

Part II: Activities of the Broker-Dealer Operator and its Affiliates

Item 1: Broker-Dealer Operator Trading Activities on the ATS

- a. Are business units of the Broker-Dealer Operator permitted to enter or direct the entry of orders and trading interest (e.g., quotes, conditional orders, or indications of interest) into the NMS Stock ATS?

☒ Yes ☐ No

If yes, name and describe each type of business unit of the Broker-Dealer Operator that enters or directs the entry of orders and trading interest into the ATS (e.g., NMS Stock ATS, type of trading desks, market maker, sales or client desk) and, for each business unit, provide the applicable MPID and list the capacity of its orders and trading interest (e.g., principal, agency, riskless principal).

The ATS is operated by IntelligentCross, LLC ("IntelligentCross"). IntelligentCross is a broker-dealer registered with the Securities and Exchange Commission ("SEC"). IntelligentCross offers a Smart Order Router ("SOR") that allows clients to send orders FIX-tagged with instructions to access the SOR in routing orders to external trading centers, such as ATSs (including the IntelligentCross ATS), single dealer platforms, exchanges, and other brokers. The SOR will access the ATS through direct market access providers that are also Subscribers to the ATS.

The SOR will have an MPID of INSR. Orders sent to access the ATS through the DMA provider will be agency orders and will have the MPID of the DMA provider.

- b. If yes to Item 1(a), are the services that the NMS Stock ATS offers and provides to the business units required to be identified in Item 1(a) the same for all Subscribers?

☒ Yes ☐ No

If no, explain any differences in response to the applicable Item number in Part III of this form, as required, and list the applicable Item number here. If there are differences that are not applicable to Part III, explain those differences here.

- c. Are there any formal or informal arrangements with any of the business units required to be identified in Item 1(a) to provide orders or trading interest to the NMS Stock ATS (e.g., undertaking to buy or sell continuously, or to meet specified thresholds of trading or quoting activity)?

☐ Yes ☒ No

If yes, identify the business unit and respond to the request in Part III, Item 12 of this form.

- d. Can orders and trading interest in the NMS Stock ATS be routed to a Trading Center operated or controlled by the Broker-Dealer Operator?

☐ Yes ☒ No

If yes, respond to request in Part III, Item 16 of this form.

Item 5: Other Products and Services

- a. Does the Broker-Dealer Operator offer Subscribers any products or services for the purpose of effecting transactions or submitting, disseminating, or displaying orders and trading interest in the NMS Stock ATS (e.g., algorithmic trading products that send orders to the ATS, order management or order execution systems, data feeds regarding orders and trading interest in, or executions occurring on, the ATS)?

☒ Yes ☐ No

If yes, identify the products or services offered, provide a summary of the terms and conditions for use, and list here the applicable Item number in Part III of this form where the use of the product or service is explained. If there is no applicable Item in Part III, explain the use of the product or service with the ATS here.

The ATS offers a market data feed (the "IQX Data Feed") that disseminates all eligible orders that Subscribers submit to ASPEN (as discussed in Part III, Item 7). The IQX Data Feed only displays orders that Subscribers choose to display.

Orders eligible to be displayed are: (1) Limit Orders and (2) Primary Peg Orders. Limit Orders and Primary Peg Orders also may be designated as add liquidity only orders ("ALO Orders"). For more information on the ATS' order types and order type modifiers, please see Part III, Item 7. The ATS will display Limit Orders and Primary Peg Orders at one price variation less aggressive than the price of contra-side interest displayed inside of the ATS or as part of the National Best Bid or Offer ("NBBO") (whichever is lower) where such orders would otherwise lock or cross displayed contra-side interest inside the ATS or as part of the NBBO as determined by the SIP and/or SRO proprietary data feeds.

Orders designated by a Subscriber to interact with other orders in a Hosted Pool, including orders designated to interact first with other orders in a Hosted Pool and then with orders outside the Hosted Pool, are not eligible to be displayed orders.

Subscribers and non-Subscribers can receive the IQX Data Feed ("IQX Data Feed Recipients"). Non-Subscribers that receive the IQX Data Feed include buy-side firms, banks, and National Securities Exchanges. The IQX Data Feed is provided to IQX Data Feed Recipients through Pico. The ATS does not charge IQX Data Feed Recipients for the receipt of the IQX Data Feed. Pico, however, may charge a telecommunications/communications fee to receive the IQX Data Feed that IQX Data Feed Recipients are responsible for paying. Additional information regarding the IQX Data Feed can be found in response to Part III, Item 15.

