



July 6, 2023

Jeannette Jackson
Division of Trading and Markets
Office of Market Supervision
Securities and Exchange Commission
100 F. Street, N.E.
Washington, D.C. 20549

**RE: MIAX PEARL, LLC (“Pearl”)
Amendment 2023-11 to Form 1 Application**

Dear Ms. Jackson:

Enclosed for official filing pursuant to Rule 6a-2(a) is Amendment 2023-11 to the Form 1 Application of Pearl, which includes the following changes:

- Exhibit C – Updated officers of Miami International Holdings, Inc., Miami International Securities Exchange, LLC, and MIAX Emerald, LLC; updated committee members of The Bermuda Stock Exchange
- Exhibit F – Updated membership forms
- Exhibit J – Updated officers
- Exhibit M – Updated member list for MIAX Pearl Equities

Please do not hesitate to contact me if you have any questions in connection with this matter.

Sincerely,

Barbara J. Comly

Barbara J. Comly
EVP, General Counsel & Corporate Secretary

Enclosure
cc: Marlene Olsen

7 Roszel Road, Suite 1A
Princeton, New Jersey 08540

miaxglobal.com

Form 1 Page 1 Execution Page	UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549 APPLICATION FOR, AND AMENDMENTS TO APPLICATION FOR, REGISTRATION AS A NATIONAL SECURITIES EXCHANGE OR EXEMPTION FROM REGISTRATION PURSUANT TO SECTION 5 OF THE EXCHANGE ACT	Date filed (MM/DD/YY): 07/06/23	OFFICIAL USE ONLY
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Warning: Failure to keep this form current and to file accurate supplementary information on a timely basis, or the failure to keep accurate books and records or otherwise comply with the provisions of law applying to the conduct of the applicant would violate the federal securities laws and may result in disciplinary, administrative or criminal action

INTENTIONAL MISSTATEMENTS OR OMISSIONS OF FACTS MAY CONSTITUTE CRIMINAL VIOLATIONS

APPLICATION AMENDMENT

1. State the name of the applicant: MIAX PEARL, LLC
2. Provide the applicant's primary street address (Do not use a P.O. Box): 7 Roszel Road, Suite 1A, Princeton, NJ 08540
3. Provide the applicant's mailing address (if different):
4. Provide the applicant's business telephone and facsimile number:
Telephone: 609-897-7300; Facsimile: 609-987-2210
5. Provide the name, title and telephone number of a contact employee:
Barbara J. Comly, EVP, General Counsel & Corporate Secretary
609-897-7315
6. Provide the name and address of counsel for the applicant:
Barbara J. Comly, EVP, General Counsel & Corporate Secretary
MIAX PEARL, LLC
7 Roszel Road, Suite 1A
Princeton, NJ 08540
7. Provide the date applicant's fiscal year ends: December 31
8. Indicate legal status of applicant: Corporation Sole Proprietorship Partnership
 Limited Liability Company Other (specify):



23007788

If other than a sole proprietor, indicate the date and place where applicant obtained its legal status (e.g. state where incorporated, place where partnership agreement was filed or where applicant entity was formed):

- (a) Date (MM/DD/YY): 02/11/16 (b) State/Country of formation: Delaware
- (c) Statute under which applicant was organized: Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.)

EXECUTION: The applicant consents that service of any civil action brought by, or notice of any proceeding before, the Securities and Exchange Commission in connection with the applicant's activities may be given by registered or certified mail or confirmed telegram to the applicant's contact employee at the main address, or mailing address if different, given in Items 2 and 3. The undersigned, being first duly sworn, deposes and says that he/she has executed this form on behalf of, and with the authority of, said applicant. The undersigned and applicant represent that the information and statements contained herein, including exhibits, schedules, or other documents attached hereto, and other information filed herewith, all of which are made a part hereof, are current, true, and complete.

MIAX PEARL, LLC

Date: July 6, 2023

By: Barbara J. Comly
Barbara J. Comly
EVP, General Counsel & Corporate Secretary

Subscribed and sworn before me this ____ day of _____, 2023.

Based upon relief from Commission Staff and difficulties arising from COVID-19, MIAX PEARL, LLC is making this filing without a notarization.

Notary Public of the State of New Jersey

This page must always be completed in full with original, manual signature and notarization.
Affix notary stamp or seal where applicable.

EXHIBIT C

Exhibit Request:

For each subsidiary or affiliate of the applicant, and for any entity with whom the applicant has a contractual or other agreement relating to the operation of an electronic trading system to be used to effect transactions on the exchange (“System”), provide the following information:

1. Name and address of organization.
2. Form of organization (e.g., association, corporation, partnership, etc.).
3. Name of state and statute citation under which organized. Date of incorporation in present form.
4. Brief description of nature and extent of affiliation.
5. Brief description of business or functions. Description should include responsibilities with respect to operation of the System and/or execution, reporting, clearance, or settlement of transactions in connection with operation of the System.
6. A copy of the constitution.
7. A copy of the articles of incorporation or association including all amendments.
8. A copy of existing by-laws or corresponding rules or instruments.
9. The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions.
10. An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association.

Response:

A. MIAMI INTERNATIONAL HOLDINGS, INC.

1. *Name:* Miami International Holdings, Inc.
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Corporation.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware General Corporation Law (8 Del. C. § 1-101, et seq.), on November 14, 2007.
4. *Brief description of nature and extent of affiliation:* MIAX PEARL, LLC is a wholly-owned subsidiary of Miami International Holdings, Inc. (“MIH”).

5. *Brief description of business or functions:* Miami International Holdings, Inc. is a holding company which holds 100% of the equity of Miami International Securities Exchange, LLC, MIAX PEARL, LLC, MIAX Emerald, LLC, MIAX Sapphire, LLC, Miami International Technologies, LLC, MIAX Global, LLC, MIAX Futures, LLC, MIAX Products, LLC, The Bermuda Stock Exchange, Dorman Trading, LLC, M 7 Holdings, LLC, the sole member and owner of 100% of the equity and voting securities of LedgerX LLC, MIH East Holdings, Limited, and M 402 Holdings, LLC, the sole member and owner of 100% of the equity and voting securities of Minneapolis Grain Exchange, LLC. MIAX Futures, LLC is the owner of 51% of the outstanding membership interests in ConvexityShares, LLC. Miami International Holdings, Inc. is the entity through which the ultimate owners of the applicant indirectly hold their ownership interest in the applicant and its affiliates.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Amended and Restated Certificate of Incorporation dated October 16, 2015 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Amended and Restated By-Laws dated June 27, 2015 are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of Miami International Holdings, Inc.

The following persons are the officers of Miami International Holdings, Inc.:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Edward Deitzel	Executive Vice President and Chief Regulatory Officer
Shelly Brown	Executive Vice President – Strategic Planning and Business Development
Mark G. Bagan	Executive Vice President – US Futures Strategy
Harish Jayabalan	Executive Vice President – Chief Risk Officer and Chief Information Security Officer
John Smollen	Executive Vice President – Head of Exchange Traded Products and Strategic Relations
Randy Foster	Senior Vice President – Business Systems Development
Matthew Rotella	Senior Vice President – Chief Technology Officer
Joseph W. Ferraro III	Senior Vice President – Deputy General Counsel
Deborah Carroll	Senior Vice President – Associate General Counsel and Assistant Corporate Secretary

Name	Title
Joseph Bracco	Senior Vice President – Head of Sales
Rodney Hester	Senior Vice President – Systems Infrastructure
Steven F. Ivey	Senior Vice President – Futures Risk Management
Amy Neiley-Avayou	Senior Vice President – Trading Operations and Listings
Paul Anders (Andy) Nybo	Senior Vice President – Chief Communications Officer
Charles Blades	Vice President – Controller
Kateryna Brezitska	Vice President – Equities Planning and Development
Daniel J. Brill	Vice President – Options Strategic Planning & Business Development
Jonathan Dowd	Vice President – Business Strategy
Mitchell Garfinkel	Vice President – Finance
Lindsay R. Hopkins	Vice President – Senior Counsel
Daniel Hsu	Vice President – Exchange Pricing & Business Analysis
Thomas Jarck	Vice President – Proprietary Product Development
Joseph P. Kamnik	Vice President – Senior Counsel
Gamini Karunaratne	Vice President – Network Engineering & Data Center Operations
Kaitlin Meyer	Vice President – Marketing and Sales
James O’Neil	Vice President and Director of Physical Security and Safety
Gerard (Chaz) Palmeri	Vice President – Systems Operations
Vinay Rao	Vice President – Trading Systems Development
Siddharth Sahoo	Vice President – Trading Systems Development
Christopher Solgan	Vice President – Senior Counsel
Peter D. Sparby	Vice President – Counsel
Tia Toms	Vice President – Administration
Gregory Ziegler	Vice President – Senior Counsel
Katherine Comly	Assistant Vice President, Associate Counsel and Director of ESG
Tatiana Kitaigorovski	Assistant Vice President – Associate Counsel
Matt Leisen	Assistant Vice President – Counsel
Michael Slade	Assistant Vice President – Associate Counsel

The officers of Miami International Holdings, Inc. serve until their successors are appointed in accordance with the By-Laws of Miami International Holdings, Inc. Officers of Miami International Holdings, Inc. serve at the direction of the Board of Directors.

Directors of Miami International Holdings, Inc.

The following persons are the directors of Miami International Holdings, Inc.:

Name
Thomas P. Gallagher (Chairman)
Talal Jassim Al-Bahar
Abdulwahab Ahmad Al-Nakib
Michael P. Ameen
Albert M. Barro, Jr.
John Beckelman
Barry J. Belmont
Ricardo Blach
Christopher Brady
Khaled Magdy El-Marsafy
William W. Hopkins
Thomas J. Kelly, Jr.
Paul Kotos
Mark I. Massad
Jack G. Mondel
William J. O'Brien III
Robert D. Prunetti
Mark F. Raymond
Douglas M. Schafer Jr.
Paul V. Stahlin
J. Gray Teekell
Jassem Hassan Zainal

Directors of Miami International Holdings, Inc. serve one year terms.

Audit Committee of Miami International Holdings, Inc.

The following persons are members of the Audit Committee of Miami International Holdings, Inc.:

Name
Paul V. Stahlin (Chairman)
Michael P. Ameen
Khaled Magdy El-Marsafy
Robert D. Prunetti

Compensation Committee of Miami International Holdings, Inc.

The following persons are members of the Compensation Committee of Miami International Holdings, Inc.:

Name
Talal Jassim Al-Bahar (Chairman)
Christopher D. Brady
Thomas J. Kelly
Mark F. Raymond
J. Gray Teekell

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

B. MIAMI INTERNATIONAL SECURITIES EXCHANGE, LLC

1. *Name:* Miami International Securities Exchange, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on September 10, 2007.
4. *Brief description of nature and extent of affiliation:* Miami International Securities Exchange, LLC is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* Miami International Securities Exchange, LLC ("MIAX") is registered as a National Securities Exchange under Section 6 of the Securities Exchange Act of 1934, as amended. MIAX operates a fully electronic options trading platform.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Amended and Restated Certificate of Formation dated November 12, 2020 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Third Amended and Restated Limited Liability Company Agreement dated November 12, 2020, and Amended and Restated By-Laws dated November 12, 2020 are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of Miami International Securities Exchange, LLC

The following persons are the officers of Miami International Securities Exchange, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Edward Deitzel	Executive Vice President, Chief Regulatory Officer and Chief Compliance Officer
Shelly Brown	Executive Vice President – Strategic Planning and Business Development
Harish Jayabalan	Executive Vice President – Chief Risk Officer and Chief Information Security Officer
John Smollen	Executive Vice President – Head of Exchange Traded Products and Strategic Relations
Randy Foster	Senior Vice President – Business Systems Development
Matthew Rotella	Senior Vice President – Chief Technology Officer
Joseph W. Ferraro III	Senior Vice President – Deputy General Counsel
Deborah Carroll	Senior Vice President – Associate General Counsel and Assistant Corporate Secretary
Joseph S. Bracco	Senior Vice President – Head of Sales
Rodney Hester	Senior Vice President – Systems Infrastructure
Amy Neiley-Avayou	Senior Vice President – Trading Operations and Listings
Paul Anders (Andy) Nybo	Senior Vice President – Chief Communications Officer
Charles Blades	Vice President – Controller
Kateryna Brezitska	Vice President – Equities Planning and Development
Daniel J. Brill	Vice President – Options Strategic Planning & Business Development
Jonathan S. Dowd	Vice President – Business Strategy
Laurence Gardner	Vice President – Regulatory Operations
Mitchell Garfinkel	Vice President – Finance
Daniel Hsu	Vice President – Exchange Pricing & Business Analysis
Thomas Jarck	Vice President – Proprietary Product Development
Joseph P. Kamnik	Vice President – Senior Counsel
Gamini Karunaratne	Vice President – Network Engineering & Data Center Operations

Name	Title
Kaitlin Meyer	Vice President – Marketing and Sales
Ronald Miller	Vice President – Compliance
Lawrence O’Leary	Vice President – Regulatory Oversight
James O’Neil	Vice President and Director of Physical Security and Safety
Gerard (Chaz) Palmeri	Vice President – Systems Operations
Vinay Rao	Vice President – Trading Systems Development
Siddharth Sahoo	Vice President – Trading Systems Development
Christopher Solgan	Vice President – Senior Counsel
Christopher Swisher	Vice President – Market Surveillance
Tia Toms	Vice President – Administration
Gregory Ziegler	Vice President – Senior Counsel
Katherine Comly	Assistant Vice President, Associate Counsel and Director of ESG
Tatiana Kitaigorovski	Assistant Vice President – Associate Counsel
Michael Slade	Assistant Vice President – Associate Counsel

The officers of Miami International Securities Exchange, LLC serve until their successors are appointed in accordance with the By-Laws of Miami International Securities Exchange, LLC. Officers of Miami International Securities Exchange, LLC will serve at the direction of the Board of Directors.

