the exception of the ICE feeds, the Third Party Data Feeds do not provide access or order entry to the execution systems of the third party generating the feed.<sup>14</sup> The Exchange receives Third Party Data Feeds via arms-length agreements and it has no inherent advantage over any other distributor of such data.

The Exchange charges a monthly recurring fee for connectivity to each Third Party Data Feed. The monthly recurring fee is per Third Party Data Feed, with the exception that the monthly recurring fee for SuperFeed and MSCI varies by the bandwidth of the connection. Depending on its needs and bandwidth, a User may opt to receive all or some of the feeds or services included in a Third Party Data Feed.

The following table shows the feeds that connectivity to each Third Party Data Feed provides, together with the applicable monthly recurring fee.

| <b>Third Party Data Feed</b>                            | <b>Monthly Recurring Connectivity Fee per Third Party Data Feed</b> |
|---|---|
| Bats BZX Exchange (BZX) and Bats BYX Exchange (BYX)     | \$2,000   |
| Bats EDGX Exchange (EDGX) and Bats EDGA Exchange (EDGA) | \$2,000   |
| Boston Options Exchange (BOX)                           | \$1,000   |
| Chicago Board Options Exchange (CBOE)                   | \$2,000   |
| Chicago Stock Exchange (CHX)                            | \$400   |
| Euronext  | \$600   |
| Financial Industry Regulatory Authority (FINRA)         | \$500   |
| Global OTC  | \$100   |
| Intercontinental Exchange (ICE)                         | \$1,500   |

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drawn from the Exchange, the Affiliate SROs, and third party exchanges. Because it includes third party data, the NYSE Global Index feed is considered a Third Party Data Feed. As with all Third Party Data Feeds, the Exchange is not the exclusive method to connect to the ICE, Global OTC or NYSE Global Index feeds.

<sup>14</sup> Unlike other Third Party Data Feeds, the ICE feeds include both market data and trading and clearing services. In order to receive the ICE feeds, a User must receive authorization from ICE to receive both market data and trading and clearing services.

| <b>Third Party Data Feed</b>                  | <b>Monthly Recurring Connectivity Fee per Third Party Data Feed</b> |
|---|---|
| Montréal Exchange (MX)                        | \$1,000   |
| MSCI 5 Mb                                     | \$500   |
| MSCI 25 Mb                                    | \$1,200   |
| NASDAQ Stock Market                           | \$2,000   |
| NASDAQ OMX Global Index Data Service          | \$100   |
| NASDAQ OMDF                                   | \$100   |
| NASDAQ UQDF& UTDF                             | \$500   |
| NYSE Global Index                             | \$100   |
| OTC Markets Group                             | \$1,000   |
| SR Labs - SuperFeed $\leq$ 500 Mb             | \$250   |
| SR Labs – SuperFeed >500 Mb to $\leq$ 1.25 Gb | \$800   |
| SR Labs – SuperFeed >1.25 Gb                  | \$1,000   |
| TMX Group                                     | \$2,500   |

In addition to the above connectivity fees, the Exchange proposes to add the following language to the Fee Schedules:

Pricing for data feeds from third party markets and other content service providers (Third Party Data Feeds) is for connectivity only. Connectivity to Third Party Data Feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Data Feeds is over the IP network, with the exception that Users can connect to Global OTC and NYSE Global Index over the IP network or LCN. Market data fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to Third Party Data Feeds.

Third Party Data Feed providers may charge redistribution fees, such as Nasdaq’s Extranet Access Fees and OTC Markets Group’s Access Fees.<sup>15</sup> When the Exchange receives a redistribution fee, it passes through the charge to the User, without change to the fee. The fee is labeled as a pass-through of a redistribution fee on the User’s invoice. The Exchange proposes to add language to the Fee Schedules accordingly.

<sup>15</sup> See NASDAQ Stock Market LLC Rule 7025, “Extranet Access Fee”, and OTC Markets Market Data Distribution Agreement Appendix B, “Fees” at <http://www.otcmarkets.com/content/doc/market-data-fees-2016.pdf>. See also Securities Exchange Act Release No. 74040 (January 13, 2015), 80 FR 2460 (January 16, 2015) (SR-NASDAQ-2015-003).

The Exchange provides third party markets or content providers that are also Users connectivity to their own Third Party Data Feeds. The Exchange does not charge Users that are third party markets or content providers for connectivity to their own feeds, as in the Exchange’s experience such parties generally receive their own feeds for purposes of diagnostics and testing. The Exchange proposes to add language to the Fee Schedules accordingly.

*Connectivity to Third Party Testing and Certification Feeds*

The Exchange offers Users connectivity to third party certification and testing feeds. Certification feeds are used to certify that a User conforms to any of the relevant content service provider’s requirements for accessing Third Party Systems or receiving Third Party Data, while testing feeds provide Users an environment in which to conduct tests with non-live data.<sup>16</sup> Such feeds, which are solely used for certification and testing and do not carry live production data, are available over the IP network.

The Exchange proposes to revise the Fee Schedules to include connectivity to third party certification and testing feeds. The Exchange charges a connectivity fee of \$100 per month per feed.

The Exchange proposes to add the following connectivity fees and language to the Fee Schedules:

|   |                                      |
|---|--------------------------------------|
| Connectivity to third party certification and testing feeds | \$100 monthly recurring fee per feed |
|---|--------------------------------------|

The Exchange provides connectivity to third party testing and certification feeds provided by third party markets and other content service providers. Pricing for third party testing and certification feeds is for connectivity only. Connectivity to third party testing and certification feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to third party testing and certification feeds is over the IP network. Any applicable fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to third party testing and certification feeds.

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<sup>16</sup> For example, a User that trades on a third party exchange may wish to test the exchange’s upcoming releases and product releases or may wish to test a new algorithm in a testing environment prior to making it live.

### *Connectivity to DTCC*

The Exchange provides Users connectivity to DTCC for clearing, fund transfer, insurance, and settlement services.<sup>17</sup> The Exchange proposes to revise the Fee Schedules to include connectivity to DTCC. The Exchange charges a connectivity fee of \$500 per month for connections to DTCC of 5 Mb and \$2,500 for connections of 50 Mb. Connectivity to DTCC is available over the IP network.

In order to connect to DTCC, a User enters into a contract with DTCC, pursuant to which DTCC charges the User for the services provided. The Exchange receives the DTCC feed over its fiber optic network and, after DTCC and the User enter into the services contract and the Exchange receives authorization from DTCC, the Exchange provides connectivity to DTCC to the User over the User's IP network port. The Exchange charges the User for the connectivity to DTCC.

Connectivity to DTCC does not provide access or order entry to the Exchange's execution system, and a User's connection to DTCC is not through the Exchange's execution system.

The Exchange proposes to add the following connectivity fees and language to the Fee Schedules:

|                          |                               |
|--------------------------|-------------------------------|
| 5 Mb connection to DTCC  | \$500 monthly recurring fee   |
| 50 Mb connection to DTCC | \$2,500 monthly recurring fee |

Pricing for connectivity to DTCC feeds is for connectivity only. Connectivity to DTCC feeds is subject to any technical provisioning requirements and authorization from DTCC. Connectivity to DTCC feeds is over the IP network. Any applicable fees are charged independently by DTCC. The Exchange is not the exclusive method to connect to DTCC feeds.

### Virtual Control Circuits

Finally, the Exchange proposes to revise the Fee Schedules to offer VCCs between two Users. VCCs are connections between two points over dedicated bandwidth using the IP network. A VCC (previously called a "peer to peer" connection) is a two-way connection which the two participants can use for any

<sup>17</sup> Such connectivity to DTCC is distinct from the access to shared data services for clearing and settlement services that a User receives when it purchases access to the LCN or IP network. The shared data services allow Users and other entities with access to the Trading Systems to post files for settlement and clearing services to access.

purpose.

The Exchange bills the User requesting the VCC, but will not set up a VCC until the other User confirms that it wishes to have the VCC set up.

The Exchange proposes to revise the Fee Schedules to include VCCs between two Users. The fee for VCCs is based on the bandwidth utilized, as follows:

| Type of Service                              | Description | Amount of Charge       |
|--|-------------|------------------------|
| Virtual Control Circuit<br>between two Users | 1Mb         | \$200 monthly charge   |
|  | 3Mb         | \$400 monthly charge   |
|  | 5Mb         | \$500 monthly charge   |
|  | 10Mb        | \$800 monthly charge   |
|  | 25Mb        | \$1,200 monthly charge |
|  | 50Mb        | \$1,800 monthly charge |
|  | 100Mb       | \$2,500 monthly charge |

### General

As is the case with all Exchange co-location arrangements, (i) neither a User nor any of the User's customers would be permitted to submit orders directly to the Exchange unless such User or customer is a member organization, a Sponsored Participant or an agent thereof (e.g., a service bureau providing order entry services); (ii) use of the co-location services proposed herein would be completely voluntary and available to all Users on a non-discriminatory basis;<sup>18</sup> and (iii) a User would only incur one charge for the particular co-location service described herein, regardless of whether the User connects only to the Exchange or to the Exchange and one or both of the Affiliate SROs.<sup>19</sup>

The proposed change is not otherwise intended to address any other issues relating to co-location services and/or related fees, and the Exchange is not aware

<sup>18</sup> As is currently the case, Users that receive co-location services from the Exchange will not receive any means of access to the Exchange's trading and execution systems that is separate from, or superior to, that of other Users. In this regard, all orders sent to the Exchange enter the Exchange's trading and execution systems through the same order gateway, regardless of whether the sender is co-located in the data center or not. In addition, co-located Users do not receive any market data or data service product that is not available to all Users, although Users that receive co-location services normally would expect reduced latencies in sending orders to, and receiving market data from, the Exchange.