IntelligentCross offers a SOR that allows clients to send orders FIX-tagged with instructions to access the SOR in routing orders to external trading centers, such as ATSs (including the IntelligentCross ATS), single dealer platforms, exchanges, and other brokers. The SOR will access the ATS through direct market access providers that are also Subscribers to the ATS.

- b. If yes to Item 5(a), are the terms and conditions of the services or products required to be identified in Item 5(a) the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

- c. Does any Affiliate of the Broker-Dealer Operator offer Subscribers, the Broker-Dealer Operator, or both, any products or services for the purpose of effecting transactions or submitting, disseminating, or displaying orders or trading interest in the NMS Stock ATS?

☐ Yes ☒ No

If yes, identify the products or services offered, provide a summary of the terms and conditions for use, and list here the applicable Item number in Part III of this form where the use of the product or service is explained. If there is no applicable item in Part III, explain the use of the product or service with the ATS here.

- d. If yes to Item 5(c), are the terms and conditions of the services or products required to be identified in Item 5(c) the same for all Subscribers and the Broker-Dealer Operator?

☐ Yes ☐ No

If no, identify and explain any differences.

Item 6: Activities of Service Providers

- a. Does any employee of the Broker-Dealer Operator or its Affiliate that services both the operations of the NMS Stock ATS and any other business unit or any Affiliate of the Broker-Dealer Operator ("shared employee") have access to confidential trading information on the NMS Stock ATS?

☒ Yes ☐ No

If yes, identify the business unit, Affiliate, or both that the shared employee services, and provide a summary of the role and responsibilities of the shared employee at the ATS and the business unit, Affiliate, or both that the shared employee services.

Answer: The parent of IntelligentCross, Imperative Execution Inc. ("Imperative Execution"), is in the business of developing and licensing the technology that underlies the ATS platform operated by IntelligentCross. Imperative Execution licenses the technology underlying the ATS platform to IntelligentCross pursuant to an expense sharing agreement between IntelligentCross and Imperative Execution. Imperative Execution also develops smart order routing and other technology that it licenses to broker-dealers; IntelligentCross does not license such technology.

There are certain employees of Imperative Execution ("Shared Employees") that are IntelligentCross registered persons with FINRA ("Registered Persons"). Such Shared Employees have access to Subscriber Confidential Trading Information (as defined in Part II, Item 7.a), as the only business line of IntelligentCross is that of operating the ATS. Certain Shared Employees of Imperative Execution who are not Registered Persons have access to ~~confidential trading information~~ Confidential Trading Information of the ATS under the supervision of an IntelligentCross Registered Person.

Listed below are the categories of Shared Employees that have access to Subscriber Confidential Trading Information along with their role at Imperative Execution:

- (1) Senior Management/Supervisors – Shared Employees acting in a supervisory or oversight capacity have access to Subscriber ~~confidential trading information~~ Confidential Trading Information relating to the ATS. Certain of these Shared Employees, among other responsibilities, have supervisory responsibilities reasonably designed to ensure that the ATS operates as intended. Certain of these Shared Employees also act in management roles with respect to Imperative Execution and provide strategic oversight of the development and licensing of the routing and other technology that it licenses to broker-dealers.

- (2) Legal/Regulatory/Compliance – Shared Employees in the Legal, Regulatory and Compliance Departments are involved in providing support with respect to regulatory requirements of the businesses of Imperative Execution and IntelligentCross, including the operation of the ATS. These Shared Employees provide such support by, among other functions, responding to regulatory inquiries. In the course of performing such functions and generally providing support to the ATS, these Shared Employees may have access, on an as-needed basis, to Subscriber Confidential Trading Information.
- (3) Production Support/Market Operations – Shared Employees within these groups include developers, systems engineers, and network engineers for Imperative Execution (with respect to the development of routing and other technology) and for IntelligentCross (with respect to support of the ATS). They are responsible for developing, operating, and supporting the coding, systems infrastructure, and network infrastructure that supports the ATS to ensure stability and continued functionality and are also responsible for developing, testing, and implementing additional functionalities for the ATS as needed. Certain of these Shared Employees have access to the real-time production environment for the ATS. As a result and in order to support the operation and infrastructure of ATS, these Shared Employees are able to access Subscriber Confidential Trading Information.
- (4) Quantitative Research – Shared Employees within this group include personnel who provide research and analyze data relating to, and impacting the operation of, the ATS. Certain of these Shared Employees also support Imperative Execution by developing and supporting the products offered by Imperative Execution. In the course of their duties, these Shared Employees may have access to Subscriber Confidential Trading Information.