Directors of Miami International Securities Exchange, LLC

The following persons are the directors and Board observers of Miami International Securities Exchange, LLC:

Directors
Thomas P. Gallagher
Michael P. Ameen
Lindsay L. Burbage
Robert Castrignano
Marianne Deane
John DiBacco, Jr.
David Dooman
Kurt M. Eckert
Leslie Florio
Lawrence E. Jaffe
Paul Jiganti
John A. Kinahan
William V. Looney, Jr.

John E. McCormac
Robert D. Prunetti
Joseph Sellitto
Cynthia Schwarzkopf
J. Gray Teekell
Observers
Lawrence Tanzman

Committees of Miami International Securities Exchange, LLC

The standing committees of the Board and the persons appointed to sit on the standing committees are as follows:

Audit Committee
Robert D. Prunetti (Chair)
Michael P. Ameen
John E. McCormac

Compensation Committee
J. Gray Teekell (Chair)
Robert D. Prunetti
Cynthia Schwarzkopf

Regulatory Oversight Committee
Lindsay L. Burbage (Chair)
Leslie Florio
Lawrence E. Jaffe

Appeals Committee
Lawrence Jaffe (Chair)
Robert Castrignano
Kurt M. Eckert

Technology Committee
Leslie Florio (Chair)
Robert Castrignano
Marianne Deane
David Dooman
Kurt M. Eckert
John A. Kinahan
John E. McCormac
Cynthia Schwarzkopf
J. Gray Teekell

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

C. MIAX EMERALD, LLC

1. *Name:* MIAX Emerald, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on January 30, 2018.
4. *Brief description of nature and extent of affiliation:* MIAX Emerald, LLC ("MIAX Emerald") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* MIAX Emerald is registered as a National Securities Exchange under Section 6 of the Securities Exchange Act of 1934, as amended. MIAX Emerald operates a fully electronic options trading platform.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Amended and Restated Certificate of Formation dated November 12, 2020 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Second Amended and Restated Limited Liability Company Agreement dated November 12, 2020 and Amended and Restated By-Laws dated November 12, 2020 are attached.

9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of MIAX Emerald, LLC

The following persons are the officers of MIAX Emerald, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Edward Deitzel	Executive Vice President, Chief Regulatory Officer and Chief Compliance Officer
Shelly Brown	Executive Vice President – Strategic Planning and Business Development
Harish Jayabalan	Executive Vice President – Chief Risk Officer and Chief Information Security Officer
John Smollen	Executive Vice President – Head of Exchange Traded Products and Strategic Relations
Randy Foster	Senior Vice President – Business Systems Development
Matthew Rotella	Senior Vice President – Chief Technology Officer
Joseph W. Ferraro III	Senior Vice President – Deputy General Counsel
Deborah Carroll	Senior Vice President – Associate General Counsel and Assistant Corporate Secretary
Joseph S. Bracco	Senior Vice President – Head of Sales
Rodney Hester	Senior Vice President – Systems Infrastructure
Amy Neiley-Avayou	Senior Vice President – Trading Operations and Listings
Paul Anders (Andy) Nybo	Senior Vice President – Chief Communications Officer
Charles Blades	Vice President – Controller
Kateryna Brezitska	Vice President – Equities Planning and Development
Daniel J. Brill	Vice President – Options Strategic Planning & Business Development
Jonathan S. Dowd	Vice President – Business Strategy
Laurence Gardner	Vice President – Regulatory Operations
Mitchell Garfinkel	Vice President – Finance
Daniel Hsu	Vice President – Exchange Pricing & Business Analysis
Thomas Jarck	Vice President – Proprietary Product Development
Joseph P. Kamnik	Vice President – Senior Counsel
Gamini Karunaratne	Vice President – Network Engineering & Data Center Operations

Name	Title
Kaitlin Meyer	Vice President – Marketing and Sales
Ronald Miller	Vice President – Compliance
Lawrence O’Leary	Vice President – Regulatory Oversight
James O’Neil	Vice President and Director of Physical Security and Safety
Gerard (Chaz) Palmeri	Vice President – Systems Operations
Vinay Rao	Vice President – Trading Systems Development
Siddharth Sahoo	Vice President – Trading Systems Development
Christopher Solgan	Vice President – Senior Counsel
Christopher Swisher	Vice President – Market Surveillance
Tia Toms	Vice President – Administration
Gregory Ziegler	Vice President – Senior Counsel
Katherine Comly	Assistant Vice President, Associate Counsel and Director of ESG
Tatiana Kitaigorovski	Assistant Vice President – Associate Counsel
Michael Slade	Assistant Vice President – Associate Counsel

The officers of MIAX Emerald, LLC serve until their successors are appointed in accordance with the By-Laws of MIAX Emerald, LLC. Officers of MIAX Emerald, LLC will serve at the direction of the Board of Directors.

Directors of MIAX Emerald, LLC

The following persons are the directors of MIAX Emerald, LLC:

Name
Thomas P. Gallagher
Lindsay L. Burbage
Marianne Deane
Kurt M. Eckert
David S. Fleming
Leslie Florio
Kimberly M. Guadagno
Richard Herr
Paul Jiganti
Michael Juneman
Joseph M. Kyrillos Jr.
John E. McCormac
Robert D. Prunetti
Liam Smith

Committees of MIAX Emerald, LLC

The standing committees of the Board and the persons appointed to sit on the standing committees are as follows:

Audit Committee
Robert D. Prunetti (Chair)
Joseph M. Kyrillos Jr.
John E. McCormac

Compensation Committee
Robert D. Prunetti (Chair)
Marianne Deane
Joseph M. Kyrillos Jr.

Regulatory Oversight Committee
Lindsay L. Burbage (Chair)
Leslie Florio
Kimberly M. Guadagno

Appeals Committee
Marianne Deane (Chair)
Kurt M. Eckert
Paul Jiganti

Technology Committee
Leslie Florio (Chair)
Marianne Deane
David S. Fleming
John E. McCormac

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

D. MIAX SAPPHIRE, LLC

1. *Name:* MIAX Sapphire, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on April 6, 2023.

4. *Brief description of nature and extent of affiliation:* MIAX Sapphire, LLC ("MIAX Sapphire") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* MIAX Sapphire is not yet active. MIAX Sapphire intends to register as a National Securities Exchange under Section 6 of the Securities Exchange Act of 1934, as amended. MIAX Sapphire intends to operate a fully electronic options trading platform as well as a trading floor in Miami, Florida.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Certificate of Formation dated April 6, 2023 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Limited Liability Company Agreement dated April 18, 2023 is attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of MIAX Sapphire, LLC

The following persons are the officers of MIAX Sapphire, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Edward Deitzel	Executive Vice President, Chief Regulatory Officer and Chief Compliance Officer
Shelly Brown	Executive Vice President – Strategic Planning and Business Development
Harish Jayabalan	Executive Vice President – Chief Risk Officer & Chief Information Security Officer
Randy Foster	Senior Vice President – Business Systems Development
Matthew Rotella	Senior Vice President – Chief Technology Officer

Directors of MIAX Sapphire, LLC

The following persons are the directors of MIAX Sapphire, LLC:

Name
Thomas P. Gallagher

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

E. MIAMI INTERNATIONAL TECHNOLOGIES, LLC

1. *Name:* Miami International Technologies, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on May 12, 2010.
4. *Brief description of nature and extent of affiliation:* Miami International Technologies, LLC ("MIAX Technologies") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* MIAX Technologies engages in the sale and licensing of trading and information technology to unrelated third parties.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Amended and Restated Certificate of Formation dated June 29, 2011 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Second Amended and Restated Limited Liability Company Agreement dated June 25, 2021 is attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of Miami International Technologies, LLC

The following persons are the officers of Miami International Technologies, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Douglas M. Schafer Jr.	President and Chief Information Officer
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Harish Jayabalan	Executive Vice President – Chief Information Security Officer
Matthew Rotella	Senior Vice President – Chief Technology Officer
Randy Foster	Senior Vice President – Business Systems Development

Name	Title
Deborah Carroll	Senior Vice President – Associate General Counsel and Assistant Corporate Secretary
Rodney Hester	Senior Vice President – Systems Infrastructure
Charles Blades	Vice President – Controller
Mitchell Garfinkel	Vice President – Finance
James O’Neil	Vice President and Director of Physical Security and Safety
Tia Toms	Vice President – Administration

Directors of Miami International Technologies, LLC

The following persons are the directors of Miami International Technologies, LLC:

Name
Thomas P. Gallagher

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

F. MIAX FUTURES, LLC

1. *Name:* MIAX Futures, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on November 30, 2007.
4. *Brief description of nature and extent of affiliation:* MIAX Futures, LLC ("MIAX Futures") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* MIAX Futures is the owner of 51% of the outstanding membership interests in ConvexityShares, LLC.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Restated Certificate of Formation dated March 10, 2021 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Second Amended and Restated Limited Liability Company Agreement dated March 10, 2021 is attached.

9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of MIAX Futures, LLC

The following persons are the officers of MIAX Futures, LLC:

Name	Title
Thomas P. Gallagher	Chairman
Joseph W. Ferraro III	President
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Deborah Carroll	Senior Vice President – Associate General Counsel and Assistant Corporate Secretary
Randy Foster	Senior Vice President – Business Systems Development
Matthew Rotella	Senior Vice President – Chief Technology Officer
Thomas Jarck	Vice President – Proprietary Product Development

Directors of MIAX Futures, LLC

The following persons are the directors of MIAX Futures, LLC:

Name
Thomas P. Gallagher (Chair)
Kurt M. Eckert

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

G. THE BERMUDA STOCK EXCHANGE

- Name:* The Bermuda Stock Exchange
Address: 110 Pitts Bay Road, 4th Floor, Pembroke, Bermuda HM 08
- Form of organization:* A body corporate incorporated pursuant to The Bermuda Stock Exchange Act 1992.
- Name of state, statute under which organized and date of incorporation:* Bermuda, The Bermuda Stock Exchange Company Act 1992, on March 10, 1993.