<sup>19</sup> See SR-NYSEArca-2013-80, supra note 5, at 50459. The Affiliate SROs have also submitted substantially the same proposed rule change to propose the changes described herein. See SR-NYSE-2016-45 and SR-NYSEArca-2016-89.

of any problems that Users would have in complying with the proposed change.

(b) Statutory Basis

The Exchange believes that the proposed rule change is consistent with Section 6(b) of the Act,<sup>20</sup> in general, and furthers the objectives of Sections 6(b)(5) of the Act,<sup>21</sup> in particular, because it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to, and perfect the mechanisms of, a free and open market and a national market system and, in general, to protect investors and the public interest and because it is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange believes that the proposed changes remove impediments to, and perfect the mechanisms of, a free and open market and a national market system and, in general, protect investors and the public interest because, by offering Access and Connectivity, the Exchange gives each User additional options for addressing its access and connectivity needs, responding to User demand for access and connectivity options. Providing Access and Connectivity helps each User tailor its data center operations to the requirements of its business operations by allowing it to select the form and latency of access and connectivity that best suits its needs. The Exchange provides Access and Connectivity as conveniences to Users. Use of Access or Connectivity is completely voluntary, and each User has several other access and connectivity options available to it. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the SFTI network, or a combination thereof.

The Exchange believes that providing access to Third Party Systems and connectivity to Third Party Data Feeds, third party testing and certification feeds and DTCC, as well as revising the Fee Schedules to describe such services, would remove impediments to, and perfect the mechanisms of, a free and open market and a national market system and, in general, protect investors and the public interest because the proposed changes would make the descriptions of market participants' access and connectivity options and the related fees more accessible and transparent, thereby providing market participants with clarity as to what

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<sup>20</sup> 15 U.S.C. 78f(b).

<sup>21</sup> 15 U.S.C. 78f(b)(5).

options for connectivity are available to them and what the related costs are. Including a description of the access to Third Party Systems and connectivity to Third Party Data Feeds that Users receive is consistent with Nasdaq's Rule 7034, which includes similar information.<sup>22</sup>

In addition, the Exchange believes that providing connectivity to third party testing and certification feeds removes impediments to, and perfects the mechanisms of, a free and open market and a national market system and, in general, protects investors and the public interest because such feeds provide Users an environment in which to conduct tests with non-live data, including testing for upcoming releases and product enhancements or the User's own software development, and allow Users to certify conformance to any applicable technical requirements.

Similarly, the Exchange believes that providing connectivity to DTCC removes impediments to, and perfects the mechanisms of, a free and open market and a national market system and, in general, protects investors and the public interest because it provides efficient connection to clearing, fund transfer, insurance, and settlement services.

The Exchange believes that providing Users with VCCs removes impediments to, and perfects the mechanisms of, a free and open market and a national market system because VCCs provide each User with an additional option for connectivity to another User, helping it tailor its data center operations to the requirements of its business operations by allowing it to select the form of connectivity that best suits its needs. The Exchange provides VCCs as a convenience to Users. Use of a VCC is completely voluntary. As an alternative to an Exchange-provided VCC, a User may connect to another User through a cross connect.

The Exchange also believes that the proposed rule change is consistent with Section 6(b)(4) of the Act,<sup>23</sup> in particular, because it provides for the equitable allocation of reasonable dues, fees, and other charges among its members, issuers and other persons using its facilities and does not unfairly discriminate between customers, issuers, brokers or dealers.

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<sup>22</sup> See Nasdaq Stock Market Rule 7034—Market Data Connectivity (“Pricing is for connectivity only and is similar to connectivity fees imposed by other vendors. The fees are generally based on the amount of bandwidth needed to accommodate a particular feed and Nasdaq is not the exclusive method to get market data connectivity. Market data fees are charged independently by the Nasdaq Stock Market and other exchanges.”)

<sup>23</sup> 15 U.S.C. 78f(b)(4).



The Exchange believes that the proposed fees changes are consistent with Section 6(b)(4) of the Act for multiple reasons. The Exchange operates in a highly competitive market in which exchanges offer co-location services as a means to facilitate the trading and other market activities of those market participants who believe that co-location enhances the efficiency of their operations. Accordingly, fees charged for co-location services are constrained by the active competition for the order flow of, and other business from, such market participants. If a particular exchange charges excessive fees for co-location services, affected market participants will opt to terminate their co-location arrangements with that exchange, and adopt a possible range of alternative strategies, including placing their servers in a physically proximate location outside the exchange's data center (which could be a competing exchange), or pursuing strategies less dependent upon the lower exchange-to-participant latency associated with co-location. Accordingly, the exchange charging excessive fees would stand to lose not only co-location revenues but also the liquidity of the formerly co-located trading firms, which could have additional follow-on effects on the market share and revenue of the affected exchange.

The Exchange believes that the services and fees proposed herein are equitably allocated and not unfairly discriminatory because, in addition to the services being completely voluntary, they are available to all Users on an equal basis (i.e., the same products and services are available to all Users). All Users that voluntarily select to receive access to Third Party Systems, connectivity to Third Party Data Feeds, third party testing and certification feeds and DTCC, or a VCC between Users would be charged the same amount for the same services.

The Exchange believes that the services and fees proposed herein are reasonable, equitably allocated and not unfairly discriminatory because the Exchange provides Access and Connectivity as conveniences to Users. Use of Access or Connectivity is completely voluntary, and each User has several other access and connectivity options available to it. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the SFTI network, or a combination thereof. Users that opt to use Access or Connectivity would not receive access or connectivity that is not available to all Users, as all market participants that contract with the relevant market or content provider may receive access or connectivity. Similarly, the Exchange provides VCCs between Users as a convenience to Users. Use of a VCC is completely voluntary. As an alternative to an Exchange-provided VCC, a User may connect to another User through a cross connect.

The Exchange believes that the proposed charges are reasonable, equitably allocated and not unfairly discriminatory because the Exchange offers Access,

Connectivity, and VCCs as conveniences to Users, but in order to do so must provide, maintain and operate the data center facility hardware and technology infrastructure. The Exchange must handle the installation, administration, monitoring, support and maintenance of such services, including by responding to any production issues. Since the inception of co-location, the Exchange has made numerous improvements to the network hardware and technology infrastructure and has established additional administrative controls. The Exchange has expanded the network infrastructure to keep pace with the increased number of services available to Users, including the increasing bandwidth required for Access and Connectivity, including resilient and redundant feeds. In addition, in order to provide connectivity to Third Party Data Feeds, Third Party Systems, third party testing and certification feeds and DTCC, the Exchange must maintain multiple connections to each Third Party Data Feed, Third Party System, and DTCC, allowing the Exchange to provide resilient and redundant connections; adapt to any changes made by the relevant third party; and cover any applicable fees (other than redistribution fees) charged by the relevant third party, such as port fees.

The Exchange believes that charging separate connectivity fees for Third Party Data Feeds and access to Third Party Systems, third party testing and certification feeds and connectivity to DTCC is reasonable and not unfairly discriminatory because, in the Exchange's experience, not all Users connect to Third Party Data Feeds, Third Party Systems, third party testing and certification feeds or DTCC. By charging only those Users that receive such connectivity, only the Users that directly benefit from it support its cost. In addition, Users are not required to use any of their bandwidth to connect to Third Party Data Feeds, third party testing and certification feeds or DTCC, or to access Third Party Systems, unless they wish to do so.

The Exchange believes the fees for connectivity to Third Party Data Feeds are reasonable because they allow the Exchange to defray or cover the costs associated with offering Users connectivity to Third Party Data Feeds while providing Users the convenience of receiving such Third Party Data Feeds within co-location, helping them tailor their data center operations to the requirements of their business operations by allowing them to select the form and latency of connectivity that best suits their needs. The Exchange believes that its proposed charges for connectivity to Third Party Data Feeds are similar to the connectivity fees Nasdaq imposes on its co-location customers. For instance, Nasdaq charges its co-location customers monthly fees of \$1,500 and \$4,000 for connectivity to BATS Y and BATS, respectively, and of \$2,500 for connectivity to EDGA or EDGX.<sup>24</sup>

The Exchange believes that its connectivity fees for access to Third Party Systems are reasonable because they allow the Exchange to defray or cover the costs

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See Nasdaq Stock Market Rule 7034.

associated with offering such access while providing Users the convenience of being able to access such Third Party Systems, helping them tailor their data center operations to the requirements of their business operations by allowing them to select the form and latency of connectivity that best suits their needs. Similarly, the Exchange believes that its fees for connectivity to DTCC are reasonable because they allow the Exchange to defray or cover the costs associated with offering such access while providing Users the benefit of an efficient connection to clearing, fund transfer, insurance, and settlement services.

The monthly recurring fees the Exchange charges Users for connectivity to Third Party Systems, the MSCI and SuperFeed Third Party Data Feeds, and DTCC, as well as for VCCs between Users, vary by the bandwidth of the connection. The Exchange also believes such fees are reasonable because the monthly recurring fee varies by the bandwidth of the connection, and so is generally proportional to the bandwidth required. The Exchange notes that some of the monthly recurring fees for connectivity to SuperFeed and DTCC differ from the fees for the other connections of the same bandwidth. The Exchange believes that such difference in pricing is reasonable, equitably allocated and not unfairly discriminatory because, although the bandwidth may be the same, the competitive considerations and the costs the Exchange incurs in providing such connections and VCCs may differ.

The Exchange also believes that its connectivity fees for access to third party testing and certification feeds are reasonable because they allow the Exchange to defray or cover the costs associated with offering such access while providing Users the benefit of having an environment in which to conduct tests with non-live data, including testing for upcoming releases and product enhancements or the User's own software development, and to certify conformance to any applicable technical requirements.