- b. Does any entity, other than the Broker-Dealer Operator, support the services or functionalities of the NMS Stock ATS ("service provider") that are required to be explained in Part III of this form?

☒ Yes ☐ No

If yes, both identify the service provider and provide a summary of the role and responsibilities of the service provider in response to the applicable Item number in Part III of this form, as required. List the applicable Item number here. If there are services or functionalities that are not applicable to Part III, identify the service provider, the services and functionalities, and also provide a summary of the role and responsibilities of the service provider here.

Answer:

The parent and sole member of IntelligentCross, Imperative Execution, is in the business of developing and licensing the technology that underlies the ATS platform operated by IntelligentCross. Imperative Execution licenses such technology to IntelligentCross pursuant to an expense sharing agreement between IntelligentCross and Imperative Execution.

Pico Quantitative Trading ("Pico") is the ATS's managed co-location and network provider. Pico provides networking services and on-site assistance in the data center where the ATS's equipment is

hosted. Subscribers may connect to Pico in order to establish connectivity with IntelligentCross (or may connect through other network service providers that have a presence in NY4). Further information on Pico is contained in Part III, Item 6.

Additionally, as referenced in Part III, Item 22, IntelligentCross has entered into clearing agreements with Instinet, LLC ("Clearing Firm"), which is a FINRA and NYSE member firm and a member of the National Securities Clearing Corporation, to provide for clearance and settlement of transactions executed on the ATS.

The ATS has contracted with several consultants ("Consultants"), including IntelligentCross' Chief Compliance Officer and Financial and Operations Principal ("FINOP") who are Registered Persons with the Broker-Dealer Operator and not employees of Imperative Execution or IntelligentCross.

Additionally, as referenced in Part III, Item 5, IntelligentCross offers a SOR that allows clients to send orders FIX-tagged with instructions to access the SOR in routing orders to external trading centers, such as ATSs (including the IntelligentCross ATS), single dealer platforms, exchanges, and other brokers. The SOR will access the ATS through direct market access providers that are also Subscribers to the ATS. The direct market access provider is Instinet, LLC.

- c. If yes to Item 6(b), does the service provider, or any of its Affiliates, use the NMS Stock ATS services?

☒ Yes ☐ No

If yes, identify the service provider, or the Affiliate as applicable, and the ATS services that the service provider or its Affiliates use.

Instinet, LLC, is a ~~subscriber~~Subscriber to the ATS and provides clearance and settlement of transactions executed on the ATS.

Instinet, LLC is a Subscriber to the ATS and provides the SOR with market access to the ATS.

- d. If yes to Item 6(c), are the services that the NMS Stock ATS offers and provides to the entity required to be identified in Item 6(c) the same for all Subscribers?

☒ Yes ☐ No

If no, identify and explain any differences.

Item 7: Protection of Confidential Trading Information

- a. Describe the written safeguards and written procedures to protect the confidential trading information of Subscribers to the NMS Stock ATS, including:
- written standards controlling employees of the ATS that trade for employees' accounts; and
 - written oversight procedures to ensure that the safeguards and procedures described above are implemented and followed.

Answer: IntelligentCross has implemented written safeguards and procedures designed to protect the ~~confidential trading information~~ Confidential Trading Information of its Subscribers.

Access to Confidential Trading Information

~~IntelligentCross notes that the operation of the ATS is the sole activity of the broker-dealer and IntelligentCross does not have any other business units. As such, all~~ All Shared Employees and certain Imperative Execution employees are responsible for the operation of the ATS or for the ATS's compliance with Regulation ATS or other applicable rules. In accordance with the provisions of Rule 301(b)(10), a Series 24 registered supervisor of IntelligentCross ensures that the ATS restricts access to Subscriber ~~confidential trading information~~ Confidential Trading Information, which includes Subscribers' real time and historical orders and executions related to the ATS ("Subscriber Confidential Trading Information"), to Shared Employees and certain Imperative Execution employees who are operating the ATS or responsible for its compliance with Regulation ATS or any other applicable rules. Subscriber Confidential Trading Information shall not include information displayed through the IQX Data Feed. Determinations regarding granting access to Subscriber Confidential Trading Information are made on a case-by-case basis. In making such determinations, the ATS considers the function of the Shared Employees, Imperative Execution employees and the Consultants and the type of Subscriber Confidential Trading Information being accessed. Individuals with access to Subscriber Confidential Trading Information are only authorized to use such information for its intended purpose and cannot disseminate or give such information to anyone not authorized to receive that information.