4. *Brief description of nature and extent of affiliation:* Miami International Holdings, Inc., which is the applicant's 100% owner, is the owner of 100% of the outstanding shares of The Bermuda Stock Exchange ("BSX").
5. *Brief description of business or functions:* Stock Exchange located in Pembroke, Bermuda.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Memorandum of Association dated March 10, 1993, is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Amended and Restated Bye-Laws dated July 21, 2003, are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of The Bermuda Stock Exchange

The following persons are the officers of The Bermuda Stock Exchange:

Name	Title
Gregory A. Wojciechowski	President & Chief Executive Officer
Gregory A. Wojciechowski	Secretary
Ailish Bryne	Chief Compliance Officer
Jacintha Pogson-Hughes	Chief Administration Officer

Council (Directors) of The Bermuda Stock Exchange

The following persons are the council of The Bermuda Stock Exchange:

Council
Thomas P. Gallagher (Chairman)
David Brown (Deputy Chairman)
Jeff Conyers
Kurt M. Eckert
Caroline Kennedy
Mark Massad
Michael Neff
Eric Sites
Murray Stahl
Gregory A. Wojciechowski

Committees of The Bermuda Stock Exchange

Business Development Committee
Eric Sites
Jeff Conyers
Michael Neff
Gregory A. Wojciechowski

Compensation Committee
Thomas P. Gallagher
David Brown
Jeff Conyers
Michael Neff

Executive Management Committee
Thomas P. Gallagher
David Brown
Jeff Conyers
Michael Neff

Listing Committee
Dudley Cottingham
Sharon Beesley
Miguel DaPonte
Marco Montarsolo
Gregory A. Wojciechowski

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

H. BSD NOMINEE LIMITED

1. *Name:* BSD Nominee Limited
Address: 110 Pitts Bay Road, 4th Floor, Pembroke, Bermuda HM 08
2. *Form of organization:* A body corporate incorporated pursuant to Bermuda, The Companies Act 1981.
3. *Name of state, statute under which organized and date of incorporation:* Organized in Bermuda under The Companies Act 1981 on October 24, 2001. Registered in Bermuda under Section 14 of The Companies Act 1981 on November 1, 2001.

4. *Brief description of nature and extent of affiliation:* Miami International Holdings, Inc., which is the applicant's 100% owner, is the owner of 100% of the outstanding shares of The Bermuda Stock Exchange ("BSX"). BSX is the owner of 100% of the outstanding shares of BSD Nominee Limited.
5. *Brief description of business or functions:* To be the legal owner of shares held for the benefit of account holders of the Bermuda Securities Depository of BSX and to provide nominee services in relation to such shares.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Memorandum of Association dated October 24, 2001, and related documents is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* Not applicable.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Council (Directors) of BSD Nominee Limited

The following persons are the council of BSD Nominee Limited:

Council
Gregory A. Wojciechowski
James McKirdy

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

I. M 402 HOLDINGS, LLC

1. *Name:* M 402 Holdings, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on June 27, 2020.
4. *Brief description of nature and extent of affiliation:* M 402 Holdings, LLC ("M 402") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner. Minneapolis Grain Exchange, LLC ("MGEX") is a wholly-owned subsidiary of M 402.
5. *Brief description of business or functions:* M 402 is a holding company for the equity and voting securities of MGEX.
6. *A copy of the constitution:* Not applicable.

7. *A copy of the articles of incorporation or association including all amendments:* The Certificate of Formation dated July 27, 2020 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Limited Liability Company Agreement dated July 27, 2020 and By-Laws dated July 27, 2020 are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of M 402 Holdings, LLC

The following persons are the officers of M 402 Holdings, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer

Directors of M 402 Holdings, LLC

The following persons are the directors of M 402 Holdings, LLC:

Name
Thomas P. Gallagher

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

J. MINNEAPOLIS GRAIN EXCHANGE, LLC

1. *Name:* Minneapolis Grain Exchange, LLC
Address: 400 S 4th St, Minneapolis, MN 55415
2. *Form of organization:* Limited Liability Corporation.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on December 4, 2020.
4. *Brief description of nature and extent of affiliation:* Miami International Holdings, Inc. is the sole member and owner of M 402 Holdings, LLC, which in turn is the sole member and owner of 100% of the equity and voting securities of Minneapolis Grain Exchange, LLC (“MGEX”).

5. *Brief description of business or functions:* MGEX is a designated contract market and derivatives clearing organization that operates under the regulatory oversight of the Commodity Futures Trading Commission pursuant to Section 5 of the Commodity Exchange Act 7 U.S.C. §7. MGEX is also registered as a national securities exchange under Section 6(g) of Securities Exchange Act.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Certificate of Formation dated December 4, 2020 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Limited Liability Company Agreement dated December 4, 2020 and Bylaws dated December 4, 2020 are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of Minneapolis Grain Exchange, LLC

The following persons are the officers of Minneapolis Grain Exchange, LLC:

Name	Title
Mark G. Bagan	President & Chief Executive Officer
Layne G. Carlson	Treasurer, Secretary, Chief Compliance Officer & Chief Regulatory Officer
James D. Facente, Jr.	Director & Chief Risk Officer – Clearing & IT

Directors of Minneapolis Grain Exchange, LLC

The following persons are the directors of Minneapolis Grain Exchange, LLC:

Name
Thomas P. Gallagher, Chair
De’Ana H. Dow
Michael V. Dunn
Bradley Griffith
Christopher T. Matzdorf
Kerry L. Melius
Murray Stahl

Standing Committees of Minneapolis Grain Exchange, LLC

Executive Committee
Thomas P. Gallagher, Chairperson
Kerry L. Melius, First Vice Chairperson
Bradley Griffith
Murray Stahl
Mark G. Bagan*

Audit Committee
Thomas P. Gallagher, Chairperson
Mark G. Bagan
De'Ana H. Dow
Michael V. Dunn
Bradley Griffith

Nominations Committee
Bradley Griffith, Chairperson
De'Ana H. Dow
Michael V. Dunn
Thomas P. Gallagher
Christopher T. Matzdorf
Mark G. Bagan*

Regulatory Oversight Committee
De'Ana H. Dow, Chairperson
Michael V. Dunn
Bradley Griffith
Thomas P. Gallagher*
Mark G. Bagan*

Risk Management Committee
Bradley Griffith, Chairperson
De'Ana H. Dow
Thomas P. Gallagher*
Mark G. Bagan*

* Ex officio committee member

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

K. MIAX GLOBAL, LLC

1. *Name:* MIAX Global, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on June 30, 2015.
4. *Brief description of nature and extent of affiliation:* MIAX Global, LLC (“MIAX Global”) is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* MIAX Global focuses on the company's trading, technology and other projects primarily based outside the United States.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Amended and Restated Certificate of Formation dated June 25, 2021 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Amended and Restated Limited Liability Company Agreement dated June 25, 2021 is attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of MIAX Global, LLC

The following persons are the officers of MIAX Global, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Lance Emmons	Executive Vice President and Chief Financial Officer
Gregory A. Wojciechowski	President

Directors of MIAX Global, LLC

The following persons are the directors of MIAX Global, LLC:

Name
Thomas P. Gallagher

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

L. MIAX PRODUCTS, LLC

1. *Name:* MIAX Products, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Illinois, Illinois Limited Liability Company Act, 805 ILCS 180, on January 25, 2019.
4. *Brief description of nature and extent of affiliation:* MIAX Products, LLC ("MIAX Products") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* Development of financial products.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Restated Articles of Organization dated October 5, 2021 are attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Amended and Restated Limited Liability Company Agreement dated October 5, 2021 is attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of MIAX Products, LLC

The following persons are the officers of MIAX Products, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President

Directors of MIAX Products, LLC

The following persons are the directors of MIAX Products, LLC:

Name
Thomas P. Gallagher

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

M. DORMAN TRADING, LLC

1. *Name:* Dorman Trading, LLC
Address: 141 W. Jackson Boulevard, Suite 1900, Chicago, Illinois 60604
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Illinois, Illinois Limited Liability Company Act, 805 ILCS 180, on June 18, 2015.
4. *Brief description of nature and extent of affiliation:* Dorman Trading, LLC (“Dorman Trading”) is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* Dorman Trading is a full-service futures commission merchant (FCM) providing execution and clearing services for introducing brokers, retail customers, institutional clients and professional traders on a number of futures exchanges.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Articles of Organization dated June 18, 2015 are attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Fourth Amended and Restated Operating Agreement and Bylaws dated October 19, 2022 are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of Dorman Trading, LLC.

The following persons are the officers of Dorman Trading, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Daniel P. Dorman	Senior Vice President, Chief Operating Officer and Assistant Secretary
David Dorman	Senior Vice President, Operations
Robert Sheeren	Chief Financial Officer
Michael Higgins	Chief Compliance Officer
Mark Robertson	Vice President, Clearing and Floor Operations
Brian Gaffud	Vice President, Director of Business Development

Name	Title
Michael Stanton	Vice President, Business Development
James Tometz	Vice President, Operations
Wesley Chiu	Assistant Chief Financial Officer
Barbara J. Comly	Secretary

Directors of Dorman Trading, LLC

The following persons are the directors of Dorman Trading, LLC:

Name
Thomas P. Gallagher (Chairman)
Robert D. Prunetti
Brian Duggan

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

N. M 7 HOLDINGS, LLC

1. *Name:* M 7 Holdings, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on November 15, 2022.
4. *Brief description of nature and extent of affiliation:* M 7 Holdings, LLC ("M 7") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner. LedgerX LLC is a wholly-owned subsidiary of M 7.
5. *Brief description of business or functions:* M 7 is a holding company for certain investments.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Certificate of Formation dated November 15, 2022 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Limited Liability Company Agreement and By-Laws dated December 9, 2022 are attached.

9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of M 7 Holdings, LLC

The following persons are the officers of M 7 Holdings, LLC:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer

Directors of M 7 Holdings, LLC

The following persons are the directors of M 7 Holdings, LLC:

Name
Thomas P. Gallagher

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

O. LEDGERX LLC

- Name:* LedgerX LLC
Address: 7 Roszel Road, Suite 1A, Princeton, NJ 08540
- Form of organization:* Limited Liability Corporation.
- Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on April 8, 2014.
- Brief description of nature and extent of affiliation:* Miami International Holdings, Inc. is the sole member and owner of M 7 Holdings, LLC, which in turn is the sole member and owner of 100% of the equity and voting securities of LedgerX LLC (“LedgerX”).
- Brief description of business or functions:* LedgerX is a swap execution facility, derivatives clearing organization and designated contract market regulated by the Commodity Futures Trading Commission.
- A copy of the constitution:* Not applicable.
- A copy of the articles of incorporation or association including all amendments:* The Certificate of Formation dated April 8, 2014, is attached.

8. *A copy of existing by-laws or corresponding rules or instruments: The Amended and Restated Limited Liability Company Agreement dated September 29, 2014, is attached.*
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of LedgerX LLC

The following persons are the officers of LedgerX LLC:

Name	Title
Zachary Dexter	Chief Executive Officer
Josh Markou	Chief Financial Officer
Brian Mulherin	General Counsel
Erin Renee Schwartz	Chief Compliance Officer and Chief Regulatory Officer
James Outen	Chief Risk Officer and Chief Economist
William Bradley	Chief Technology Officer
Ryan Scott Mendel	Chief Information Officer
Barbara J. Comly	Corporate Secretary

Directors of LedgerX LLC

The following persons are the directors of LedgerX LLC:

Name
Thomas P. Gallagher (Chair)
Bryan Bishop
Lindsay L. Burbage
Zachary Dexter
Kurt M. Eckert
Jerome Kemp
Jill Sommers
Larry Thompson
Mark Wetjen

Standing Committees of LedgerX LLC

Regulatory Oversight Committee
Lindsay L. Burbage
Larry Thompson
Jerome Kemp
Jill Sommers

Risk Management Committee
Bryan Bishop
Zachary Dexter
Kurt M. Eckert
Thomas P. Gallagher
Jerome Kemp
Larry Thompson
Mark Wetjen

Participant Committee
Kurt M. Eckert
Zachary Dexter
Jerome Kemp
Larry Thompson

Nominating Committee
Lindsay L. Burbage
Kurt M. Eckert
Jill Sommers
Larry Thompson
Mark Wetjen

Disciplinary Panel
Bryan Bishop
Kurt M. Eckert
Jerome Kemp
Jill Sommers

Appeals Committee
Lindsay L. Burbage
Larry Thompson
Mark Wetjen

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

P. MIH EAST HOLDINGS, LIMITED

1. *Name:* MIH East Holdings, Limited
Address: 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540
2. *Form of organization:* Private Limited Company.
3. *Name of state, statute under which organized and date of incorporation:* England and Wales, Companies Act 2006, on March 20, 2023.
4. *Brief description of nature and extent of affiliation:* MIH East Holdings, Limited ("MIH East") is wholly-owned by Miami International Holdings, Inc., which is the applicant's 100% owner.
5. *Brief description of business or functions:* MIH East is a holding company for certain investments.
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Certificate of Incorporation dated March 20, 2023, is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Articles of Association are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Officers of MIH East Holdings, Limited