The Exchange believes it is reasonable that redistribution fees charged by providers of Third Party Data Feeds are passed through to the User, without change to the fee. If not passed through, the cost of the re-distribution fees would be factored into the proposed fees for connectivity to Third Party Data Feeds. The Exchange believes that passing through the fees makes them more transparent to the User, allowing the User to better assess the cost of the connectivity to a Third Party Data Feed by seeing the individual components of the cost, i.e. the Exchange's fee and the redistribution fee.

The Exchange believes that it is reasonable that it does not charge third party markets or content providers for connectivity to their own Third Party Data Feeds, as in the Exchange's experience such parties generally receive their own feeds for purposes of diagnostics and testing. The Exchange believes that it removes impediments to, and perfects the mechanisms of, a free and open market and a national market system and, in general, protects investors and the public interest to facilitate such diagnostics and testing.

Finally, the Exchange also believes that its fees for VCCs between two Users are reasonable because they allow the Exchange to defray or cover the costs associated with offering such VCCs while providing Users the benefit of an additional option for connectivity to another User, helping them tailor their data center operations to the requirements of their business operations by allowing them to select the form of connectivity that best suits their needs. As an alternative to an Exchange-provided VCC, a User may connect to another User through a cross connect.

For the reasons above, the proposed changes do not unfairly discriminate between or among market participants that are otherwise capable of satisfying any applicable co-location fees, requirements, terms and conditions established from time to time by the Exchange.

For these reasons, the Exchange believes that the proposal is consistent with the Act.

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

In accordance with Section 6(b)(8) of the Act,<sup>25</sup> the Exchange believes that the proposed rule change will not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act because, in addition to the proposed services being completely voluntary, they are available to all Users on an equal basis (i.e. the same products and services are available to all Users).

The Exchange believes that providing Users with access to Third Party Systems and connectivity to Third Party Data Feeds, third party testing and certification feeds, and DTCC does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act because such Access and Connectivity satisfies User demand for access and connectivity options, and each User has several other access and connectivity options available to it. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the SFTI network, or a combination thereof. Users that opt to use Access or Connectivity would not receive access or connectivity that is not available to all Users, as all market participants that contract with the relevant market or content provider may receive access or connectivity. In this way, the proposed changes would enhance competition by helping Users tailor their Access and Connectivity to the needs of their business operations by allowing them to select the form and latency of access and connectivity that best suits their needs.

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15 U.S.C. 78f(b)(8).

Similarly, the Exchange believes that providing VCCs between Users does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act because providing VCCs satisfies User demand for an alternative to cross connects.

The Exchange believes that revising the Fee Schedules to provide a more detailed description of the Access and Connectivity available to Users would make such descriptions more accessible and transparent, thereby providing market participants with clarity as to what Access and Connectivity is available to them and what the related costs are, thereby enhancing competition by ensuring that all Users have access to the same information regarding Access and Connectivity.

Finally, the Exchange operates in a highly competitive market in which exchanges offer co-location services as a means to facilitate the trading and other market activities of those market participants who believe that co-location enhances the efficiency of their operations. Accordingly, fees charged for co-location services are constrained by the active competition for the order flow of, and other business from, such market participants. If a particular exchange charges excessive fees for co-location services, affected market participants will opt to terminate their co-location arrangements with that exchange, and adopt a possible range of alternative strategies, including placing their servers in a physically proximate location outside the exchange's data center (which could be a competing exchange), or pursuing strategies less dependent upon the lower exchange-to-participant latency associated with co-location. Accordingly, the exchange charging excessive fees would stand to lose not only co-location revenues but also the liquidity of the formerly co-located trading firms, which could have additional follow-on effects on the market share and revenue of the affected exchange. For the reasons described above, the Exchange believes that the proposed rule change reflects this competitive environment.

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

The Exchange has neither solicited nor received written comments on the proposed rule change.

6. Extension of Time Period for Commission Action

Not applicable.

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

Not applicable.

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

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

Exhibit 1 – Form of Notice of Proposed Rule Change for Publication in the Federal Register

Exhibit 5 – Text of the Proposed Rule Change

## SECURITIES AND EXCHANGE COMMISSION

(Release No. 34- ; File No. SR-NYSEARCA-2016-89; Amendment 2)

[Date]

## Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Proposed Rule Change Amending the Co-location Services Offered by the Exchange

Pursuant to Section 19(b)(1)<sup>1</sup> of the Securities Exchange Act of 1934 (the “Act”)<sup>2</sup> and Rule 19b-4 thereunder,<sup>3</sup> notice is hereby given that, on December 9, 2016, NYSE Arca, Inc. (the “Exchange” or “NYSE Arca”) filed with the Securities and Exchange Commission (the “Commission”) the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the self-regulatory organization. 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 proposes to amend the co-location services offered by the Exchange to establish fees relating to Users’ access to third party trading and execution services; connectivity to third party data feeds and testing and certification feeds; access to clearing; and other services. In addition, this proposed rule change reflects changes to the NYSE Arca Options Fee Schedule (the “Options Fee Schedule”) and, through its wholly owned subsidiary NYSE Arca Equities, Inc. (“NYSE Arca Equities”), the NYSE Arca Equities Schedule of Fees and Charges for Exchange Services (the “Equities Fee

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

<sup>2</sup> 15 U.S.C. 78a.

<sup>3</sup> 17 CFR 240.19b-4.

Schedule” and, together with the Options Fee Schedule, the “Fee Schedules”) related to these co-location services. This Amendment No. 2 supersedes the original filing and Amendment 1 in their entirety.<sup>4</sup> The proposed rule change is available on the Exchange’s website at [www.nyse.com](http://www.nyse.com), at the principal office of the Exchange, 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 self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and

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<sup>4</sup> The Securities and Exchange Commission (“Commission”) has issued an order instituting proceedings to determine whether to approve or disapprove the proposed rule change, as modified by amendments 1 and 2. See Securities Exchange Act Release No. 79379 (November 22, 2016), 81 FR 86036 (November 29, 2016) (SR-NYSEArca-2016-89) (the “November 22 Order”). In its filing, as amended by amendment 1, the Exchange proposed adding to the Fee Schedules (a) a more detailed description of the connectivity to certain market data products (the “Included Data Products”) that Users receive with connections to the local area networks available in the data center; and (b) connectivity fees for connecting to other market data products of the Exchange and its affiliates, New York Stock Exchange LLC and NYSE MKT LLC (the “Premium NYSE Data Products”). In the November 22 Order, the Commission cites language from the proposed rule change:

the Exchange also stated that the expectation of co-location was that normally Users would expect reduced latencies in . . . receiving market data from the Exchange by being colocated. Therefore, as the Exchange states in Amendment No. 2, both Included Data Products and Premium NYSE Data Products are ‘directly related to the purpose of co-location.’

Id., at 86040. It goes on to say that, if Included Data Products and Premium NYSE Data Products are “integral to co-located Users for trading on the Exchange,” it was questionable whether obtaining the information from another source is a viable alternative. Id. The Exchange disagrees with the Commission’s description of Included Data Products and Premium NYSE Data Products as “integral” to Users for trading on the Exchange. Being related to the purpose of co-location is not the same as being integral for trading. A User is not required to receive either Included Data Products or Premium NYSE Data Products in order to trade on the Exchange.



discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

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

1. Purpose

The Exchange proposes to amend the co-location<sup>5</sup> services offered by the Exchange to establish fees relating to Users’<sup>6</sup> access to third party trading and execution services; connectivity to third party data feeds and testing and certification feeds; access to clearing; and other services.

More specifically, the Exchange proposes to revise the Fee Schedules to include:

- a. fees for connectivity to:
  - the execution systems of third party markets and other content

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<sup>5</sup> The Exchange initially filed rule changes relating to its co-location services with the Commission in 2010. See Securities Exchange Act Release No. 63275 (November 8, 2010), 75 FR 70048 (November 16, 2010) (SR-NYSEArca-2010-100) (the “Original Co-location Filing”). The Exchange operates a data center in Mahwah, New Jersey (the “data center”) from which it provides co-location services to Users.

<sup>6</sup> For purposes of the Exchange’s co-location services, a “User” means any market participant that requests to receive co-location services directly from the Exchange. See Securities Exchange Act Release No. 76010 (September 29, 2015), 80 FR 60197 (October 5, 2015) (SR-NYSEArca-2015-82). As specified in the Fee Schedules, a User that incurs co-location fees for a particular co-location service pursuant thereto would not be subject to co-location fees for the same co-location service charged by the Exchange’s affiliates New York Stock Exchange LLC (“NYSE LLC”) and NYSE MKT LLC (“NYSE MKT and, together with NYSE LLC, the “Affiliate SROs”). See Securities Exchange Act Release No. 70173 (August 13, 2013), 78 FR 50459 (August 19, 2013) (SR-NYSEArca-2013-80).

- service providers (“Third Party Systems”);
  - data feeds from third party markets and other content service providers (the “Third Party Data Feeds”);
  - third party testing and certification feeds;
  - Depository Trust & Clearing Corporation (“DTCC”) services; and
- b. fees for virtual control circuits (“VCCs”) between two Users. VCCs are unicast connections between two participants over dedicated bandwidth.<sup>7</sup>

The Exchange provides access to Third Party Systems (“Access”) and connectivity to Third Party Data Feeds, third party testing and certification feeds, and DTCC (collectively, “Connectivity”) as conveniences to Users. Use of Access or Connectivity is completely voluntary, and several other access and connectivity options are available to a User. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the Exchange’s Secure Financial Transaction Infrastructure (“SFTI”) network, or a combination thereof.