Those individuals responsible for the operation of the ATS have controlled access via unique login credentials to view a Subscriber's orders and trades in the ATS systems. If an order has been made available to IntelligentCross, it resides on the IntelligentCross server, but such data is only accessible by IntelligentCross operations personnel or Imperative Execution personnel as supervised by IntelligentCross Registered Persons. IntelligentCross requires such personnel to understand the authorized uses of such information and requires such personnel to acknowledge, in the form of an attestation, this understanding. Personnel undergo annual compliance training that includes materials related to protecting ~~confidential trading information~~ Confidential Trading Information.

Requests for access to real-time Subscriber Confidential Trading Information must be approved by the CEO/COO of the ATS or their designee. The requests must be for individuals involved in the operation or compliance functions of the ATS. IntelligentCross conducts as needed reviews of the individuals that have access to Subscriber Confidential Trading Information to ensure its continued compliance with Rule 301(b)(10). As part of the review, IntelligentCross confirms that individuals with access to Subscriber Confidential Trading Information continue to have a valid need to access such information.

IntelligentCross and Imperative Execution maintain information barriers to separate employees, consultants, and systems with access to Subscriber Confidential Trading Information of the ATS from those not permitted to access such information. These information barriers serve as controls to protect Subscriber Confidential Trading Information. Shared Employees and consultants receive periodic training and periodic guidance regarding the proper use of Subscriber Confidential Trading

Information and that Subscriber Confidential Trading Information may only be used with respect to the support and operation of the ATS.

IntelligentCross protects against unauthorized access to or use of Subscriber Confidential Trading Information by use of a password system. Login credentials and passwords are required to gain access to systems containing Subscriber Confidential Trading Information. Passwords are required to be changed periodically and are disabled for terminated individuals or those no longer requiring access. The ATS does not maintain physical separation barriers.

With respect to the ATS's service provider Pico, Pico employs a dedicated, segregated management environment to provide secure access for management of customer and customer facing systems. The environment is protected via a defense in-depth strategy, utilizing a combination of firewalls, network access controls, intrusion detection systems and 2-factor authentication. Customer systems and networks utilize access control lists enforcing the appropriate segmentation and prevention of unauthorized access or data exfiltration. Controls and their effectiveness are actively monitored by a dedicated information security group utilizing a Security Information Event Management system (SIEM), ensuring deviations or anomalies are detected, alerted and reported in a timely manner.

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With respect to Instinet, the ATS's clearing provider, it is a broker dealer that is subject to the various rules and requirements that broker-dealers adhere to as part of their day-to-day operations. IntelligentCross has an agreement with Instinet that contains standard confidentiality provisions that further protect Subscriber Confidential Trading Information from potential misuse.

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IntelligentCross is required to report transactions executed in the IntelligentCross ATS to the consolidated tape via a FINRA Trade Reporting Facility (TRF).

IntelligentCross offers a SOR that allows clients to send orders FIX-tagged with instructions to access the SOR in routing orders to external trading centers, such as ATSs (including the IntelligentCross ATS), single dealer platforms, exchanges, and other brokers. The SOR will access the ATS through direct market access providers that are also Subscribers to the ATS.

Three types of order and trading information are used in connection with the SOR:

- 1) In order to route orders, the SOR has access to and uses the order detail found in the FIX message sent to IntelligentCross. For example, the SOR uses the price or effective price on an order to determine the order's marketability. The SOR can then use the order's marketability to determine the routing logic for that order.
- 2) Execution data specific to the order being executed can be used by the SOR when an order remains live and partially executed. For example, the SOR can reroute unexecuted shares resting at one venue to another venue based on partial execution data specific to that order. This includes execution data from both IntelligentCross ATS and external trading centers.

3) As part of its smart order routing functionality, the SOR is equipped with a machine learning-based process to optimize order routing decisions based on aggregated information about historical routing and execution results involving orders with similar characteristics that have been previously routed. The SOR has the same access to information regarding live orders on the IntelligentCross ATS as is available to all Subscribers, such as that via the IQX market data feed.

Employees are not authorized to use Confidential Trading Information for purposes of operating the SOR.