The following persons are the officers of MIH East Holdings, Limited:

Name	Title
Thomas P. Gallagher	Executive Officer
Lance Emmons	Chief Financial Officer

Directors of MIH East Holdings, Limited

The following persons are the directors of MIH East Holdings, Limited:

Name
Thomas P. Gallagher
Lance Emmons

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

Q. CONVEXITYSHARES, LLC

1. *Name:* ConvexityShares, LLC
Address: 7 Roszel Road, Suite 1A, Princeton, NJ 08540
2. *Form of organization:* Limited Liability Company.
3. *Name of state, statute under which organized and date of incorporation:* Delaware, Delaware Limited Liability Company Act (6 Del. C. § 18-101, et seq.), on December 3, 2020.
4. *Brief description of nature and extent of affiliation:* MIAX Futures, LLC, which is wholly-owned by Miami International Holdings, Inc., the applicant’s 100% owner, is the owner of 51% of the outstanding membership interests of ConvexityShares, LLC.
5. *Brief description of business or functions:* Sponsor of certain exchange-traded products. ConvexityShares, LLC is a registered Commodity Pool Operator (CPO) and Commodity Trading Advisor (CTA) with the National Futures Association (NFA).
6. *A copy of the constitution:* Not applicable.
7. *A copy of the articles of incorporation or association including all amendments:* The Certificate of Formation dated December 3, 2020 is attached.
8. *A copy of existing by-laws or corresponding rules or instruments:* The Limited Liability Company Operating Agreement dated February 5, 2021 and First Amendment to Limited Liability Company Operating Agreement dated March 10, 2021 are attached.
9. *The name and title of the present officers, governors, members of all standing committees, or persons performing similar functions:*

Managers of ConvexityShares, LLC

The following are the managers of ConvexityShares, LLC:

Name
MIAX Futures, LLC
T3i US Holdings Inc.

Officers of ConvexityShares, LLC

The following persons are the officers of ConvexityShares, LLC:

Name	Title
Simon Ho	Interim Chief Executive Officer & President
Melinda Ho	Treasurer, Chief Financial Officer & Secretary
Joseph W. Ferraro III	Interim Chief Compliance Officer
Charles Blades	Controller

10. *An indication of whether such business or organization ceased to be associated with the applicant during the previous year, and a brief statement of the reasons for termination of the association:* Not applicable.

EXHIBIT F

Exhibit Request:

A complete set of all forms pertaining to:

1. Application for membership, participation, or subscription to the entity.
2. Application for approval as a person associated with a member, participant, or subscriber of the entity.
3. Any other similar materials.

Response:

1. Pre-Application Survey Form (MIAX, PEARL & EMERALD)
2. Member Application (MIAX, PEARL & EMERALD)
3. Waive-In Member Application (MIAX, PEARL & EMERALD)
4. Amendment to Member Application (MIAX, PEARL & EMERALD)
5. Market Maker Member Guarantee (PEARL)
6. Clearing Member Give-Up Authorization and Guarantee (MIAX, PEARL & EMERALD)
7. User Agreement (MIAX, PEARL & EMERALD)
8. Sponsored Access Agreement (PEARL) **[Updated]**
9. Statutory Disqualification Notice (MIAX, PEARL & EMERALD)
10. Attestation, Consent to Jurisdiction and Authorization of Associated Person Membership – Firm Applicant (PEARL)
11. Attestation, Consent to Jurisdiction and Authorization of Associated Person Membership – Individual Applicant (PEARL)
12. Market Data Policies (MIAX, PEARL & EMERALD)
13. Exchange Data Agreement (MIAX, PEARL & EMERALD)
14. Affiliated Companies List – Schedule A to Exchange Data Agreement (MIAX, PEARL & EMERALD)
15. Data Feed Request Form – Schedule B to Exchange Data Agreement (MIAX, PEARL & EMERALD)

16. Service Facilitator List – Schedule C to Exchange Data Agreement (MIAX, PEARL & EMERALD)
17. Market Data Subscriber Agreement – Schedule D to Exchange Data Agreement (MIAX, PEARL & EMERALD)
18. Service Bureau Agreement (MIAX, PEARL & EMERALD)
19. Extranet Connection Agreement (MIAX, PEARL & EMERALD) **[Updated]**
20. Extranet Information Form – Schedule A (MIAX, PEARL & EMERALD)
21. Volume Aggregation Request Form (MIAX, PEARL & EMERALD)
22. Clearing Member Restriction Form (MIAX, PEARL & EMERALD)

The Exchange intends to use Form U-4, the Uniform Application for Securities Industry Registration or Transfer, for persons applying to be associated persons of a Member.

EXHIBIT J

Exhibit Request:

A list of the officers, governors, members of all standing committees, or persons performing similar functions, who presently hold or have held their offices or positions during the previous year, indicating the following for each:

1. Name.
2. Title.
3. Dates of commencement and termination of term of office or position.
4. Type of business in which each is primarily engaged (e.g., floor broker, specialist, odd lot dealer, etc.).

Response:

1. **Officers of MIAX PEARL, LLC**

The following persons are the officers of the Exchange:

Name	Title
Thomas P. Gallagher	Chairman and Chief Executive Officer
Douglas M. Schafer Jr.	Chief Information Officer and Executive Vice President
Barbara Comly	Executive Vice President, General Counsel and Corporate Secretary
Lance Emmons	Executive Vice President and Chief Financial Officer
Edward Deitzel	Executive Vice President, Chief Regulatory Officer and Chief Compliance Officer
Shelly Brown	Executive Vice President – Strategic Planning and Business Development
Harish Jayabalan	Executive Vice President – Chief Risk Officer and Chief Information Security Officer
John Smollen	Executive Vice President – Head of Exchange Traded Products and Strategic Relations
Randy Foster	Senior Vice President – Business Systems Development
Matthew Rotella	Senior Vice President – Chief Technology Officer
Joseph W. Ferraro III	Senior Vice President – Deputy General Counsel
Deborah Carroll	Senior Vice President – Associate General Counsel and Assistant Corporate Secretary
Joseph S. Bracco	Senior Vice President – Head of Sales

Name	Title
Rodney Hester	Senior Vice President – Systems Infrastructure
Amy Neiley-Avayou	Senior Vice President – Trading Operations and Listings
Paul Anders (Andy) Nybo	Senior Vice President – Chief Communications Officer
Charles Blades	Vice President – Controller
Kateryna Brezitska	Vice President – Equities Planning and Development
Daniel J. Brill	Vice President – Options Strategic Planning & Business Development
Jonathan S. Dowd	Vice President – Business Strategy
Laurence Gardner	Vice President – Regulatory Operations
Mitchell Garfinkel	Vice President – Finance
Daniel Hsu	Vice President – Exchange Pricing & Business Analysis
Thomas Jarck	Vice President – Proprietary Product Development
Joseph P. Kamnik	Vice President – Senior Counsel
Gamini Karunaratne	Vice President – Network Engineering & Data Center Operations
Kaitlin Meyer	Vice President – Marketing and Sales
Ronald Miller	Vice President – Compliance
Lawrence O’Leary	Vice President – Regulatory Oversight
James O’Neil	Vice President and Director of Physical Security and Safety
Gerard (Chaz) Palmeri	Vice President – Systems Operations
Vinay Rao	Vice President – Trading Systems Development
Siddharth Sahoo	Vice President – Trading Systems Development
Christopher Solgan	Vice President – Senior Counsel
Christopher Swisher	Vice President – Market Surveillance
Tia Toms	Vice President – Administration
Gregory Ziegler	Vice President – Senior Counsel
Katherine Comly	Assistant Vice President, Associate Counsel and Director of ESG
Tatiana Kitaigorovski	Assistant Vice President – Associate Counsel
Michael Slade	Assistant Vice President – Associate Counsel

The officers of the Exchange serve until their successors are appointed in accordance with the By-Laws of the Exchange. Officers of the Exchange serve at the direction of the Board of Directors.

2. Directors of MIAX PEARL, LLC

The following persons are the directors of the Exchange:

Name	Classification	Term of Office	Type of Business
Thomas P. Gallagher	Industry	So long as CEO of the Company	Securities Exchange
Sean Barry	Industry/Member Representative	Class I – 2024	Chief Information Officer – ADM Investor Services, Inc.
David Brown	Non-Industry	Class I – 2024	Retired
Guy Dowman	Industry/Member Representative	Class I – 2024	Head of Options Business Development for HRT Financial, LP – Hudson River Trading
Lawrence E. Jaffe	Non-Industry/Independent	Class I – 2024	Attorney (Retired)
Paul Kenyon	Industry	Class I – 2024	Business Development, Americas – Jump Trading, LLC
William J. O'Brien IV	Non-Industry	Class I – 2024	Chief Executive Officer – Performance Operating Partners, LLC; President and Chief Operating Officer – O'Brien Energy Company, LLC
Robert D. Prunetti	Non-Industry	Class I – 2024	President – Phoenix Ventures, LLC
William T. Bergman	Non-Industry/Independent	Class II – 2025	Vice President and Special Assistant to the President – Temple University
Lindsay L. Burbage	Non-Industry/Independent	Class II – 2025	Attorney
Michael Harrington	Industry	Class II – 2025	Head of Client Relationships – Citadel, LLC
John E. McCormac	Non-Industry/Independent	Class II – 2025	Township Mayor – Woodbridge, New Jersey; Former New Jersey State Treasurer
Miguel Moratiel	Non-Industry	Class II – 2025	Manager – MDR Inversiones, S.L.

Name	Classification	Term of Office	Type of Business
Scott Richardson	Industry	Class II – 2025	Managing Partner (Austin) – Optiver Services US, LLC
Steven Sosnick	Industry/Member Representative	Class II – 2025	Chief Strategist – Interactive Brokers LLC
Talal Jassim Al-Bahar	Non-Industry	Class III – 2026	Chairman – IFA Hotels & Resorts K.S.C.; Vice Chairman and CEO – Kuwait Real Estate K.S.C.
Kurt M. Eckert	Industry	Class III – 2026	Former Partner and Head of Market Structure – Wolverine Trading, LLC
Leslie Florio	Non-Industry/Independent	Class III – 2026	Vice President – Maxwell Place Condominium Association
Nathaniel Pomeroy	Industry/Member Representative	Class III – 2026	Principal – Wolverine Trading Technologies, LLC
Cynthia Schwarzkopf	Non-Industry/Independent	Class III – 2026	Professional and Philanthropic Public Speaker
Erik Swanson	Industry/Member Representative	Class III – 2026	Chief Executive Officer – Simplex Trading, LLC
Christopher L. Whittington	Non-Industry	Class III – 2026	Attorney

3. Committees of MIAX PEARL, LLC

The standing committees of the Board and the persons appointed to sit on the standing committees are as follows:

COMPENSATION COMMITTEE	
Name	Classification
Cynthia Schwarzkopf (Chair)	Non-Industry/Independent
William T. Bergman	Non-Industry/Independent
Robert D. Prunetti	Non-Industry

AUDIT COMMITTEE	
Name	Classification
Robert D. Prunetti (Chair)	Non-Industry
John E. McCormac	Non-Industry/Independent
Cynthia Schwarzkopf	Non-Industry/Independent

REGULATORY OVERSIGHT COMMITTEE	
Name	Classification
Lindsay L. Burbage (Chair)	Non-Industry/Independent
Leslie Florio	Non-Industry/Independent
Lawrence E. Jaffe	Non-Industry/Independent

APPEALS COMMITTEE	
Name	Classification
Lawrence E. Jaffe (Chair)	Non-Industry/Independent
Kurt M. Eckert	Industry
Guy Dowman	Industry/Member Representative

TECHNOLOGY COMMITTEE	
Name	Classification
Leslie Florio (Chair)	Non-Industry/Independent
Sean Barry	Industry/Member Representative
David Brown	Non-Industry
Kurt M. Eckert	Industry
John E. McCormac	Non-Industry/Independent

EXHIBIT M

Exhibit Request:

Provide an alphabetical list of all members, subscribers or other users, including the following information:

1. Name;
2. Date of election to membership or acceptance as a member, subscriber or other user;
3. Principal business address and telephone number;
4. If member, subscriber or other user is an individual, the name of the entity with which such individual is associated and the relationship of such individual to the entity (e.g. partner, officer, director, employee, etc.);
5. Describe the type of activities primarily engaged in by the member, subscriber, or other user (e.g. floor broker, specialist, odd lot dealer, other market maker, proprietary trader, non-broker dealer, inactive or other functions). A person shall be “primarily engaged” in an activity or function for purposes of this item when that activity or function is the one in which that person is engaged for the majority of their time. When more than one type of person at an entity engages in any of the six types of activities or functions enumerated in this item, identify each type (e.g. proprietary trader, Registered Competitive Trader and Registered Competitive Market Maker) and state the number of participants, subscribers, or other users in each; and
6. The class of membership, participation or subscription or other access.