Similarly, the Exchange provides VCCs as a convenience to Users. Use of a VCC is completely voluntary. As an alternative to an Exchange-provided VCC, a User may

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<sup>7</sup> Information flows over existing network connections in two formats: “unicast” format, which is a format that allows one-to-one communication, similar to a phone line, in which information is sent to and from the Exchange; and “multicast” format, which is a format in which information is sent one-way from the Exchange to multiple recipients at once, like a radio broadcast.

connect to another User through a fiber connection (“cross connect”).<sup>8</sup>

### Connectivity

#### *Connectivity to Third Party Systems*

The Exchange proposes to revise the Fee Schedules to provide that Users may obtain connectivity to Third Party Systems of multiple third party markets and other content service providers for a fee. Users connect to Third Party Systems over the internet protocol (“IP”) network, a local area network available in the data center.<sup>9</sup> The Exchange selects what connectivity to Third Party Systems to offer in the data center based on User demand.

In order to obtain access to a Third Party System, a User enters into an agreement with the relevant third party content service provider, pursuant to which the third party content service provider charges the User for access to the Third Party System. The Exchange then establishes a unicast connection between the User and the relevant third party content service provider over the IP network. The Exchange charges the User for the connectivity to the Third Party System. A User only receives, and is only charged for, access to Third Party Systems for which it enters into agreements with the third party content service provider.

With the exception of the Intercontinental Exchange (“ICE”) feed,<sup>10</sup> the Exchange

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<sup>8</sup> See Original Co-location Filing, *supra* note 5, at 70049 and Securities Exchange Act Release No. 74219 (February 6, 2015), 80 FR 7899 (February 12, 2015) (SR-NYSEArca-2015-03) (notice of filing and immediate effectiveness of proposed rule change to include IP network connections and fiber cross connects between a User’s cabinet and non-User’s equipment as co-location services) (the “IP Network Release”).

<sup>9</sup> See *id.*, at 7899.

<sup>10</sup> ICE is owned by the Exchange’s ultimate parent, Intercontinental Exchange, Inc.,

has no ownership interest in the Third Party Systems. Establishing a User's access to a Third Party System does not give the Exchange any right to use the Third Party Systems. Connectivity to a Third Party System does not provide access or order entry to the Exchange's execution system, and a User's connection to a Third Party System is not through the Exchange's execution system.<sup>11</sup>

The Exchange charges a monthly recurring fee for connectivity to a Third Party System. Specifically, when a User requests access to a Third Party System, it identifies the applicable third party market or other content service provider and what bandwidth connection it requires.

The monthly recurring fee the Exchange charges Users for unicast connectivity to each Third Party System varies by the bandwidth of the connection, as follows:

| <b>Bandwidth of connection to Third Party System</b> | <b>Monthly recurring fee per connection to Third Party System</b> |
|--|---|
| 1Mb  | \$200   |
| 3Mb  | \$400   |
| 5Mb  | \$500   |
| 10Mb   | \$800   |
| 25Mb   | \$1,200   |
| 50Mb   | \$1,800   |
| 100Mb  | \$2,500   |
| 200 Mb   | \$3,000   |
| 1 Gb   | \$3,500   |

The Exchange provides connectivity to the following Third Party Systems:

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and so the Exchange has an indirect interest in the ICE feeds. The ICE feeds include both market data and trading and clearing services, but the Exchange includes it as a Third Party Data Feed. In order for a User to receive an ICE feed, ICE must provide authorization for the User to receive both data and trading and clearing services.

<sup>11</sup> The Exchange has a dedicated network connection to each of the Third Party Systems.

|   |
|---|
| Americas Trading Group (ATG)            |
| BATS                                    |
| Boston Options Exchange (BOX)           |
| Chicago Board Options Exchange (CBOE)   |
| Credit Suisse                           |
| International Securities Exchange (ISE) |
| Nasdaq                                  |
| National Stock Exchange                 |
| NYFIX Marketplace                       |

In addition to the connectivity fees, the Exchange proposes to add language to the Fee Schedules stating the following:

Pricing for access to the execution systems of third party markets and other service providers (Third Party Systems) is for connectivity only. Connectivity to Third Party Systems is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Systems is over the IP network. Any applicable fees are charged independently by the relevant third party content service provider. The Exchange is not the exclusive method to connect to Third Party Systems.

*Connectivity to Third Party Data Feeds*

The Exchange proposes to revise the Fee Schedules to provide that Users may obtain connectivity to Third Party Data Feeds for a fee. The Exchange receives Third Party Data Feeds from multiple national securities exchanges and other content service providers at its data center. It then provides connectivity to that data to Users for a fee. With the exceptions of Global OTC and NYSE Global Index, Users connect to Third Party Data Feeds over the IP network.<sup>12</sup>

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<sup>12</sup> See IP Network Release, *supra* note 8, at 7899 (“The IP network also provides Users with access to away market data products.”). Users can connect to Global OTC and NYSE Global Index over the IP network or the Liquidity Center

The Exchange notes that charging Users a monthly fee for connectivity to Third Party Data Feeds is consistent with the monthly fee Nasdaq charges its co-location customers for connectivity to third party data. For instance, Nasdaq charges its co-location customers monthly fees of \$1,500 and \$4,000 for connectivity to BATS Y and BATS, respectively, and of \$2,500 for connectivity to EDGA or EDGX.<sup>13</sup>

In order to connect to a Third Party Data Feed, a User enters into a contract with the relevant third party market or other content service provider, pursuant to which the content service provider charges the User for the Third Party Data Feed. The Exchange receives the Third Party Data Feed over its fiber optic network and, after the data provider and User enter into the contract and the Exchange receives authorization from the data provider, the Exchange re-transmits the data to the User over the User's port. The Exchange charges the User for the connectivity to the Third Party Data Feed. A User only receives, and is only charged for, connectivity to the Third Party Data Feeds for which it enters into contracts.

With the exception of the ICE, Global OTC and NYSE Global Index feeds,<sup>14</sup> the Exchange has no affiliation with the sellers of the Third Party Data Feeds. It has no right

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Network ("LCN"), a local area network available in the data center.

<sup>13</sup> See Nasdaq Stock Market Rule 7034.

<sup>14</sup> ICE and the Global OTC alternative trading system are both owned by the Exchange's ultimate parent, Intercontinental Exchange, Inc., and so the Exchange has an indirect interest in the ICE and Global OTC feeds. The NYSE Global Index feed includes index and exchange traded product valuations data, with data drawn from the Exchange, the Affiliate SROs, and third party exchanges. Because it includes third party data, the NYSE Global Index feed is considered a Third Party Data Feed. As with all Third Party Data Feeds, the Exchange is not the exclusive method to connect to the ICE, Global OTC or NYSE Global Index feeds.

to use the Third Party Data Feeds other than as a redistributor of the data. The Third Party Data Feeds do not provide access or order entry to the Exchange's execution system. With the exception of the ICE feeds, the Third Party Data Feeds do not provide access or order entry to the execution systems of the third party generating the feed.<sup>15</sup> The Exchange receives Third Party Data Feeds via arms-length agreements and it has no inherent advantage over any other distributor of such data.

The Exchange charges a monthly recurring fee for connectivity to each Third Party Data Feed. The monthly recurring fee is per Third Party Data Feed, with the exception that the monthly recurring fee for SuperFeed and MSCI varies by the bandwidth of the connection. Depending on its needs and bandwidth, a User may opt to receive all or some of the feeds or services included in a Third Party Data Feed.

The following table shows the feeds that connectivity to each Third Party Data Feed provides, together with the applicable monthly recurring fee.

| <b>Third Party Data Feed</b>                            | <b>Monthly Recurring Connectivity Fee per Third Party Data Feed</b> |
|---|---|
| Bats BZX Exchange (BZX) and Bats BYX Exchange (BYX)     | \$2,000   |
| Bats EDGX Exchange (EDGX) and Bats EDGA Exchange (EDGA) | \$2,000   |
| Boston Options Exchange (BOX)                           | \$1,000   |
| Chicago Board Options Exchange (CBOE)                   | \$2,000   |
| Chicago Stock Exchange (CHX)                            | \$400   |
| Euronext  | \$600   |
| Financial Industry Regulatory Authority (FINRA)         | \$500   |

<sup>15</sup> Unlike other Third Party Data Feeds, the ICE feeds include both market data and trading and clearing services. In order to receive the ICE feeds, a User must receive authorization from ICE to receive both market data and trading and clearing services.

| <b>Third Party Data Feed</b>                  | <b>Monthly Recurring Connectivity Fee per Third Party Data Feed</b> |
|---|---|
| Global OTC                                    | \$100   |
| Intercontinental Exchange (ICE)               | \$1,500   |
| Montréal Exchange (MX)                        | \$1,000   |
| MSCI 5 Mb                                     | \$500   |
| MSCI 25 Mb                                    | \$1,200   |
| NASDAQ Stock Market                           | \$2,000   |
| NASDAQ OMX Global Index Data Service          | \$100   |
| NASDAQ OMDF                                   | \$100   |
| NASDAQ UQDF& UTDF                             | \$500   |
| NYSE Global Index                             | \$100   |
| OTC Markets Group                             | \$1,000   |
| SR Labs - SuperFeed $\leq$ 500 Mb             | \$250   |
| SR Labs – SuperFeed >500 Mb to $\leq$ 1.25 Gb | \$800   |
| SR Labs – SuperFeed >1.25 Gb                  | \$1,000   |
| TMX Group                                     | \$2,500   |

In addition to the above connectivity fees, the Exchange proposes to add the following language to the Fee Schedules:

Pricing for data feeds from third party markets and other content service providers (Third Party Data Feeds) is for connectivity only. Connectivity to Third Party Data Feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed.

Connectivity to Third Party Data Feeds is over the IP network, with the exception that Users can connect to Global OTC and NYSE Global Index over the IP network or LCN. Market data fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to Third Party Data Feeds.

Third Party Data Feed providers may charge redistribution fees, such as Nasdaq's



Extranet Access Fees and OTC Markets Group's Access Fees.<sup>16</sup> When the Exchange receives a redistribution fee, it passes through the charge to the User, without change to the fee. The fee is labeled as a pass-through of a redistribution fee on the User's invoice. The Exchange proposes to add language to the Fee Schedules accordingly.