Before utilizing a DMA provider and on an annual basis thereafter, IntelligentCross requests and reviews the policies and procedures that the DMA provider has in place to ensure the protection of Confidential Trading Information. Instinet has written policies and procedures reasonably designed to safeguard Confidential Trading Information. Instinet's employees' access to Confidential Trading Information is dependent upon the level of information that is needed to perform their duties and responsibilities related to providing direct market access ("need to know standard"). Instinet's employees are strictly prohibited from using such information in an unauthorized manner and from discussing the details of any Confidential Trading Information with persons who do not need such information to carry out their designated duties and responsibilities. Access to such information is granted as needed to perform these duties and responsibilities (i.e., real-time or delayed, isolated, periodic, or continuous). Access to Confidential Trading Information is controlled through permission configurations that provide application access only to entitled users (i.e., users who require access to information to carry out designated duties and responsibilities). Access entitlements are approved by designated supervisors and documented, tracked and monitored. Designated supervisors attest periodically, via an electronic system, that procedures reasonably designed to safeguard and protect Confidential Trading Information were followed. Such procedures include reviews of organizational structure including any new or transferred employees as well as reviews of any personal account trades and any related firm/divisional policy violations. On an annual basis, Instinet's employees (including those with duties and responsibilities related to providing DMA access) participate in compliance training that addresses information protection and client confidentiality. Additionally, on a firm-wide basis, Instinet continuously monitors electronic communications to identify potential policy violations.

Personal Securities Transactions

IntelligentCross policies and procedures require pre-approval of personal securities transactions by Registered Persons of the ATS and require a 30-day holding period.

The policies and procedures cover all securities transactions in outside brokerage accounts directed by employees, including but not limited to transactions in securities issued by a company (e.g. stocks, bonds), transactions in any reference securities (e.g. options, preferred stock, futures), and transactions in any packaged products including but not limited to mutual funds and exchange traded funds.

Registered Persons are not permitted to day trade in any securities. They must submit a request in writing or via email to the CCO and CEO prior to each personal securities transaction and must obtain approval from either the CCO or CEO prior to effecting a personal securities transaction.

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Associated Persons must submit a form or standard email request to the CCO and CEO that identifies:

Security Name & Symbol

Purchase or Sale

Quantity

For Sales: Compliance with 30 Day Holding Period

Compliance personnel conduct periodic reviews of individuals brokerage accounts to ensure compliance with IntelligentCross policies and procedures regarding personal securities transactions.

- b. Can a Subscriber consent to the disclosure of its confidential trading information to any Person (not including those employees of the NMS Stock ATS who are operating the system or responsible for its compliance with applicable rules)?

☐ Yes ☒ No

If yes, explain how and under what conditions.

- c. If yes to Item 7(b), can a Subscriber withdraw consent to the disclosure of its confidential trading information to any Person (not including those employees of the NMS Stock ATS who are operating the system or responsible for its compliance with applicable rules)?

☐ Yes ☐ No

If yes, explain how and under what conditions.

- d. Provide a summary of the roles and responsibilities of any Persons that have access to confidential trading information, the confidential trading information that is accessible by them, and the basis for the access.

The Shared Employees, certain Imperative Execution employees, the CCO, and the FINOP, and employees at Pico and Instinet have access to Subscriber Confidential Trading Information. Generally, Shared Employees and Imperative Execution employees have access to both real-time and historical order and trade information; however, certain individuals may be provided access to only historical order and trade information given their job function. Shared Employees and Imperative Execution employees have access to Subscriber Confidential Trading Information to ensure proper operations and maintenance of the ATS. As a network provider, Pico will have access to ~~confidential information~~ Confidential Trading Information because they monitor IntelligentCross' network and host IntelligentCross' equipment. As IntelligentCross' clearing service provider, Instinet will have access to Subscriber execution information but not order information. Instinet will have access to Confidential Trading Information because it acts as a DMA provider for the SOR, as described in Item 7(a).

Part III: Manner of Operations

Item 5: Means of Entry

- a. Does the NMS Stock ATS permit orders and trading interest to be entered directly into the ATS (e.g., via Financial Information exchange ("FIX") protocol, Binary)?

☒ Yes ☐ No

If yes, explain the protocol that can be used to directly enter orders and trading interest into the ATS.

Answer:

General Operation of the ATS

Subscribers access the ATS via a Financial Information Exchange ("FIX") connection. Such access is available to Subscribers through an internet protocol address via communications that are compliant with the FIX API provided by the ATS. The ATS currently supports FIX 4.2.

The ATS does not accept orders via any other forms of communication (e.g., telephone, email, instant message).