Response:

1. **MIAX Pearl Options.** Attached is a list of the members of the MIAX Pearl Options exchange dated as of June 30, 2023, including the information set forth in items 1-6 above.
2. **MIAX Pearl Equities.** No change to the list of the members of the MIAX Pearl Equities exchange dated as of June 14, 2023, previously filed.

This Agreement is made among and between MIAX Pearl, LLC (“MIAX Pearl” or the “Exchange”), a Delaware limited liability company, with its principal offices located at 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540, the Sponsoring Member identified in Part I below and the Sponsored User identified in Part II below. This Agreement is effective when executed by MIAX Pearl (“Effective Date”). Pursuant to the terms of this Agreement, MIAX Pearl will provide the Sponsored User with access to the MIAX Pearl System. Use of the MIAX Pearl System by Sponsored User is governed by MIAX Pearl Rules 210, 500 and 2602. MIAX Pearl may terminate or modify the Sponsored User’s connection at any time, without prior notice and without any liability to MIAX Pearl as a consequence thereof.

1. Sponsoring Member Section

The Sponsoring Member hereby certifies that it is an approved Member of MIAX Pearl in good standing and has entered into a User Agreement with MIAX Pearl governing its access to and use of services provided by MIAX Pearl. The Sponsoring Member acknowledges that it has been designated by the Sponsored User (identified by in Part II) to execute transactions on or through MIAX Pearl.

The Sponsoring Member confirms the following agreements and controls are in place:

A Sponsoring Member that provides Sponsored Access shall execute and maintain agreements with each Sponsored User.

A Sponsoring Member that provides Sponsored Access shall execute and maintain agreements with each third party (“Third Party Provider”) that provides a Sponsored Access System to Sponsored Users for accessing MIAX Pearl, specifying which of the financial and regulatory controls are satisfied.

Each Sponsoring Member shall establish adequate procedures and controls that permit it to effectively monitor and control the Sponsored Access to systemically limit the Sponsoring Member’s financial exposure.

Each Sponsoring Member shall have systemic controls reasonably designed to ensure compliance by the Sponsored User with all applicable Regulatory Requirements.

Each Sponsoring Member must maintain an up-to-date list of persons who could obtain access to MIAX Pearl on behalf of Sponsored User (i.e., Authorized Traders) and provide that list to the Exchange upon request.

Each Sponsoring Member must have reasonable procedures to ensure that Sponsored User and all of Sponsored User’s Authorized Traders maintain the physical security of MIAX Pearl, which includes, but is not limited to, the equipment for accessing the facilities of MIAX Pearl, to prevent the unauthorized use or access to MIAX Pearl, including the unauthorized entry of information into MIAX Pearl, or the information and data made available therein.

Each Sponsoring Member must otherwise comply with the MIAX Pearl Rules. If MIAX Pearl determines that Sponsored User or an Authorized Trader has caused Sponsoring Member to violate the MIAX Pearl Rules, MIAX Pearl may direct the Sponsoring Member to suspend or withdraw Sponsored User’s status as a Sponsored User or the person’s status as an Authorized Trader and, if so directed, Sponsoring Member must suspend or withdraw such status.

Each Sponsoring Member shall ensure that appropriate supervisory personnel receive and review timely reports of all trading activity by its Sponsored Users sufficient to permit the Sponsoring Member to comply with applicable Regulatory Requirements, and to monitor for illegal activity such as market manipulation or insider trading.

To the extent the Sponsoring Member is not a clearing firm, the Sponsoring Member’s clearing firm, which must be a Member, must provide the Exchange with a Letter of Authorization, which specifically accepts responsibility for the clearance of the Sponsored User’s transactions.

Sponsoring Member Authorization

We are a Member in good standing and have been designated by the Sponsored User to execute, clear and settle transactions resulting on or through MIAX Pearl. We acknowledge and agree that any orders entered into MIAX Pearl by the Sponsored User or any person acting on behalf of or in the name of the Sponsored User that identify us as the Sponsoring Member and any execution occurring as a result of such orders are binding in all respects on us. In that regard, we acknowledge and agree that we are responsible for all related contractual and regulatory obligations. We hereby acknowledge and agree that we are responsible for any and all actions taken by the Sponsored User or any person acting on behalf of or in the name of the Sponsored User on or through MIAX Pearl.

Member

CRD#

Address

City, State, Zip

Contact Name

Phone

Fax

Email

Name of Authorized Official

Title

Signature of Authorized Official

Date

2. Sponsored User Section

Authorized Acknowledgement of the Sponsored User

The Sponsoring Member (identified in Part I) has agreed to provide the undersigned Sponsored User access to the MIAX Pearl System for trading in options and/or equity securities. The Sponsoring Member has agreed to allow the Sponsored User to conduct activity and effect transactions on MIAX Pearl in the name of the Sponsoring Member. Access by the Sponsored User is available only to the extent authorized by the Sponsoring Member. Prior to obtaining access to the MIAX Pearl System, the Sponsored User must enter into a User Agreement with MIAX Pearl governing its access to and use of services provided by MIAX Pearl. Additionally, a Sponsored User that is a broker-dealer must file a Uniform Application for Broker-Dealer Registration (Form BD) with the Securities and Exchange Commission and register with the Central Registration Depository (“Web CRD[®]”) maintained by FINRA.

Sponsoring Member acknowledges and agrees that it is responsible for all orders entered on or through the Exchange by the Sponsored User and any person acting on behalf of or in the name of such Sponsored User. Sponsoring Member further acknowledges and agrees that it must be identified on any order submitted by the Sponsored User as the Sponsoring Member of that order, and that any execution occurring as a result of an order entered by a Sponsored User shall be binding in all respects on the Sponsoring Member. Furthermore, Sponsoring Member acknowledges and agrees that as a Sponsoring Member they are responsible for all contractual and regulatory obligations arising from this Sponsored User relationship. Such regulatory obligations include, but are not limited to:

- compliance with SEC Rule 15c3-5, including the requirement to establish, document, and maintain a system of risk management controls and supervisory procedures that, among other things, are reasonably designed to: (i) systematically limit the financial exposure of the broker or dealer that could arise as a result of market access, and (ii) ensure compliance with all regulatory requirements applicable to market access;
- compliance with SEC Rule 15c3-5, including the requirement to maintain direct and exclusive control over the risk management controls and supervisory procedures implemented for the Sponsored Participant;
- Question and Answer 5 of “Responses to Frequently Asked Questions Concerning Risk Management Controls for Brokers or Dealers with Market Access”^[1]; and
- where a Sponsored Participant is an Exchange registered Market Maker, compliance with the Market Maker obligations required by applicable Exchange Rules.

Sponsoring Member further acknowledges and agrees that it is responsible for any and all actions taken by the Sponsored User or any person acting on behalf of or in the name of Sponsored Participant on or through the Exchange. For the sake of clarity, the foregoing Sponsoring Member obligations also apply to orders entered on or through the Exchange by a Sponsored Participant that is acting as a Market Maker (as that term is defined in Rule 1.5(l) and Chapter XI in the Rules of the Exchange).

In addition to Exchange Rules 210, 500 and 2602, Sponsoring Member has further reviewed other provisions of the Rules of the Exchange and the terms of Sponsoring Member Agreement with the Exchange. The Sponsored User has agreed to comply with all applicable Rules of the Exchange governing the entry, execution, reporting, clearing, and settling of orders in securities eligible for trading on the Exchange. While the Sponsored User agrees to comply with the Rules of Exchange and the terms of the Sponsoring Member Agreement with the Exchange, Sponsoring Member understands that the Sponsoring Member still ultimately remains responsible for all orders entered on or through the Exchange by the Sponsored User. Sponsoring Member further understands that it is required and agrees to impose appropriate regulatory and supervisory procedures in connection with orders directed to the Exchange by the Sponsored User.

^[1] See Question 5, “Responses to Frequently Asked Questions Concerning Risk Management Controls for Brokers or Dealers with Market Access”, April 15, 2015, available at: <https://www.sec.gov/divisions/marketreg/faq-15c-5-risk-management-controls-bd.htm>. See also: “Overview of Exchange-Provided Risk Management Controls and Port Level Setting Changes in relation to Market Access Rule 15c3-5” at: https://cdn.cboe.com/resources/membership/Trading_Notice_-_BD_Diligence_Requests_FINAL.pdf.

Sponsored User shall promptly upon request provide Sponsoring Member with access to such books and records and financial information that is necessary to allow the Sponsoring Member to comply with its regulatory obligations with respect to activity of the Sponsored User within the Sponsored Access arrangement, and otherwise cooperate with the Sponsoring Member in furtherance of Sponsoring Member's compliance with applicable Regulatory Requirements. Information provided by Sponsored Users to Sponsoring Members pursuant to such requests shall be maintained as confidential by the Sponsoring Member, provided that such information shall be available to MIAX Pearl upon request for regulatory purposes.

Sponsored User shall maintain its trading activity within the credit, product or other financial limits specified by the Sponsoring Member.

Sponsored User shall maintain all technology permitting sponsored access to MIAX Pearl in a physically secure manner and may not permit unauthorized Traders to use or obtain access to MIAX Pearl. Sponsored User shall familiarize its Authorized Traders with the Regulatory Requirements and will provide appropriate training prior to use or access to MIAX Pearl.

Sponsored User shall agree that the Sponsoring Member or MIAX Pearl may immediately terminate the Sponsored Access if the Sponsoring Member or MIAX Pearl determines that continuing such access poses serious risk to the Sponsoring Member or to the integrity of the market.

The undersigned, on behalf of the applicant Sponsored User, does hereby acknowledge and agree to the terms and provisions of this Agreement (including the General Terms and Conditions) and MIAX Pearl Rules 210, 500 and 2602, and shall comply with all MIAX Pearl Rules and procedures, as amended.

Sponsored User CRD#

Address

City, State, Zip

Contact Name

Phone Fax

Email

Name of Authorized Official Title

Signature of Authorized Official Date

Accepted by MIAX Pearl on:

Name and Title of Exchange Official:

Signature of Exchange Official:

This Extranet Connection Agreement (“Agreement”) is executed and entered into as of the date last signed (“Effective Date”) by and between Miami International Securities Exchange, LLC (“MIAX”), MIAX Pearl, LLC (“MIAX Pearl”), and/or MIAX Emerald, LLC (“MIAX Emerald”), as identified below, each a Delaware limited liability company with its principal place of business at 7 Roszel Road, Suite 1A, Princeton, New Jersey 08540 (individually or collectively the “Exchange”), and the extranet provider, as identified below (the “Extranet”).

WHEREAS, the Extranet provides certain network connectivity between and among its customers, some of whom desire information and data (“Information”) from the Exchange (“Customers”), and the Extranet desires to provide connectivity to the Exchange to those Customers;

WHEREAS, the Exchange provides certain services to its customers and is willing to provide the Extranet with connectivity to the Exchange as a means to provide connectivity into the Exchange to Customers.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. Provision of Connectivity

(a) The Exchange shall provide the Extranet with a network connection into the Exchange’s network (the “Exchange Network”) in order to connect Customers to the Exchange (the “Connection”), as permitted in this Agreement or in the Exchange Requirements. “Exchange Requirements” shall mean (i) the applicable rules, regulations, interpretations, decisions, opinions, orders and other requirements of the SEC; (ii) the applicable rules and regulations of the Exchange; (iii) the Exchange’s applicable decisions, policies, interpretations, operating procedures, specifications, requirements, and other documentation (including, but not limited to, user guides); and (iv) the successors, as they may exist at the time, of the components of the Exchange Requirements. The Exchange will use commercially reasonable efforts to provide the Extranet with reasonable advance notice of any changes to the Exchange’s decisions, policies, operating procedures, requirements, and other documentation (including, but not limited to, user guides). The Extranet warrants that it is, will continue to be during the term of this Agreement, and will only use the Connection in compliance with the Agreement and the Exchange Requirements.