The Exchange provides third party markets or content providers that are also Users connectivity to their own Third Party Data Feeds. The Exchange does not charge Users that are third party markets or content providers for connectivity to their own feeds, as in the Exchange's experience such parties generally receive their own feeds for purposes of diagnostics and testing. The Exchange proposes to add language to the Fee Schedules accordingly.

*Connectivity to Third Party Testing and Certification Feeds*

The Exchange offers Users connectivity to third party certification and testing feeds. Certification feeds are used to certify that a User conforms to any of the relevant content service provider's requirements for accessing Third Party Systems or receiving Third Party Data, while testing feeds provide Users an environment in which to conduct tests with non-live data.<sup>17</sup> Such feeds, which are solely used for certification and testing and do not carry live production data, are available over the IP network.

The Exchange proposes to revise the Fee Schedules to include connectivity to

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<sup>16</sup> See NASDAQ Stock Market LLC Rule 7025, "Extranet Access Fee", and OTC Markets Market Data Distribution Agreement Appendix B, "Fees" at <http://www.otcmarkets.com/content/doc/market-data-fees-2016.pdf>. See also Securities Exchange Act Release No. 74040 (January 13, 2015), 80 FR 2460 (January 16, 2015) (SR-NASDAQ-2015-003).

<sup>17</sup> For example, a User that trades on a third party exchange may wish to test the exchange's upcoming releases and product releases or may wish to test a new algorithm in a testing environment prior to making it live.

third party certification and testing feeds. The Exchange charges a connectivity fee of \$100 per month per feed.

The Exchange proposes to add the following connectivity fees and language to the Fee Schedules:

|   |                                      |
|---|--------------------------------------|
| Connectivity to third party certification and testing feeds | \$100 monthly recurring fee per feed |
|---|--------------------------------------|

The Exchange provides connectivity to third party testing and certification feeds provided by third party markets and other content service providers. Pricing for third party testing and certification feeds is for connectivity only. Connectivity to third party testing and certification feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to third party testing and certification feeds is over the IP network. Any applicable fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to third party testing and certification feeds.

*Connectivity to DTCC*

The Exchange provides Users connectivity to DTCC for clearing, fund transfer, insurance, and settlement services.<sup>18</sup> The Exchange proposes to revise the Fee Schedules to include connectivity to DTCC. The Exchange charges a connectivity fee of \$500 per

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<sup>18</sup> Such connectivity to DTCC is distinct from the access to shared data services for clearing and settlement services that a User receives when it purchases access to the LCN or IP network. The shared data services allow Users and other entities with access to the Trading Systems to post files for settlement and clearing services to access.

month for connections to DTCC of 5 Mb and \$2,500 for connections of 50 Mb.

Connectivity to DTCC is available over the IP network.

In order to connect to DTCC, a User enters into a contract with DTCC, pursuant to which DTCC charges the User for the services provided. The Exchange receives the DTCC feed over its fiber optic network and, after DTCC and the User enter into the services contract and the Exchange receives authorization from DTCC, the Exchange provides connectivity to DTCC to the User over the User's IP network port. The Exchange charges the User for the connectivity to DTCC.

Connectivity to DTCC does not provide access or order entry to the Exchange's execution system, and a User's connection to DTCC is not through the Exchange's execution system.

The Exchange proposes to add the following connectivity fees and language to the Fee Schedules:

|                          |                               |
|--------------------------|-------------------------------|
| 5 Mb connection to DTCC  | \$500 monthly recurring fee   |
| 50 Mb connection to DTCC | \$2,500 monthly recurring fee |

Pricing for connectivity to DTCC feeds is for connectivity only.

Connectivity to DTCC feeds is subject to any technical provisioning requirements and authorization from DTCC. Connectivity to DTCC feeds is over the IP network. Any applicable fees are charged independently by DTCC. The Exchange is not the exclusive method to connect to DTCC feeds.

#### Virtual Control Circuits

Finally, the Exchange proposes to revise the Fee Schedules to offer VCCs

between two Users. VCCs are connections between two points over dedicated bandwidth using the IP network. A VCC (previously called a “peer to peer” connection) is a two-way connection which the two participants can use for any purpose.

The Exchange bills the User requesting the VCC, but will not set up a VCC until the other User confirms that it wishes to have the VCC set up.

The Exchange proposes to revise the Fee Schedules to include VCCs between two Users. The fee for VCCs is based on the bandwidth utilized, as follows:

| Type of Service                              | Description | Amount of Charge       |
|--|-------------|------------------------|
| Virtual Control Circuit<br>between two Users | 1Mb         | \$200 monthly charge   |
|  | 3Mb         | \$400 monthly charge   |
|  | 5Mb         | \$500 monthly charge   |
|  | 10Mb        | \$800 monthly charge   |
|  | 25Mb        | \$1,200 monthly charge |
|  | 50Mb        | \$1,800 monthly charge |
|  | 100Mb       | \$2,500 monthly charge |

#### General

As is the case with all Exchange co-location arrangements, (i) neither a User nor any of the User’s customers would be permitted to submit orders directly to the Exchange unless such User or customer is a member organization, a Sponsored Participant or an agent thereof (e.g., a service bureau providing order entry services); (ii) use of the co-location services proposed herein would be completely voluntary and available to all Users on a non-discriminatory basis;<sup>19</sup> and (iii) a User would only incur one charge for

<sup>19</sup> As is currently the case, Users that receive co-location services from the Exchange will not receive any means of access to the Exchange’s trading and execution systems that is separate from, or superior to, that of other Users. In this regard, all orders sent to the Exchange enter the Exchange’s trading and execution systems through the same order gateway, regardless of whether the sender is co-located in the data center or not. In addition, co-located Users do not receive any market data or data service product that is not available to all Users, although

the particular co-location service described herein, regardless of whether the User connects only to the Exchange or to the Exchange and one or both of the Affiliate SROs.<sup>20</sup>

The proposed change is not otherwise intended to address any other issues relating to co-location services and/or related fees, and the Exchange is not aware of any problems that Users would have in complying with the proposed change.

## 2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with Section 6(b) of the Act,<sup>21</sup> in general, and furthers the objectives of Sections 6(b)(5) of the Act,<sup>22</sup> in particular, because it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to, and perfect the mechanisms of, a free and open market and a national market system and, in general, to protect investors and the public interest and because it is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

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Users that receive co-location services normally would expect reduced latencies in sending orders to, and receiving market data from, the Exchange.

<sup>20</sup> See SR-NYSEArca-2013-80, supra note 6, at 50459. The Affiliate SROs have also submitted substantially the same proposed rule change to propose the changes described herein. See SR-NYSE-2016-45 and SR-NYSEArca-2016-89.

<sup>21</sup> 15 U.S.C. 78f(b).

<sup>22</sup> 15 U.S.C. 78f(b)(5).

The Exchange believes that the proposed changes remove impediments to, and perfect the mechanisms of, a free and open market and a national market system and, in general, protect investors and the public interest because, by offering Access and Connectivity, the Exchange gives each User additional options for addressing its access and connectivity needs, responding to User demand for access and connectivity options. Providing Access and Connectivity helps each User tailor its data center operations to the requirements of its business operations by allowing it to select the form and latency of access and connectivity that best suits its needs. The Exchange provides Access and Connectivity as conveniences to Users. Use of Access or Connectivity is completely voluntary, and each User has several other access and connectivity options available to it. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the SFTI network, or a combination thereof.

The Exchange believes that providing access to Third Party Systems and connectivity to Third Party Data Feeds, third party testing and certification feeds and DTCC, as well as revising the Fee Schedules to describe such services, would remove impediments to, and perfect the mechanisms of, a free and open market and a national market system and, in general, protect investors and the public interest because the proposed changes would make the descriptions of market participants' access and connectivity options and the related fees more accessible and transparent, thereby

providing market participants with clarity as to what options for connectivity are available to them and what the related costs are. Including a description of the access to Third Party Systems and connectivity to Third Party Data Feeds that Users receive is consistent with Nasdaq's Rule 7034, which includes similar information.<sup>23</sup>

In addition, the Exchange believes that providing connectivity to third party testing and certification feeds removes impediments to, and perfects the mechanisms of, a free and open market and a national market system and, in general, protects investors and the public interest because such feeds provide Users an environment in which to conduct tests with non-live data, including testing for upcoming releases and product enhancements or the User's own software development, and allow Users to certify conformance to any applicable technical requirements.

Similarly, the Exchange believes that providing connectivity to DTCC removes impediments to, and perfects the mechanisms of, a free and open market and a national market system and, in general, protects investors and the public interest because it provides efficient connection to clearing, fund transfer, insurance, and settlement services.

The Exchange believes that providing Users with VCCs removes impediments to, and perfects the mechanisms of, a free and open market and a national market system because VCCs provide each User with an additional option for connectivity to another User, helping it tailor its data center operations to the requirements of its business

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<sup>23</sup> See Nasdaq Stock Market Rule 7034—Market Data Connectivity (“Pricing is for connectivity only and is similar to connectivity fees imposed by other vendors. The fees are generally based on the amount of bandwidth needed to accommodate a particular feed and Nasdaq is not the exclusive method to get market data connectivity. Market data fees are charged independently by the Nasdaq Stock Market and other exchanges.”).

operations by allowing it to select the form of connectivity that best suits its needs. The Exchange provides VCCs as a convenience to Users. Use of a VCC is completely voluntary. As an alternative to an Exchange-provided VCC, a User may connect to another User through a cross connect.

The Exchange also believes that the proposed rule change is consistent with Section 6(b)(4) of the Act,<sup>24</sup> in particular, because it provides for the equitable allocation of reasonable dues, fees, and other charges among its members, issuers and other persons using its facilities and does not unfairly discriminate between customers, issuers, brokers or dealers.