Required Fields

Subscribers must communicate the following information to the ATS upon order entry through FIX:

Message Type

Client Order ID (unique identifier for order per session)

Execution Instructions

Subscriber Order Capacity (Agent, Principal, Riskless)

Symbol

Side (Buy, Sell, Sell Short, Sell Short Exempt)

Display

Price Instructions

Time in Force

Time of Order Creation (expressed in UTC)

Order Type

Order Quantity

ClientID (used for identifying the client (MPID))

Handling Instruction (ATS supports automated execution and does not provide broker intervention)

Hosted Pool Tag (if applicable)

Order Parameters

Minimum Quantity - Subscribers may submit orders with a MinQty for execution. Subscribers may set MinQty to permit the aggregation of contra-side interest to meet the minimum quantity requirements.

Maximum Quantity – Subscribers may submit orders with a MaxQty for execution. MaxQty is for Midpoint Peg Orders only.

The ATS's FIX Specification is available to Subscribers upon request.

- b. If yes to Item 5(a), are the protocols required to be identified in Item 5(a) the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

- c. Are there any other means for entering orders and trading interest into the NMS Stock ATS (e.g., smart order router, algorithm, order management system, sales desk)?

☒ Yes ☐ No

If yes, identify and explain the other means for entering orders and trading interest, indicate whether the means are provided through the Broker-Dealer Operator, either by itself or through a third-party contracting with the Broker-Dealer Operator, or through an Affiliate of the Broker-Dealer Operator, and list and provide a summary of the terms and conditions for entering orders or trading interest into the ATS through these means.

IntelligentCross offers a SOR to only persons that subscribe to the ATS that allows clients of IntelligentCross to send orders FIX-tagged with instructions to access the SOR in routing orders to external trading centers, such as ATSs (including the IntelligentCross ATS), single dealer platforms, exchanges, and other brokers. Access to the SOR is via a FIX connection separate from the FIX connection to the ATS. The SOR will access the ATS through direct market access providers that are also Subscribers to the ATS. The direct market access providers enter orders pursuant to Part III, Item 5.a. Orders that the SOR sends to the ATS via the direct market access provider to be routed to the ATS are directed orders and cannot be routed to any other venue.

- d. If yes to Item 5(c), are the terms and conditions required to be identified in Item 5(c) the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

Item 11: Trading Services, Facilities and Rules

- a. Provide a summary of the structure of the NMS Stock ATS marketplace (e.g., crossing system, auction market, limit order matching book) and explain the means and facilities for bringing together the orders of multiple buyers and sellers on the NMS Stock ATS.

Answer:

The ATS operates two different matching models: (1) a Midpoint book ("Midpoint") that only accepts non-displayed midpoint orders and executes orders at the midpoint of the prevailing NBBO at the time of the Match Event, and (2) ASPEN (or the "Adverse Selection Protection Engine"), three limit order books with optional displayed capability (i.e., orders in ASPEN may be marked by

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Subscribers as either displayed or non-displayed) which execute orders at prices that are at or between the prevailing NBBO at the time of the Match Event. Subscribers choose which matching model to which they send their orders. While the matching models operate under the same "market participant identifier" (or "MPID") – INCR – each matching model is distinct and does not interact with the other matching model.

The ASPEN matching model has three distinct books distinguished by different fee structures – ASPEN Fee/Fee, ASPEN Maker/Taker and ASPEN Taker/Maker. All three books act independent of each other; orders resting in one book do not rest on or interact with orders resting in another book. All three ASPEN books also operate with different MIC codes: ASPEN Fee/Fee - ASPN; ASPEN Maker/Taker - ASMT; and ASPEN Taker/Maker - ASPI.

The Midpoint book only accepts Midpoint Peg Orders, which are not accepted in any of the ASPEN books; orders in the Midpoint book will therefore not be displayed. Any orders entered into IntelligentCross through any other order type (*e.g.*, Market Order, Limit Order, Primary Peg Order (with or without a limit price), and Marketable Peg Order (with or without a limit price)) will default to the ASPEN Fee/Fee book. A subscriber who wishes to trade in the ASPEN Maker/Taker or Taker/Maker books must affirmatively identify those books when entering their order. Subscribers can route to the different ASPEN books by utilizing FIX tags to specify which ASPEN book to send their order to, and can also request dedicated sessions to specific books.

- b. Are the means and facilities required to be identified in Item 11(a) the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

- c. Explain the established, non-discretionary rules and procedures of the NMS Stock ATS, including order interaction rules for the priority, pricing methodologies, allocation, matching, and execution of orders and trading interest, and other procedures governing trading, such as price improvement functionality, price protection mechanisms, short sales, locked-crossed markets, the handling of execution errors, and the time-stamping of orders and executions.