(b) The Extranet shall only provide, or cause or permit to be provided, connectivity to the Exchange to a Customer who, at the time of the provision of the connectivity, is of a type qualified (as set forth in the Exchange Requirements) to receive Information from the Exchange. The Extranet agrees that the Exchange may have different qualification requirements for different types of Customers. Upon an inquiry from the Extranet, the Exchange shall undertake reasonable efforts to promptly notify the Extranet whether a potential or actual Customer is eligible to receive Information from the Exchange and the types of Information for which the Customer is eligible. Such inquiries from the Extranet shall only be generated if actual or potential Customer inquiries of the Extranet as to the type of Information for which it is eligible. BY EXECUTING THIS AGREEMENT, THE EXCHANGE DOES NOT GUARANTEE THE PROVISION OF ANY INFORMATION TO THE EXTRANET OR TO ANY CUSTOMERS. THE PROVISION OF SOME INFORMATION DOES NOT SIGNIFY THAT OTHER INFORMATION WILL BE PROVIDED.

(c) The Extranet shall have access to the Exchange Network through the MIAX Express Network Interconnect (“MENI”) in order to provide Customers with access to the Exchange and/or its data feeds. MENI may be accessed to: (1) receive Exchange Data feeds (the “Feeds”) and to distribute the Feeds to Customers; and (2) provide Customers with network connectivity services in order to access or receive information from the MENI. A Customer authorized to receive services under (1) and (2) is a Customer of the Extranet that: (x) has entered into an effective and current participant agreement and/or market data recipient agreement with the Exchange; and (y) the Exchange has approved to connect to the Exchange via connectivity supplied by Extranet or to receive Exchange data transmitted through the Extranet. Any Customer of the Extranet that is not so authorized is referred to herein as an Unauthorized Customer. In order for a Customer to be approved to receive services under (1) or (2), the Extranet must submit a request to the Exchange at TradingOperations@MIAXOptions.com that includes the name and contact information of the party to whom connectivity will be provided. The Exchange will typically approve or reject a request within two (2) business days, but is under no obligation to respond within that time frame. Where a request is rejected by the Exchange, the Extranet may not provide the applicable party with connectivity to the Exchange. In the event the Extranet provides an Unauthorized Customer with access to the Exchange and/or the Feeds (“Unauthorized Access”) the Extranet shall be in breach of this Agreement and shall be liable to the Exchange for any payments that should have been made to the Exchange by the Unauthorized Customer for services. The Extranet shall maintain, keep current, and provide to the Exchange monthly (pursuant to Section 4) and upon request, a list of Authorized Extranet Customers to whom the Extranet provides either or both of the services under (1) and (2) above.

2. Fees

The Extranet will pay to the Exchange the then effective charges as set forth in the Exchange Requirements (as those charges may be changed from time to time), including interest and late fees and/or penalties (collectively, "Fees"). The Fees are subject to modification by the Exchange at any time, without prior notice to the Extranet.

3. Use of Connection

(a) The Extranet shall take reasonable security precautions to prevent unauthorized individuals or entities from gaining access to the Connection and Information. Connectivity must be wholly owned and managed by the Extranet; an Extranet must maintain their own connectivity and shall not utilize the connectivity of another Extranet. The Extranet shall comply with all reasonable security specifications or requirements of the Exchange in order to prevent the Connection and the Information from being improperly used or accessed or from being improperly taken. The Extranet shall not provide Customers with access to the Exchange or the Information, without the Exchange's prior written consent. If the Extranet nevertheless does provide such access without the Exchange's prior written consent, the Extranet shall be liable to the Exchange, as set forth in Section 2, for Fees, which would otherwise be due the Exchange from such unauthorized Customers for receipt of goods and services, including, but not limited to, Information from the Exchange. If the Extranet becomes aware of a potential unauthorized use or access by a Customer, the Extranet shall notify the Exchange immediately of such use.

(b) The Extranet acknowledges that it has no rights in or to the Information, except for the right to transmit the Information to the degree permitted under this Agreement and the agreement between the Exchange and a Customer, to the extent such Customer may be qualified to receive Information as set forth in Section 1(b). The Extranet acknowledges and agrees that the Exchange has (i) proprietary rights in the information and data that originates on, derives from or relates to the Exchange, in the information and data that relates to individuals and entities that are regulated by the Exchange, and in the information and data that relates to activities that are regulated or operated by the Exchange, and (ii) compilation or other rights in information and data gathered from other sources. All Information, including without limitation any and all intellectual property rights inherent therein or appurtenant thereto, shall, as between the parties, be and remain the sole and exclusive property of the Exchange. The Extranet shall not, by act or omission, diminish or impair in any manner the acquisition, maintenance, and full enjoyment by the Exchange, its licensees, transferees and assignees, of the proprietary rights of the Exchange in the Information and the Exchange's networks and system. The Extranet acknowledges and agrees that individuals and entities that provide information, goods and services to the Exchange may have exclusive proprietary rights in their respective information and data. Such information, goods and services shall be included in the definition of Information.

(c) The Extranet agrees (i) not to format, display, access (except to the degree reasonably necessary to maintain the security of the Extranet's network and not otherwise in violation of this Agreement) or alter the Information received through and from the Connection; (ii) not to affect the integrity of the Information; and (iii) not to render the Information inaccurate, unfair, uninformative, fictitious, misleading, or discriminatory. The Extranet shall make proper provisions to ensure adequate bandwidth and redundancy throughout its networks to ensure that all Extranet Customers are provided with an adequate level of service so as to not affect the integrity of the Information and not render the Information inaccurate, unfair, uninformative, fictitious, misleading, or discriminatory. The Extranet represents that it will not interfere with or adversely affect any of the component parts or processes of the Information, the Connection or the Exchange's systems, or any use thereof by any other authorized individuals or entities, or the distribution or operation of the Information, the Connection or the Exchange's systems.

(d) If any Customer fails to comply with any of the conditions, terms or provisions of this Agreement applicable to Customers, of any agreement between a Customer and the Exchange and/or the Extranet for the access to the Exchange and/or the Information, or any other agreement between a Customer and the Exchange, and Customer has failed to cure such non-compliance within the cure period, if any, set forth in the applicable agreement, or if a Customer has made any representation in any such agreements which was or has become untrue, then the Extranet shall, within five (5) business days after receipt of notice from the Exchange of such failure or untruth, cease providing access to the Exchange and to the Information to such Customer and shall, within seven (7) business days following the receipt of such notice, confirm such cessation by notice to the Exchange.

4. Monthly Reporting

Each month, the Extranet shall provide the Exchange with a report that consists of the names of Customers, the location of each Customer Premises Equipment ("CPE") Configurations for each Customer, as well as the type of service being provided to each Customer (i.e., FIX, ToM feed, AIS feed, ToM retransmission, AIS retransmission, etc.) (a "Report"). Such reporting shall occur within five (5) days of the end of the applicable month. Upon the initiation of services by the Extranet to a Customer or any update to services, the Extranet shall deliver a completed Schedule A to this Agreement.

5. Customers; Audit

(a) During regular business hours, the Exchange may cause the Extranet's (i) records, (ii) reports and payments to the Exchange, and (iii) the Extranet's system and service (and all instruments and apparatus used in connection therewith), to the extent such systems and services relate to the provision of Information to Customers, to be reviewed by the Exchange personnel and/or auditors of the Exchange's choice. The review shall be scheduled upon reasonable notice to the Extranet, depending upon the circumstances and conducted in locations where the Extranet's records are kept or where the Extranet's system is located. In addition to or in lieu thereof, the Extranet shall provide the Exchange promptly with information or materials in response to any request for information. The Extranet shall make available for examination all records, reports, payments, and supporting documentation, and the Extranet's system and service necessary in the judgment of the Exchange audit personnel to reach a conclusion as to the accuracy and completeness of: (i) the Extranet's Reports to the Exchange, (ii) the payments connected therewith, and (iii) compliance with the Agreement and the Exchange Requirements. If the review conducted by the Exchange determines there is underreporting, underpayment or other financial non-compliance, including the provision of Unauthorized Access to an Unauthorized Customer, then, at the Exchange's sole discretion, either the Extranet shall cause the Extranet's auditors (at the Extranet's sole expense) to conduct a review and to determine the magnitude of any adjustments of amounts previously remitted to the Exchange within ninety (90) days after notice from the Exchange, or the Exchange or its auditors shall determine the magnitude of any such adjustments. If such audit or review discloses additional underreported or underpaid amounts or other financial non-compliance, such amounts shall be remitted to the Exchange, together with applicable interest thereon at the rate of 11/2 % per month. If the review or response to the Exchange's request for information shows other non-compliance, then the Extranet shall comply with the Exchange's demand for compliance. The Exchange's determination in all cases shall be deemed conclusive. The Exchange agrees that liability pursuant to this subsection for underreporting, or underpaying for shall be limited to unpaid fees by the Extranet as well as unpaid fees for any Unauthorized Access to an Unauthorized Customers, together with interest, for the three (3) years preceding the earlier of the date that the Extranet, the Extranet's auditors or the Exchange first knew that such underreporting or underpayment has occurred, if such underreporting or underpayment is solely the result of a good faith error by the Extranet.

(b) Further, if such underreporting, underpayment or other financial non-compliance is equal to or greater than five percent (5%) of the monthly invoiced amount for any audited or unaudited period referred to herein, the Extranet shall, in addition to remitting the fees and applicable interest due relative to such underreporting, underpayment or other financial non-compliance, reimburse the Exchange, for any audit, legal or administrative costs and expenses incurred to detect and rectify such underreporting, underpayment or other financial non-compliance, provided, however, that such costs and expenses are incurred in good faith and are not unreasonable given the amount of work necessary to detect and determine the extent of, and the actual amount of, such underreporting, underpayment or other financial non-compliance.

6. Term of Agreement

(a) The initial term of this Agreement shall commence upon the Effective Date or the date the Connection is provided and, unless the Agreement is otherwise terminated, the term shall continue until this Agreement is terminated by at least thirty (30) days prior written notice by a party hereto given to the other. Notwithstanding the foregoing, this Agreement may be terminated by:

- (i) either party for a breach of this Agreement (except as set forth in Section 6(a)(ii) below), upon not less than fifteen (15) days prior written notice to the breaching party, unless, if the breach is capable of being cured, the breach is cured within the notice period;
- (ii) either party, if an invoice has not been paid in full within sixty (60) days from the date of such invoice;
- (iii) the Exchange, immediately, in the event that the Extranet becomes insolvent; or the Extranet makes an assignment for the benefit of creditors; or the Extranet does not pay its debts as they become due or admits its inability to pay its debts when due; or the Extranet files or has filed against it any petition under any provision of the Bankruptcy Act or an application for a receiver, trustee, or custodian is made by anyone or the Extranet becomes the subject of any proceedings of bankruptcy, insolvency, reorganization, dissolution, receivership, liquidation or arrangement, adjustment, or composition with creditors;
- (iv) the Exchange, immediately (with notice where practicable), in the event that the Extranet is not permitted or not able to receive or the Exchange is prevented from disseminating the Information, or any part thereof; or any representation, warranty or certification made by the Extranet in the Agreement or in any other document furnished by Extranet is, as of the time made or furnished, false or misleading; the Extranet proceeds with a proposed action which would result in a default of its obligations or covenants under this Agreement or in a breach of any representation, warranty or certification, which is material to the Exchange for regulatory, commercial or other reasons, made by the Extranet in connection herewith, after the Exchange has notified the Extranet that such proposed action would constitute a default hereunder; the Exchange terminates for cause the Extranet's receipt of any other service or product provided by or on behalf of the Exchange; or the Exchange, in its sole discretion, determines that the Extranet Equipment or the Connection has or is likely to have an adverse impact on the operation or performance of the Exchange's network and system, the Information or market or likely to cause disproportionate harm to the Exchange's interests should termination be delayed; or

(v) the Exchange, upon not less than fifteen (15) days prior written notice, in the event that any representation, warranty or certification made by the Extranet in the Agreement or in any other document furnished by the Extranet becomes untrue or inaccurate and is not made true or accurate within the notice period.