The Exchange believes that the proposed fees changes are consistent with Section 6(b)(4) of the Act for multiple reasons. The Exchange operates in a highly competitive market in which exchanges offer co-location services as a means to facilitate the trading and other market activities of those market participants who believe that co-location enhances the efficiency of their operations. Accordingly, fees charged for co-location services are constrained by the active competition for the order flow of, and other business from, such market participants. If a particular exchange charges excessive fees for co-location services, affected market participants will opt to terminate their co-location arrangements with that exchange, and adopt a possible range of alternative strategies, including placing their servers in a physically proximate location outside the exchange's data center (which could be a competing exchange), or pursuing strategies less dependent upon the lower exchange-to-participant latency associated with co-location. Accordingly, the exchange charging excessive fees would stand to lose not

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<sup>24</sup> 15 U.S.C. 78f(b)(4).



only co-location revenues but also the liquidity of the formerly co-located trading firms, which could have additional follow-on effects on the market share and revenue of the affected exchange.

The Exchange believes that the services and fees proposed herein are equitably allocated and not unfairly discriminatory because, in addition to the services being completely voluntary, they are available to all Users on an equal basis (i.e., the same products and services are available to all Users). All Users that voluntarily select to receive access to Third Party Systems, connectivity to Third Party Data Feeds, third party testing and certification feeds and DTCC, or a VCC between Users would be charged the same amount for the same services.

The Exchange believes that the services and fees proposed herein are reasonable, equitably allocated and not unfairly discriminatory because the Exchange provides Access and Connectivity as conveniences to Users. Use of Access or Connectivity is completely voluntary, and each User has several other access and connectivity options available to it. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the SFTI network, or a combination thereof. Users that opt to use Access or Connectivity would not receive access or connectivity that is not available to all Users, as all market participants that contract with the relevant market or content provider may receive access or connectivity. Similarly, the Exchange provides VCCs between Users as a convenience to Users. Use of

a VCC is completely voluntary. As an alternative to an Exchange-provided VCC, a User may connect to another User through a cross connect.

The Exchange believes that the proposed charges are reasonable, equitably allocated and not unfairly discriminatory because the Exchange offers Access, Connectivity, and VCCs as conveniences to Users, but in order to do so must provide, maintain and operate the data center facility hardware and technology infrastructure. The Exchange must handle the installation, administration, monitoring, support and maintenance of such services, including by responding to any production issues. Since the inception of co-location, the Exchange has made numerous improvements to the network hardware and technology infrastructure and has established additional administrative controls. The Exchange has expanded the network infrastructure to keep pace with the increased number of services available to Users, including the increasing bandwidth required for Access and Connectivity, including resilient and redundant feeds. In addition, in order to provide connectivity to Third Party Data Feeds, Third Party Systems, third party testing and certification feeds and DTCC, the Exchange must maintain multiple connections to each Third Party Data Feed, Third Party System, and DTCC, allowing the Exchange to provide resilient and redundant connections; adapt to any changes made by the relevant third party; and cover any applicable fees (other than redistribution fees) charged by the relevant third party, such as port fees.

The Exchange believes that charging separate connectivity fees for Third Party Data Feeds and access to Third Party Systems, third party testing and certification feeds and connectivity to DTCC is reasonable and not unfairly discriminatory because, in the Exchange's experience, not all Users connect to Third Party Data Feeds, Third Party

Systems, third party testing and certification feeds or DTCC. By charging only those Users that receive such connectivity, only the Users that directly benefit from it support its cost. In addition, Users are not required to use any of their bandwidth to connect to Third Party Data Feeds, third party testing and certification feeds or DTCC, or to access Third Party Systems, unless they wish to do so.

The Exchange believes the fees for connectivity to Third Party Data Feeds are reasonable because they allow the Exchange to defray or cover the costs associated with offering Users connectivity to Third Party Data Feeds while providing Users the convenience of receiving such Third Party Data Feeds within co-location, helping them tailor their data center operations to the requirements of their business operations by allowing them to select the form and latency of connectivity that best suits their needs. The Exchange believes that its proposed charges for connectivity to Third Party Data Feeds are similar to the connectivity fees Nasdaq imposes on its co-location customers. For instance, Nasdaq charges its co-location customers monthly fees of \$1,500 and \$4,000 for connectivity to BATS Y and BATS, respectively, and of \$2,500 for connectivity to EDGA or EDGX.<sup>25</sup>

The Exchange believes that its connectivity fees for access to Third Party Systems are reasonable because they allow the Exchange to defray or cover the costs associated with offering such access while providing Users the convenience of being able to access such Third Party Systems, helping them tailor their data center operations to the requirements of their business operations by allowing them to select the form and latency of connectivity that best suits their needs. Similarly, the Exchange believes that its fees

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<sup>25</sup> See Nasdaq Stock Market Rule 7034.

for connectivity to DTCC are reasonable because they allow the Exchange to defray or cover the costs associated with offering such access while providing Users the benefit of an efficient connection to clearing, fund transfer, insurance, and settlement services.

The monthly recurring fees the Exchange charges Users for connectivity to Third Party Systems, the MSCI and SuperFeed Third Party Data Feeds, and DTCC, as well as for VCCs between Users, vary by the bandwidth of the connection. The Exchange also believes such fees are reasonable because the monthly recurring fee varies by the bandwidth of the connection, and so is generally proportional to the bandwidth required. The Exchange notes that some of the monthly recurring fees for connectivity to SuperFeed and DTCC differ from the fees for the other connections of the same bandwidth. The Exchange believes that such difference in pricing is reasonable, equitably allocated and not unfairly discriminatory because, although the bandwidth may be the same, the competitive considerations and the costs the Exchange incurs in providing such connections and VCCs may differ.

The Exchange also believes that its connectivity fees for access to third party testing and certification feeds are reasonable because they allow the Exchange to defray or cover the costs associated with offering such access while providing Users the benefit of having an environment in which to conduct tests with non-live data, including testing for upcoming releases and product enhancements or the User's own software development, and to certify conformance to any applicable technical requirements.

The Exchange believes it is reasonable that redistribution fees charged by providers of Third Party Data Feeds are passed through to the User, without change to the fee. If not passed through, the cost of the re-distribution fees would be factored into the

proposed fees for connectivity to Third Party Data Feeds. The Exchange believes that passing through the fees makes them more transparent to the User, allowing the User to better assess the cost of the connectivity to a Third Party Data Feed by seeing the individual components of the cost, i.e. the Exchange's fee and the redistribution fee.

The Exchange believes that it is reasonable that it does not charge third party markets or content providers for connectivity to their own Third Party Data Feeds, as in the Exchange's experience such parties generally receive their own feeds for purposes of diagnostics and testing. The Exchange believes that it removes impediments to, and perfects the mechanisms of, a free and open market and a national market system and, in general, protects investors and the public interest to facilitate such diagnostics and testing.

Finally, the Exchange also believes that its fees for VCCs between two Users are reasonable because they allow the Exchange to defray or cover the costs associated with offering such VCCs while providing Users the benefit of an additional option for connectivity to another User, helping them tailor their data center operations to the requirements of their business operations by allowing them to select the form of connectivity that best suits their needs. As an alternative to an Exchange-provided VCC, a User may connect to another User through a cross connect.

For the reasons above, the proposed changes do not unfairly discriminate between or among market participants that are otherwise capable of satisfying any applicable co-location fees, requirements, terms and conditions established from time to time by the Exchange.

For these reasons, the Exchange believes that the proposal is consistent with the Act.

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

In accordance with Section 6(b)(8) of the Act,<sup>26</sup> the Exchange believes that the proposed rule change will not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act because, in addition to the proposed services being completely voluntary, they are available to all Users on an equal basis (i.e. the same products and services are available to all Users).

The Exchange believes that providing Users with access to Third Party Systems and connectivity to Third Party Data Feeds, third party testing and certification feeds, and DTCC does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act because such Access and Connectivity satisfies User demand for access and connectivity options, and each User has several other access and connectivity options available to it. As alternatives to using the Access and Connectivity provided by the Exchange, a User may access or connect to such services and products through another User or through a connection to an Exchange access center outside the data center, third party access center, or third party vendor. The User may make such connection through a third party telecommunication provider, third party wireless network, the SFTI network, or a combination thereof. Users that opt to use Access or Connectivity would not receive access or connectivity that is not available to all Users, as all market participants that contract with the relevant market or content provider may receive access or connectivity. In this way, the proposed changes would

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<sup>26</sup> 15 U.S.C. 78f(b)(8).

enhance competition by helping Users tailor their Access and Connectivity to the needs of their business operations by allowing them to select the form and latency of access and connectivity that best suits their needs.

Similarly, the Exchange believes that providing VCCs between Users does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act because providing VCCs satisfies User demand for an alternative to cross connects.

The Exchange believes that revising the Fee Schedules to provide a more detailed description of the Access and Connectivity available to Users would make such descriptions more accessible and transparent, thereby providing market participants with clarity as to what Access and Connectivity is available to them and what the related costs are, thereby enhancing competition by ensuring that all Users have access to the same information regarding Access and Connectivity.

Finally, the Exchange operates in a highly competitive market in which exchanges offer co-location services as a means to facilitate the trading and other market activities of those market participants who believe that co-location enhances the efficiency of their operations. Accordingly, fees charged for co-location services are constrained by the active competition for the order flow of, and other business from, such market participants. If a particular exchange charges excessive fees for co-location services, affected market participants will opt to terminate their co-location arrangements with that exchange, and adopt a possible range of alternative strategies, including placing their servers in a physically proximate location outside the exchange's data center (which could be a competing exchange), or pursuing strategies less dependent upon the lower

exchange-to-participant latency associated with co-location. Accordingly, the exchange charging excessive fees would stand to lose not only co-location revenues but also the liquidity of the formerly co-located trading firms, which could have additional follow-on effects on the market share and revenue of the affected exchange. For the reasons described above, the Exchange believes that the proposed rule change reflects this competitive environment.