Answer:

The ATS accepts orders in all NMS Stocks eligible for trading (*e.g.*, those that are not subject to a trading halt) and uses a matching mechanism which is near-continuous and that matches orders at scheduled times ("Match Events"). The ATS' two different matching models – Midpoint and ASPEN - contain the following characteristics (any differences between the matching models will be noted accordingly).

Determination of Matching Schedule

Matching schedules are calculated using an **overnight**-optimization process that uses, among other things, historical performance measurements (as discussed below) from prior days' and/or current days' (in the case of Midpoint) matches. Each security has an individualized matching schedule, computed to maximize price stability after trades. The optimization process is data driven and takes into account stock by stock volatility, spreads, daily trading volume, price stability after trades and

other market factors characteristic of how the specific stock recently traded in the market and on the IntelligentCross platform.

For ASPEN, matching schedules are calculated using an overnight optimization process that uses historical performance measurements from prior days' matches. Each day starts with a prepared matching schedule for each security that does not change throughout the day.

For Midpoint, the matching schedule for a security may change overnight, or during the trading day if the ATS's machine-learning process determines that such change is appropriate to maximize price stability after trades. For Midpoint, while the matching schedule for a security may change during the trading day, the model governing the optimization process does not change throughout the trading day. The optimization process takes into account publicly available market data such as prior SIP trades and NBBO quotes. There is no human intervention or discretion involved in any change to the matching schedule during the trading day, and any such change does not alter any conditions (including price) of any orders nor is it aware of or responsive to any customer specific information.

Match Events in each security occur at scheduled times as determined by the ATS' matching algorithm ~~that does not change throughout the day~~. Match schedules are defined by "minimum/maximum time bands" for each security ("Match Event Intervals"). Midpoint has Match Event Intervals between 150 microseconds and up to 200 milliseconds that are calibrated on a security-by-security basis. ASPEN's Match Event Intervals can have a minimum time of 150 microseconds and a maximum time of 900 microseconds (*i.e.*, the maximum time for scheduling a match event is capped at 900 microseconds), also calibrated on a security-by-security basis. For example, on a particular day, the match event band for XYZ stock may have a minimum time of 450 microseconds and a maximum time of 600 microseconds. The actual match event time is randomized within the match event band throughout the course of the trading day.

Execution of Orders and Match Events

Any order for a security that arrives prior to a Match Event for that security (and that has not been canceled, has become unmarketable, or has been repriced prior to the match event) will be eligible to participate in the next Match Event. Match Events are scheduled continuously while the book is in a "matchable state" (*i.e.*, there is an order on each side eligible to match); if there are no orders for a stock in the book, no Match Event will be scheduled. An incoming order that will make the book potentially matchable will trigger a scheduling of a Match Event if one has not already been scheduled.

The matching process is completely symmetric, *i.e.*, the match times within IntelligentCross are not chosen to favor a particular side of the trade. No ~~subscribers~~Subscribers (or non-~~subscribers~~Subscribers accessing IntelligentCross through a ~~subscriber~~Subscriber) are given any type of priority through the matching process, and the matching process is blind to the identity of the ~~subscriber~~Subscriber (or a non-~~subscriber~~Subscriber accessing IntelligentCross through a ~~subscriber~~Subscriber). Both sides of the trade (buyers and sellers) are on equal footing for the next scheduled match, while maintaining full control of their orders - both sides can cancel or update their orders at any time prior to the match.

Open orders may be amended to the extent the amendment is received before a match event involving that order occurs. Order amendments are processed in the order in which they are received by the ATS. The match priority of an order will be preserved when amending the quantity of an order to a value less than the existing quantity of the order; however, the match priority of an order will be lost when amending the quantity of an order to a value greater than the existing quantity or when amending any other value in addition to the quantity of the order.

An open order also may be canceled to the extent the cancellation order is received before a match event involving that order occurs. The ATS will automatically update its quotations, and all quotation updates, including those due to new or canceled orders, are immediate.

Midpoint Match Event Process and Match Event Intervals

At each Match Event for each security in Midpoint, the matching engine for the Midpoint book will retrieve the current NBBO and check its book for orders that can be matched. Orders eligible for matching will be matched in time priority at the NBBO midpoint price at the Match Event. The purpose of the scheduled matches is to achieve two objectives: (1) provide for as many matches as possible to maximize liquidity; and (2) keep the NBBO as stable as possible for a period of time after executions occur on the ATS. During the time between Match Events, Subscribers have full order control and can cancel or reprice orders until the next Match Event.