(b) Upon termination of this Agreement, the Extranet shall cease any and all use of the Connection and the Information. The Extranet acknowledges and agrees that the exercise by the Exchange of the remedies set forth herein for failure of the Extranet to pay all Fees related to the Connection shall not be deemed or considered to be (and, to the extent permitted by applicable law, the Extranet waives any right to represent or assert that any such exercise constitutes) an act or omission or any improper denial or limitation of access to any Information or facility operated by the Exchange. The right of termination set forth herein is in addition to any other remedy at law or in equity, consistent with the Agreement, that is available to the Exchange with respect to a breach by the Extranet and is in addition to anything otherwise set forth herein. In the event of a party's default under this Agreement, the non-defaulting party shall have all rights available at law or equity, including the right of set-off. In no event shall termination by either party relieve the other party of obligations already incurred.

7. Changes to Service

The Extranet acknowledges and agrees that nothing in this Agreement constitutes an undertaking by the Exchange: (a) to continue the Connection, or any aspect of it, in the present form or configuration or under the current specifications or requirements; or (b) to continue to use existing communications facilities. The Exchange, in its sole discretion, may from time to time make additions to, deletions from or modifications: (i) to the Connection; (ii) to the specifications and requirements; and (iii) to the communications facilities. The Exchange shall undertake reasonable efforts to notify the Extranet of any change to the Connection (other than a minor change) prior to any such change, unless a malfunction in the Exchange's systems or network necessitates modifications on an accelerated basis or an emergency situation precludes such advance notice. Use of the Connection after any change shall constitute acceptance of the Connection, as changed. Under no circumstances shall the Exchange delay the implementation any such changes due to delays by the Extranet in implementing related changes in the Extranet's systems or networks or in the systems or networks of Customers.

8. Requirements of Self-Regulatory Organization; Actions To Be Taken In Fulfillment of Statutory Obligations

Extranet acknowledges that (a) the Exchange is registered with the Securities and Exchange Commission (the "SEC") as a registered national securities exchange; (b) the Exchange has a statutory obligation to protect investors and the public interest, and to ensure that quotation information supplied to investors and the public is fair and informative, and not discriminatory, fictitious or misleading; (c) Section 19(g)(1) of the Securities Exchange Act of 1934, as amended (the "Act") mandates that the Exchange, as a self-regulatory organization, comply with the Exchange Requirements; (d) the Exchange has jurisdiction over its members to enforce compliance with the Exchange Requirements; and (e) the Exchange is obligated to offer terms that are not unreasonably discriminatory between Extranets, subject to applicable Exchange Requirements. Accordingly, Extranet agrees that the Exchange, when required to do so in fulfillment of its statutory obligations, may, temporarily or permanently, unilaterally condition, modify or terminate the right of any or all individuals or entities to receive or use the Information. The Exchange shall undertake reasonable efforts to notify Extranet of any such condition, modification or termination, and Extranet shall promptly comply with any such notice within such period of time as may be determined in good faith by the Exchange to be necessary, consistent with its statutory obligations. Any person that receives such a notice shall have available to it such procedural protections as are provided to it by the Act and the applicable rules thereunder. If Extranet is a Member of the Exchange, then Extranet expressly acknowledges and agrees that (x) this Agreement does not limit or reduce in any way Extranet's obligations and responsibilities as a member of the Exchange; (y) this Agreement does not in any way alter the procedures or standards generally applicable to disciplinary or other actions taken by the Exchange to enforce compliance with, or impose sanctions for violations of, the Exchange Requirements; and (z) the nonpayment of amounts due under this Agreement could result in the suspension or cancellation of Extranet's Exchange membership in accordance with the Exchange Requirements.

9. Force Majeure

Other than with respect to failure to make payments due, neither party shall be liable under this Agreement for delays, failures to perform, damages, losses or destruction, or malfunction of any equipment, or any consequences thereof, caused or occasioned by, or due to fire, earthquake, flood, water, the elements, labor disputes or shortages, utility curtailments, power failures, explosions, civil disturbances, government actions, shortages of equipment or supplies, unavailability of transportation, acts or omissions of third parties, or any other cause beyond its reasonable control.

10. Confidentiality

(a) The Extranet acknowledges that the Information, the Exchange systems and networks, the Exchange's equipment and any parts thereof, and other information, both oral and written, that helps meet a regulatory purpose or business need that the Extranet's employees, officers, directors, independent consultants, (sub)contractors, and other agents (collectively, "Extranet Personnel") are provided by or through the Exchange pursuant to this Agreement are trade secrets, proprietary and unique to the Exchange ("Exchange Confidential Information"), and that copyright and patent rights of the Exchange may also exist. The Extranet, on behalf of itself and the Extranet Personnel agrees to keep confidential such Exchange Confidential Information. The Extranet further agrees to take or cause to be taken all reasonably necessary precautions to maintain the secrecy and confidentiality of such Exchange Confidential Information, and shall not disclose the same to any other third party. Upon termination of this Agreement the Extranet shall destroy or return Exchange Confidential Information to the Exchange in any tangible form whatsoever and all copies thereof.

(b) Except to the extent otherwise set forth in this Agreement, the Exchange shall keep confidential the Extranet's audited records, reports and payments and the audit findings ("Extranet Confidential Information"). The Exchange agrees to take or cause to be taken all reasonably necessary precautions to maintain the secrecy and confidentiality of such Extranet Confidential Information.

(c) Each party shall exercise the same degree of care in the protection of the confidential information as the receiving party exercises with respect to its own proprietary property and trade secrets, but in no event shall it be less than a reasonable degree of care given the nature of the confidential information. The Exchange or the Extranet may disclose confidential information: (i) to the extent demanded by a court; (ii) to the extent revealed to a government agency with regulatory jurisdiction over the Exchange or over the Extranet; (iii) in the course of fulfilling any of the Exchange's regulatory responsibilities, including responsibilities over members and associated persons under the Act; or (iv) to their and the Exchange's employees, directors, independent contractors, (sub)contracts, and other agents solely for uses consistent with the purposes of this Agreement. Notwithstanding anything otherwise set forth in this Agreement, nothing herein shall prevent the Exchange (i) from using the audit findings without restriction to the extent the findings are used in the aggregate with other information and such aggregation does not specifically identify the Extranet; or (ii) from disclosing without restriction the Extranet Confidential Information to the Exchange's telecommunications network provider/operator on a need to know basis. The duties in this section do not apply to data, information or techniques: (1) that is lawfully within a party's possession prior to the date of the Agreement and not under a duty of non-disclosure; (2) that is voluntarily disclosed to a party by a third-party so long as a party does not know that the third-party has breached any obligation not to reveal such data, information or techniques; (3) information that is developed by a party independently of the disclosure; or (4) is generally known or revealed to the public.

11. No Lease

This Agreement is a services agreement and is not intended to and will not constitute a lease of or tenancy or other interest in any Exchange premises, Exchange equipment, CPE, or any other real or personal property.

12. Limitation of Liability

(a) Except as may be otherwise specifically set forth herein, the Extranet and the Exchange agree that the Exchange Parties (as defined below) shall not be liable to the Extranet or to any third party for any loss of profits (anticipated or otherwise), loss of use, trading loss, loss by reason of shutdown in operation or for increased expenses of operation, or any other damages suffered, or cost and expenses incurred by the Extranet or any third party, of any nature, or from any cause whatsoever, whether direct, indirect, special, punitive, incidental, or consequential, arising out of the furnishing, performance, maintenance, or use of; or inability to use, the Information, Connection and any other services and materials furnished by or on behalf of the Exchange or the Exchange's service providers, notwithstanding that the Exchange has been advised of the possibility that damages may or will arise.

(b) THE CONNECTION, THE OTHER MATERIALS OR SERVICES FURNISHED BY OR ON BEHALF OF THE EXCHANGE ARE PROVIDED "AS IS", WITHOUT WARRANTIES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE CONNECTION, AND ANY OTHER MATERIALS OR SERVICES FURNISHED BY OR ON BEHALF OF THE EXCHANGE IS WITH THE EXTRANET. THE EXCHANGE MAKES NO REPRESENTATION OR WARRANTY THAT THE CONNECTION AND OTHER MATERIALS OR SERVICES FURNISHED BY OR ON BEHALF OF THE EXCHANGE WILL MEET THE EXTRANET'S REQUIREMENTS, BE ERROR FREE, OR OPERATE WITHOUT INTERRUPTION OR FAILURE, AND THE EXCHANGE EXPRESSLY DISCLAIMS ALL WARRANTIES OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY (INCLUDING WHITEOUT LIMITATION, USE, TIMELINESS, SEQUENCE, COMPLETENESS, ACCURACY, FREEDOM FROM INTERRUPTION, AND ANY IMPLIED WARRANTIES ARISING FROM TRADE USAGE, COURSE OF DEALING, OR COURSE OF PERFORMANCE).

(c) The Extranet and the Exchange understand and agree that the pricing for the Connection reasonably reflects the allocation of risk and limitation of liability set forth in this Agreement.

(d) In no event shall any claim, dispute, controversy or other matter in question be made against the Exchange by the Extranet or any individual or entity claiming by or through the Extranet later than one year after the claim, dispute, controversy, and other matter in question has arisen.

13. Indemnification

(a) Extranet will indemnify, defend and hold the Exchange, and its members, directors, officers, employees and agents harmless from and against any and all claims arising out of or in connection with this Agreement, including, without limitation, any liability, loss or damages (including, without limitation, attorneys' fees and other expenses) caused by any inaccuracy in or omission from, Extranet's failure to furnish or to keep, or Extranet's delay in furnishing or keeping, any report or record required to be kept by Extranet hereunder.

(b) The Exchange will indemnify, defend and hold Extranet and its directors, officers, employees and agents harmless from and against any and all claims against Extranet that the Connection and any other services and materials furnished by or on behalf of the Exchange infringes the intellectual property rights or violates any property right of a third party provided that Extranet (i) provides the Exchange with prompt written notice of such claim, (ii) agrees that the Exchange shall have sole control of defense and/or settlement of such claim, and (iii) reasonably cooperates with the Exchange in the defense of such claim.

14. Notices

All notices and other communications (except for invoices) required hereunder to be in writing shall be deemed to have been duly given, (i) upon actual receipt (or date of first refusal), if and when delivered by hand, or (ii) upon constructive receipt, as of the date of receipt (or date of first refusal), when sent by overnight carrier, returned receipt requested, to the address of the Extranet or the Exchange as applicable, as set forth below, or, for the Extranet, to such other person or address as the Extranet shall furnish, or (iii) upon posting the notice or communication on www.MIAXOptions.com or a successor site.

All communications required to be given in writing under this Agreement shall be directed to:

(a) If to Extranet

Name:

Title:

Address:

Phone:

Fax:

Email:

(b) If to the Exchange

Miami International Securities Exchange, LLC, MIAX Pearl, LLC and/or MIAX Emerald, LLC

7 Roszel Road, Suite 1A
Princeton, New Jersey 08540

Phone: 609-897-7302

Fax: 609-897-2201

Attn: John Cunningham, Member Services

Email: jcunningham@MIAXOptions.com;

TradingOperations@MIAXOptions.com

If an email address is provided, the Exchange may, in lieu of the above, give notice to or communicate with the Extranet by email addressed to the persons identified above or to such other email address or persons as Extranet shall hereafter specifies. By providing an email address, the Extranet agrees that any receipt received by the Exchange from the Extranet's service provider or internet computer server indicating that the email was received shall be deemed proof that the Extranet received the message. If the Extranet's recipient cannot see or printout all or any portion of the messages or notices, the Extranet must contact the Exchange at (609) 897-7302.

15. Governing Law

Any action arising out of this Agreement between the Exchange and Extranet shall be governed and construed in accordance with the internal laws (and not the law of conflicts) of the State of New York. Extranet may not assign all or any part of this Agreement without the prior written consent of the Exchange. In the event of any conflict between the terms and conditions of this Agreement and any other agreement relating to Extranet's receipt and use of Information, the terms and conditions of this Agreement will prevail. If, for any reason, one or more provisions of this Agreement is held invalid, the other provisions of the Agreement shall remain in full force and effect.

16. Survival

Section 2 (Fees), Section 3 (Use of Connection), Section 4 (Monthly Reporting), Section 5 (Customers; Audit), Section 6 (Term of Agreement), Section 10 (Confidentiality), Section 12 (Limitation of Liability), Section 13 (Indemnification), any warranties and any other provisions which by their nature are intended to survive shall survive.