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

No written comments were solicited or received with respect to the proposed rule change.

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

Within 45 days of the date of publication of this notice in the Federal Register or up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the self-regulatory organization consents, the Commission will:

- (A) by order approve or disapprove the proposed rule change, or
- (B) institute proceedings to determine whether the proposed rule change should be 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:rule-comments@sec.gov). Please include File Number SR-NYSEARCA-2016-89 on the subject line.

Paper comments:

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

All submissions should refer to File Number SR-NYSEARCA-2016-89. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-NYSEARCA-2016-89 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>27</sup>

Robert W. Errett  
Deputy Secretary

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<sup>27</sup> 17 CFR 200.30-3(a)(12).

Additions underscored

Deletions [bracketed]

### NYSE Arca Options Fees and Charges

Effective Date: [November 3]●, 2016

\* \* \* \* \*

### NYSE Arca OPTIONS: FLOOR and EQUIPMENT and CO-LOCATION FEES

\* \* \* \* \*

### CO-LOCATION FEES

\* \* \* \* \*

| Type of Service | Description | Amount of Charge |
|-----------------|-------------|------------------|
|-----------------|-------------|------------------|

\* \* \* \* \*

|  |                              |   |
|--|------------------------------|---|
| Wireless Connection for Third Party Data         | Port for wireless connection | \$3,000 monthly charge per port, excluding first port |
|  | <u>1Mb</u>                   | <u>\$200 monthly charge</u>                           |
|  | <u>3Mb</u>                   | <u>\$400 monthly charge</u>                           |
| <u>Virtual Control Circuit between two Users</u> | <u>5Mb</u>                   | <u>\$500 monthly charge</u>                           |
|  | <u>10Mb</u>                  | <u>\$800 monthly charge</u>                           |
|  | <u>25Mb</u>                  | <u>\$1,200 monthly charge</u>                         |
|  | <u>50Mb</u>                  | <u>\$1,800 monthly charge</u>                         |
|  | <u>100Mb</u>                 | <u>\$2,500 monthly charge</u>                         |

\* \* \* \* \*

\*\*\* [No change]

### **Co-Location: Connectivity to Third Party Exchange Systems, Market Data Products, and DTCC**

#### Connectivity to Premium NYSE Data Products

Pricing for Premium NYSE Data Products is for connectivity only. Connectivity to Premium NYSE Data Products is subject to any technical provisioning

requirements and authorization from the provider of the data feed. Market data fees for the Premium NYSE Data Products are charged by the provider of the data feed. The Exchange is not the exclusive method to connect to Premium NYSE Data Products.

The Premium NYSE Data Products are as follows:

| <b><u>Premium NYSE Data Product</u></b> | <b><u>Feed</u></b>                | <b><u>Monthly Recurring Connectivity Fee per Feed</u></b> |
|---|-----------------------------------|---|
| <u>NYSE Arca Integrated Feed</u>        | <u>Feed A, IP network only</u>    | <u>\$1,500</u>  |
|   | <u>Feed B, IP network only</u>    | <u>\$1,500</u>  |
|   | <u>Resilient, IP network only</u> | <u>\$3,000</u>  |
|   | <u>Resilient, LCN only</u>        | <u>\$1,500</u>  |
| <u>NYSE Best Quote and Trades (BQT)</u> | <u>Feed A, IP network only</u>    | <u>\$500</u>  |
|   | <u>Feed B, IP network only</u>    | <u>\$500</u>  |
|   | <u>Resilient, IP network only</u> | <u>\$1,000</u>  |
|   | <u>Resilient, LCN only</u>        | <u>\$500</u>  |
| <u>NYSE Integrated Feed</u>             | <u>Feed A, IP network only</u>    | <u>\$1,500</u>  |
|   | <u>Feed B, IP network only</u>    | <u>\$1,500</u>  |
|   | <u>Resilient, IP network only</u> | <u>\$3,000</u>  |
|   | <u>Resilient, LCN only</u>        | <u>\$1,500</u>  |
| <u>NYSE MKT Integrated Feed</u>         | <u>Feed A, IP network only</u>    | <u>\$300</u>  |
|   | <u>Feed B, IP network only</u>    | <u>\$300</u>  |
|   | <u>Resilient, IP network only</u> | <u>\$600</u>  |
|   | <u>Resilient, LCN only</u>        | <u>\$300</u>  |

Connectivity to Third Party Systems

Pricing for access to the execution systems of third party markets and other service providers (Third Party Systems) is for connectivity only. Connectivity to Third Party Systems is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Systems is over the IP network. Any applicable fees are charged independently by the relevant third party content service provider. The Exchange is not the exclusive method to connect to Third Party Systems.

| <b><u>Bandwidth of connection to Third Party System</u></b> | <b><u>Monthly recurring fee per connection to Third Party System</u></b> |
|---|--|
| <u>1Mb</u>  | <u>\$200</u>   |
| <u>3Mb</u>  | <u>\$400</u>   |
| <u>5Mb</u>  | <u>\$500</u>   |
| <u>10Mb</u>   | <u>\$800</u>   |

|               |                |
|---------------|----------------|
| <u>25Mb</u>   | <u>\$1,200</u> |
| <u>50Mb</u>   | <u>\$1,800</u> |
| <u>100Mb</u>  | <u>\$2,500</u> |
| <u>200 Mb</u> | <u>\$3,000</u> |
| <u>1 Gb</u>   | <u>\$3,500</u> |

|  |
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| <b><u>Third Party Systems</u></b>              |
| <u>Americas Trading Group (ATG)</u>            |
| <u>BATS</u>                                    |
| <u>Boston Options Exchange (BOX)</u>           |
| <u>Chicago Board Options Exchange (CBOE)</u>   |
| <u>Credit Suisse</u>                           |
| <u>International Securities Exchange (ISE)</u> |
| <u>Nasdaq</u>                                  |
| <u>National Stock Exchange</u>                 |
| <u>NYFIX Marketplace</u>                       |

Connectivity to Third Party Data Feeds

Pricing for data feeds from third party markets and other content service providers (Third Party Data Feeds) is for connectivity only. Connectivity to Third Party Data Feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Data Feeds is over the IP network, with the exception that Users can connect to Global OTC and NYSE Global Index over the IP network or LCN. Market data fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to Third Party Data Feeds.

Third Party Data Feed providers may charge redistribution fees. When the Exchange receives a redistribution fee, it passes through the charge to the User, without change to the fee. The fee is labeled as a pass-through of a redistribution fee on the User's invoice. The Exchange does not charge third party markets or content providers for connectivity to their own feeds.

| <u>Third Party Data Feed</u>                                   | <u>Monthly Recurring Connectivity Fee per Third Party Data Feed</u> |
|--|---|
| <u>Bats BZX Exchange (BZX) and Bats BYX Exchange (BYX)</u>     | <u>\$2,000</u>  |
| <u>Bats EDGX Exchange (EDGX) and Bats EDGA Exchange (EDGA)</u> | <u>\$2,000</u>  |
| <u>Boston Options Exchange (BOX)</u>                           | <u>\$1,000</u>  |
| <u>Chicago Board Options Exchange (CBOE)</u>                   | <u>\$2,000</u>  |
| <u>Chicago Stock Exchange (CHX)</u>                            | <u>\$400</u>  |
| <u>Euronext</u>  | <u>\$600</u>  |

| <u>Third Party Data Feed</u>                           | <u>Monthly Recurring Connectivity Fee per Third Party Data Feed</u> |
|--|---|
| <u>Financial Industry Regulatory Authority (FINRA)</u> | <u>\$500</u>  |
| <u>Global OTC</u>                                      | <u>\$100</u>  |
| <u>Intercontinental Exchange (ICE)</u>                 | <u>\$1,500</u>  |
| <u>Montréal Exchange (MX)</u>                          | <u>\$1,000</u>  |
| <u>MSCI 5 Mb</u>                                       | <u>\$500</u>  |
| <u>MSCI 25 Mb</u>                                      | <u>\$1,200</u>  |
| <u>NASDAQ Stock Market</u>                             | <u>\$2,000</u>  |
| <u>NASDAQ OMX Global Index Data Service</u>            | <u>\$100</u>  |
| <u>NASDAQ OMDF</u>                                     | <u>\$100</u>  |
| <u>NASDAQ UQDF &amp; UTDF</u>                          | <u>\$500</u>  |
| <u>NYSE Global Index</u>                               | <u>\$100</u>  |
| <u>OTC Markets Group</u>                               | <u>\$1,000</u>  |
| <u>SR Labs - SuperFeed &lt;500 Mb</u>                  | <u>\$250</u>  |
| <u>SR Labs – SuperFeed &gt;500 Mb to &lt;1.25 Gb</u>   | <u>\$800</u>  |
| <u>SR Labs – SuperFeed &gt;1.25 Gb</u>                 | <u>\$1,000</u>  |
| <u>TMX Group</u>                                       | <u>\$2,500</u>  |

*Connectivity to Third Party Testing and Certification Feeds*

The Exchange provides connectivity to third party testing and certification feeds provided by third party markets and other content service providers. Pricing for third party testing and certification feeds is for connectivity only. Connectivity to third party testing and certification feeds is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to third party testing and certification feeds is over the IP network. Any applicable fees are charged independently by the relevant third party market or content service provider. The Exchange is not the exclusive method to connect to third party testing and certification feeds.

|  |   |
|--|---|
| <u>Connectivity to third party certification and testing feeds</u> | <u>\$100 monthly recurring fee per feed</u> |
|--|---|

*Connectivity to DTCC*

Pricing for connectivity to DTCC feeds is for connectivity only. Connectivity to DTCC feeds is subject to any technical provisioning requirements and authorization from DTCC. Connectivity to DTCC feeds is over the IP network. Any applicable fees are charged independently by DTCC. The Exchange is not the exclusive method to connect to DTCC feeds.

|                                |                                    |
|--------------------------------|------------------------------------|
| <u>5 Mb connection to DTCC</u> | <u>\$500 monthly recurring fee</u> |
|--------------------------------|------------------------------------|

|                                 |  |
|---------------------------------|--|
| <u>50 Mb connection to DTCC</u> | <u>\$2,500 monthly<br/>recurring fee</u> |
|---------------------------------|--|

\* \* \* \* \*

**NYSE Arca Equities, Inc.**

**SCHEDULE OF FEES AND CHARGES  
FOR EXCHANGE SERVICES**

[December 2]●, 2016

\* \* \* \* \*

**NYSE ARCA MARKETPLACE: OTHER FEES AND CHARGES**

\* \* \* \* \*

**CO-LOCATION FEES**

\* \* \* \* \*

| Type of Service | Description | Amount of Charge |
|-----------------|-------------|------------------|
|-----------------|-------------|------------------|

\* \* \* \* \*

|  |                              |   |
|--|------------------------------|---|
| Wireless Connection for Third Party Data         | Port for wireless connection | \$3,000 monthly charge per port, excluding first port |
| <u>Virtual Control Circuit between two Users</u> | <u>1Mb</u>                   | <u>\$200 monthly charge</u>                           |
|  | <u>3Mb</u>                   | <u>\$400 monthly charge</u>                           |
|  | <u>5Mb</u>                   | <u>\$500 monthly charge</u>                           |
|  | <u>10Mb</u>                  | <u>\$800 monthly charge</u>                           |
|  | <u>25Mb</u>                  | <u>\$1,200 monthly charge</u>                         |
|  | <u>50Mb</u>                  | <u>\$1,800 monthly charge</u>                         |
|  | <u>100Mb</u>                 | <u>\$2,500 monthly charge</u>                         |

\* \* \* \* \*

\*\*\* [No change]

**Co-Location: Connectivity to Third Party Exchange Systems, Market Data Products, and DTCC**

Connectivity to Premium NYSE Data Products

Pricing for Premium NYSE Data Products is for connectivity only. Connectivity to Premium NYSE Data Products is subject to any technical provisioning requirements and authorization from the provider of the data feed. Market data fees for the Premium NYSE Data Products are charged by the provider of the data feed. The Exchange is not the exclusive method to connect to Premium NYSE Data Products.



The Premium NYSE Data Products are as follows:

| <b><u>Premium NYSE Data Product</u></b>        | <b><u>Feed</u></b>                       | <b><u>Monthly Recurring Connectivity Fee per Feed</u></b> |
|--|--|---|
| <b><u>NYSE Arca Integrated Feed</u></b>        | <b><u>Feed A, IP network only</u></b>    | <b><u>\$1,500</u></b>                                     |
|  | <b><u>Feed B, IP network only</u></b>    | <b><u>\$1,500</u></b>                                     |
|  | <b><u>Resilient, IP network only</u></b> | <b><u>\$3,000</u></b>                                     |
|  | <b><u>Resilient, LCN only</u></b>        | <b><u>\$1,500</u></b>                                     |
| <b><u>NYSE Best Quote and Trades (BQT)</u></b> | <b><u>Feed A, IP network only</u></b>    | <b><u>\$500</u></b>                                       |
|  | <b><u>Feed B, IP network only</u></b>    | <b><u>\$500</u></b>                                       |
|  | <b><u>Resilient, IP network only</u></b> | <b><u>\$1,000</u></b>                                     |
|  | <b><u>Resilient, LCN only</u></b>        | <b><u>\$500</u></b>                                       |
| <b><u>NYSE Integrated Feed</u></b>             | <b><u>Feed A, IP network only</u></b>    | <b><u>\$1,500</u></b>                                     |
|  | <b><u>Feed B, IP network only</u></b>    | <b><u>\$1,500</u></b>                                     |
|  | <b><u>Resilient, IP network only</u></b> | <b><u>\$3,000</u></b>                                     |
|  | <b><u>Resilient, LCN only</u></b>        | <b><u>\$1,500</u></b>                                     |
| <b><u>NYSE MKT Integrated Feed</u></b>         | <b><u>Feed A, IP network only</u></b>    | <b><u>\$300</u></b>                                       |
|  | <b><u>Feed B, IP network only</u></b>    | <b><u>\$300</u></b>                                       |
|  | <b><u>Resilient, IP network only</u></b> | <b><u>\$600</u></b>                                       |
|  | <b><u>Resilient, LCN only</u></b>        | <b><u>\$300</u></b>                                       |

**Connectivity to Third Party Systems**

**Pricing for access to the execution systems of third party markets and other service providers (Third Party Systems) is for connectivity only. Connectivity to Third Party Systems is subject to any technical provisioning requirements and authorization from the provider of the data feed. Connectivity to Third Party Systems is over the IP network. Any applicable fees are charged independently by the relevant third party content service provider. The Exchange is not the exclusive method to connect to Third Party Systems.**

| <b><u>Bandwidth of connection to Third Party System</u></b> | <b><u>Monthly recurring fee per connection to Third Party System</u></b> |
|---|--|
| <b><u>1Mb</u></b>   | <b><u>\$200</u></b>  |
| <b><u>3Mb</u></b>   | <b><u>\$400</u></b>  |
| <b><u>5Mb</u></b>   | <b><u>\$500</u></b>  |
| <b><u>10Mb</u></b>  | <b><u>\$800</u></b>  |
| <b><u>25Mb</u></b>  | <b><u>\$1,200</u></b>  |

|               |                |
|---------------|----------------|
| <u>50Mb</u>   | <u>\$1,800</u> |
| <u>100Mb</u>  | <u>\$2,500</u> |
| <u>200 Mb</u> | <u>\$3,000</u> |
| <u>1 Gb</u>   | <u>\$3,500</u> |

|  |
|--|
| <b><u>Third Party Systems</u></b>              |
| <u>Americas Trading Group (ATG)</u>            |
| <u>BATS</u>                                    |
| <u>Boston Options Exchange (BOX)</u>           |
| <u>Chicago Board Options Exchange (CBOE)</u>   |
| <u>Credit Suisse</u>                           |
| <u>International Securities Exchange (ISE)</u> |
| <u>Nasdaq</u>                                  |
| <u>National Stock Exchange</u>                 |
| <u>NYFIX Marketplace</u>                       |

Connectivity to Third Party Data Feeds

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| <b><u>Third Party Data Feed</u></b>                            | <b><u>Monthly Recurring Connectivity Fee per Third Party Data Feed</u></b> |
|--|--|
| <u>Bats BZX Exchange (BZX) and Bats BYX Exchange (BYX)</u>     | <u>\$2,000</u>   |
| <u>Bats EDGX Exchange (EDGX) and Bats EDGA Exchange (EDGA)</u> | <u>\$2,000</u>   |
| <u>Boston Options Exchange (BOX)</u>                           | <u>\$1,000</u>   |
| <u>Chicago Board Options Exchange (CBOE)</u>                   | <u>\$2,000</u>   |
| <u>Chicago Stock Exchange (CHX)</u>                            | <u>\$400</u>   |
| <u>Euronext</u>  | <u>\$600</u>   |

| <b><u>Third Party Data Feed</u></b>                    | <b><u>Monthly Recurring Connectivity Fee per Third Party Data Feed</u></b> |
|--|--|
| <u>Financial Industry Regulatory Authority (FINRA)</u> | <u>\$500</u>   |
| <u>Global OTC</u>                                      | <u>\$100</u>   |
| <u>Intercontinental Exchange (ICE)</u>                 | <u>\$1,500</u>   |
| <u>Montréal Exchange (MX)</u>                          | <u>\$1,000</u>   |
| <u>MSCI 5 Mb</u>                                       | <u>\$500</u>   |
| <u>MSCI 25 Mb</u>                                      | <u>\$1,200</u>   |
| <u>NASDAQ Stock Market</u>                             | <u>\$2,000</u>   |
| <u>NASDAQ OMX Global Index Data Service</u>            | <u>\$100</u>   |
| <u>NASDAQ OMDF</u>                                     | <u>\$100</u>   |
| <u>NASDAQ UQDF &amp; UTDF</u>                          | <u>\$500</u>   |
| <u>NYSE Global Index</u>                               | <u>\$100</u>   |
| <u>OTC Markets Group</u>                               | <u>\$1,000</u>   |
| <u>SR Labs - SuperFeed &lt;500 Mb</u>                  | <u>\$250</u>   |
| <u>SR Labs – SuperFeed &gt;500 Mb to &lt;1.25 Gb</u>   | <u>\$800</u>   |
| <u>SR Labs – SuperFeed &gt;1.25 Gb</u>                 | <u>\$1,000</u>   |
| <u>TMX Group</u>                                       | <u>\$2,500</u>   |

*Connectivity to Third Party Testing and Certification Feeds*

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|  |   |
|--|---|
| <u>Connectivity to third party certification and testing feeds</u> | <u>\$100 monthly recurring fee per feed</u> |
|--|---|

*Connectivity to DTCC*

Pricing for connectivity to DTCC feeds is for connectivity only. Connectivity to DTCC feeds is subject to any technical provisioning requirements and authorization from DTCC. Connectivity to DTCC feeds is over the IP network. Any applicable fees are charged independently by DTCC. The Exchange is not the exclusive method to connect to DTCC feeds.

|                                |                                    |
|--------------------------------|------------------------------------|
| <u>5 Mb connection to DTCC</u> | <u>\$500 monthly recurring fee</u> |
|--------------------------------|------------------------------------|

|                                 |  |
|---------------------------------|--|
| <u>50 Mb connection to DTCC</u> | <u>\$2,500 monthly<br/>recurring fee</u> |
|---------------------------------|--|

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