17. Counterparts

This Agreement may be executed in one or more counterparts, which shall each be considered an original, but all of which together shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the Effective Date.

EXTRANET

**Miami International
Securities Exchange, LLC**

By:

By:

Name:

Name:

Title:

Title:

must be officer

Name of Firm:

Date:

Date:

MIAX Pearl, LLC (and/or MIAX Pearl Equities)

MIAX Emerald, LLC

By:

By:

Name:

Name:

Title:

Title:

Date:

Date:

ABN AMRO CLEARING USA LLC

175 West Jackson Blvd., Ste. 2050
 Chicago IL 60604
 Tele #: (312) 604-8000

Approval Date: 2/6/2017
Membership Activities:
 Clearance
 International Tele #

SEC #: 8-34354
 CRD #: 14020

AKUNA SECURITIES LLC

333 S. Wabash Avenue, Suite 2600
 Chicago IL 60604
 Tele #: (312) 994-4640

Approval Date: 4/17/2017
Membership Activities:
 Registered Market Maker
 International Tele #

SEC #: 8-68957
 CRD #: 159041

APEX CLEARING CORPORATION

One Dallas Center
 350 N. St. Paul, Suite 1300
 Dallas TX 75201
 Tele #: (214) 765-1100

Approval Date: 2/6/2017
Membership Activities:
 Clearance
 International Tele #

SEC #: 8-23522
 CRD #: 13071

BARCLAYS CAPITAL INC.

745 Seventh Avenue
 New York NY 10019
 Tele #: (212) 526-7000

Approval Date: 2/6/2017
Membership Activities:
 Order Entry & Clearance
 International Tele #

SEC #: 8-41342
 CRD #: 19714

BELVEDERE TRADING LLC

10 S. Riverside Plaza, Suite 2100
 Chicago IL 60606
 Tele #: (312) 893-3750

Approval Date: 9/1/2022
Membership Activities:
 Registered Market Maker
 International Tele #

SEC #: 8-66612
 CRD #: 132605

BOFA SECURITIES, INC.

One Bryant Park
 New York NY 10036
 Tele #: (646) 743-2734

Approval Date: 11/1/2018
Membership Activities:
 Order Entry & Clearance
 International Tele #

SEC #: 8-69787
 CRD #: 283942

CITADEL SECURITIES LLC

131 South Dearborn Street - 32nd Floor
 Chicago IL 60603
 Tele #: (312) 395-2100

Approval Date: 2/6/2017
Membership Activities:
 Registered Market Maker & Order Entry
 International Tele #

SEC #: 8-53574
 CRD #: 116797

CITIGROUP GLOBAL MARKETS INC.

Tower Building
 388 Greenwich Street
 New York NY 10013
 Tele #: (212) 816-6000

Approval Date: 5/1/2019
Membership Activities:
 Order Entry & Clearance
 International Tele #

SEC #: 8-8177
 CRD #: 7059

CREDIT SUISSE SECURITIES (USA) LLC

11 Madison Avenue - 24th Floor
 New York NY 10010
 Tele #: (212) 325-2000

Approval Date: 2/6/2017
Membership Activities:
 Order Entry & Clearance
 International Tele #

SEC #: 8-00422
 CRD #: 816

DASH FINANCIAL TECHNOLOGIES LLC

200 S. Wacker Drive, Ste. 2450

Chicago IL 60606

Tele #: (312) 986-2006

Approval Date: 2/6/2017

SEC #: 8- 52503

Membership Activities:

CRD #: 104031

Order Entry & Clearance

International Tele #

DRW SECURITIES, L.L.C.

540 West Madison, Ste. 2500

Chicago IL 60661

Tele #: (312) 542-1000

Approval Date: 11/14/2017

SEC #: 8- 51241

Membership Activities:

CRD #: 45908

Market Maker

International Tele #

GLOBAL EXECUTION BROKERS, LP

401 City Avenue, Ste. 200

Bala Cynwyd PA 19004

Tele #: (610) 617-2600

Approval Date: 2/6/2017

SEC #: 8- 65878

Membership Activities:

CRD #: 126407

Order Entry

International Tele #

GOLDMAN SACHS & CO. LLC

200 West Street

New York NY 10282

Tele #: (212) 902-1000

Approval Date: 2/6/2017

SEC #: 8- 129

Membership Activities:

CRD #: 361

Order Entry & Clearance

International Tele #

GROUP ONE TRADING LP

425 S. Financial Place - Ste. 3400

Chicago IL 60605

Tele #: (312) 347-8864

Approval Date: 2/6/2017

SEC #: 8- 47762

Membership Activities:

CRD #: 37484

Order Entry

International Tele #

GTS SECURITIES LLC

545 Madison Avenue, 15th Fl.

New York NY 10022

Tele #: (212) 715-2830

Approval Date: 2/25/2020

SEC #: 8- 68126

Membership Activities:

CRD #: 149224

Registered Market Maker & Order Entry

International Tele #

HRT FINANCIAL LP

175 Greenwich Street - 76th Floor

3 World Trade Center

New York NY 10007

Tele #: (212) 293-1444

Approval Date: 4/5/2017

SEC #: 8- 68430

Membership Activities:

CRD #: 152144

Order Entry

International Tele #

IMC-CHICAGO, LLC D/B/A IMC FINANCIAL MARKETS

233 South Wacker Drive, Ste. 4300

Chicago IL 60606

Tele #: (312) 244-3300

Approval Date: 2/6/2017

SEC #: 8- 52600

Membership Activities:

CRD #: 104143

Registered Market Maker

International Tele #

INSTINET, LLC

Worldwide Plaza

309 West 49th Street

New York NY 10019

Tele #: (212) 310-9500

Approval Date: 2/6/2017

SEC #: 8- 23669

Membership Activities:

CRD #: 7897

Order Entry & Clearance

International Tele #

INTERACTIVE BROKERS LLC

One Pickwick Plaza - 2nd Floor
Greenwich CT 06830
Tele #: (203) 618-5710

Approval Date: 2/6/2017

Membership Activities:
Order Entry & Clearance
International Tele #

SEC #: 8- 47257

CRD #: 36418

J.P. MORGAN SECURITIES LLC

383 Madison Avenue
New York NY 10179
Tele #: (212) 272-2000

Approval Date: 2/6/2017

Membership Activities:
Order Entry & Clearance
International Tele #

SEC #: 8- 35008

CRD #: 79

JANE STREET CAPITAL, LLC

250 Vesey Street - 5th Floor
New York NY 10281
Tele #: (646) 759-6000

Approval Date: 4/2/2018

Membership Activities:
Order Entry
International Tele #

SEC #: 8- 52275

CRD #: 103782

JANE STREET OPTIONS, LLC

250 Vesey Street - 5th Floor
New York NY 10281
Tele #: (646) 759-6000

Approval Date: 4/2/2018

Membership Activities:
Order Entry
International Tele #

SEC #: 8- 66813

CRD #: 134159

JEFFERIES LLC

520 Madison Avenue - 11th Floor
New York NY 10022
Tele #: (212) 284-2300

Approval Date: 2/6/2017

Membership Activities:
Order Entry & Clearance
International Tele #

SEC #: 8- 15074

CRD #: 2347

JUMP TRADING, LLC

600 West Chicago Avenue, Ste. 600
Chicago IL 60654
Tele #: (312) 205-8900

Approval Date: 2/11/2019

Membership Activities:
Registered Market Maker
International Tele #

SEC #: 8- 52989

CRD #: 106124

MATRIX EXECUTIONS, LLC

135 S. LaSalle Street, Ste. 3900
Chicago IL 60603
Tele #: (312) 334-8000

Approval Date: 2/6/2017

Membership Activities:
Order Entry
International Tele #

SEC #: 8- 48255

CRD #: 38455

MERRILL LYNCH PROFESSIONAL CLEARING CORP.

One Bryant Park - 6th Floor
NY1-100-06-01
New York NY 10036
Tele #: (646) 743-1295

Approval Date: 2/6/2017

Membership Activities:
Clearance
International Tele #

SEC #: 8- 33359

CRD #: 16139

MORGAN STANLEY & CO. LLC

1585 Broadway
New York NY 10036
Tele #: (212) 761-4000

Approval Date: 2/6/2017

Membership Activities:
Registered Market Maker, Order Entry & Clearance
International Tele #

SEC #: 8- 15869

CRD #: 8209

OPTIVER US LLC

130 E. Randolph Street, Ste. 1300
Chicago IL 60601
Tele #: (312) 821-9500

Approval Date: 2/6/2017

SEC #: 8-66083

Membership Activities:

CRD #: 128030

Registered Market Maker & Order Entry

International Tele #

PERSHING LLC

One Pershing Plaza - 10th Fl.
Jersey City NJ 07399
Tele #: (201) 413-2000

Approval Date: 2/6/2017

SEC #: 8-17574

Membership Activities:

CRD #: 7560

Order Entry & Clearance

International Tele #

RQD* CLEARING, LLC

425 South Financial Place - Suite 910B
Chicago IL 60605
Tele #: (312) 692-5000

Approval Date: 2/6/2017

SEC #: 8-66826

Membership Activities:

CRD #: 134284

Order Entry & Clearance

International Tele #

SIMPLEX TRADING, LLC

230 So. LaSalle St., Ste. 4-100
Chicago IL 60604
Tele #: (312) 360-2440

Approval Date: 2/6/2017

SEC #: 8-68556

Membership Activities:

CRD #: 153585

Registered Market Maker & Order Entry

International Tele #

SUSQUEHANNA INVESTMENT GROUP

401 City Avenue, Ste. 220
Bala Cynwyd PA 19004
Tele #: (610) 617-2600

Approval Date: 3/1/2019

SEC #: 8-37520

Membership Activities:

CRD #: 33875

Registered Market Maker

International Tele #

SUSQUEHANNA SECURITIES, LLC

401 City Avenue, Ste. 220
Bala Cynwyd PA 19004
Tele #: (610) 617-2600

Approval Date: 3/1/2019

SEC #: 8-47034

Membership Activities:

CRD #: 35874

Registered Market Maker

International Tele #

TWO SIGMA SECURITIES, LLC

100 Avenue of the Americas - 2nd Fl.
New York NY 10013
Tele #: (212) 625-5700

Approval Date: 9/12/2017

SEC #: 8-68090

Membership Activities:

CRD #: 148960

Registered Market Maker

International Tele #

UBS SECURITIES LLC

1285 Avenue of the Americas
New York NY 10019
Tele #: (203) 719-3000

Approval Date: 2/6/2017

SEC #: 8-22651

Membership Activities:

CRD #: 7654

Order Entry & Clearance

International Tele #

VIRTU AMERICAS LLC

One Liberty Plaza
165 Broadway
New York NY 10006
Tele #: (800) 544-7508

Approval Date: 10/1/2019

SEC #: 8-68193

Membership Activities:

CRD #: 149823

Registered Market Maker, Order Entry & Clearance

International Tele #

WEDBUSH SECURITIES INC.

1000 Wilshire Boulevard, Suite 900
ATTN: COMPLIANCE
Los Angeles CA 90017
Tele #: (213) 688-8090

Approval Date: 2/6/2017
Membership Activities:
Clearance
International Tele #

SEC #: 8- 12987
CRD #: 877

WELLS FARGO SECURITIES, LLC

550 South Tryon Street - 6th Floor
D1086-060
Charlotte NC 28202
Tele #: (704) 410-1913

Approval Date: 2/6/2017
Membership Activities:
Order Entry & Clearance
International Tele #

SEC #: 8- 65876
CRD #: 126292

WOLVERINE EXECUTION SERVICES, LLC

175 W. Jackson Blvd., Ste. 200
Chicago IL 60604
Tele #: (312) 884-4000

Approval Date: 2/6/2017
Membership Activities:
Order Entry & Clearance
International Tele #

SEC #: 8- 65336
CRD #: 120719

WOLVERINE TRADING, LLC

175 W. Jackson Blvd., Ste. 200
Chicago IL 60604
Tele #: (312) 884-4000

Approval Date: 2/6/2017
Membership Activities:
Registered Market Maker
International Tele #

SEC #: 8- 47484
CRD #: 36848

Total BD Firms 40