The ATS then analyzes the executions that occur on the ATS, including in Hosted Pools, and adjusts the Match Event Interval to achieve the two objectives described above. ~~Other factors that contribute to determining the Match Event Interval include time of day, volume~~ The optimization process takes into account publicly available market data such as prior SIP trades and NBBO quotes. The optimization process is data driven and takes into account stock by stock volatility in the security, average spread, trade size, spreads, daily trading volume, price stability after trades and other market factors—characteristic of how the specific stock recently traded in the market and on the IntelligentCross platform.

The Match Event Intervals per security are adjusted ~~overnight~~ after enough data points have been accumulated to warrant an adjustment.

Below is an example of how the Midpoint matching process works using Match Event Intervals. The assumptions include:

- Security XYZ has a Match Event Interval between 7 to 12 milliseconds.
- The next Match Event is scheduled at 10:01:04:003.
- Subscriber A has submitted a 500 share buy order with a limit price of \$25.06 and TIF of Day for Security XYZ.
- Subscriber B has submitted a 200 share buy order with a limit price of \$25.07 and TIF of Day for Security XYZ (this order was received after Subscriber A's order so Subscriber A has priority over Subscriber B).

- Subscriber C submits a 600 share sell order with no limit price and a TIF of Day for Security XYZ.

At the next scheduled Match Event for Security XYZ, (10:01:04:003), the matching engine retrieves the NBBO and determines that the NBBO is \$25.05 by \$25.07. The Midpoint price at the time of the Match Event is \$25.06 and is the matching price. As a result, the following executions occur during the Match Event at 10:01:04:003.

Subscriber A will match 500 shares with Subscriber C at \$25.06.

Subscriber B will match 100 shares with Subscriber C at \$25.06.

Subscriber A's 500 share order has been fully filled.

Subscriber B received a fill of 100 shares and has 100 shares remaining that will be eligible for the next Match Event.

Subscriber C's 600 share order has been fully filled.

The next Match Event will be at a time between 10:01:04:010 and 10:01:04:015 because the last match event was at 10:01:04:003 and the Match Event Intervals are between 7 and 12 milliseconds apart. This process will continue throughout the trading day.

The ATS makes an overnight determination as to whether the Match Event Intervals for each security should be increased, decreased, or stay the same, ~~and~~. The Match Event Intervals for Midpoint may be recalibrated throughout the day. Registered Persons of the ATS review and approve such changes.

In the example described above, the Match Event Intervals could increase, stay the same, or decrease.

ASPEN Match Event Process and Match Event Intervals

ASPEN will have Match Event Intervals between 150 and 900 microseconds that are calibrated on a security-by-security basis. The matching process and process for determining the Match Event Intervals for ASPEN is similar to that for Midpoint but Match Event Intervals are calibrated separately such that, for any given security, the Match Event Intervals for ASPEN will be different from the Match Event Intervals for Midpoint. The Match Event Intervals for the three ASPEN books will be the same for a given security.

Below is an example of how the ASPEN matching process works using Match Event Intervals. The assumptions include:

- Security XYZ has a Match Event Interval between 175 to 200 microseconds.
- The next Match Event is scheduled at 10:01:04:003:005.

- Subscriber A has submitted a 500 share buy limit order with a limit price of \$25.06 and TIF of Day for Security XYZ.
- Subscriber B has submitted a 200 share buy limit order with a limit price of \$25.07 and TIF of Day for Security XYZ.
- Subscriber C submits a 600 share sell market order with no limit price and TIF of Day for Security XYZ.

At the next scheduled Match Event for Security XYZ (10:01:04:003:005), the matching engine retrieves the NBBO and determines that the NBBO is \$25.05 by \$25.07. As a result, the following executions occur during the Match Event at 10:01:04:003:005:

Subscriber B will match 200 shares with Subscriber C at \$25.07.

Subscriber A will match 400 shares with Subscriber C at \$25.06.

Subscriber B's 200 share order has been fully filled.

Subscriber A received a fill of 400 shares and has 100 shares remaining that will be eligible for the next Match Event.

Subscriber C's 600 share order has been fully filled at prices of \$25.06 and \$25.07.

The next Match Event will be at a time between 10:01:04:003:180 and 10:01:04:003:205 because the last match event was at 10:01:04:003:005 and the Match Event Intervals are between 175 and 200 microseconds apart. This process will continue throughout the trading day.

The ATS makes a daily determination as to whether the Match Event Intervals for each security should be increased, decreased, or stay the same. In the example described above the Match Event Intervals could increase, stay the same, or decrease.

Midpoint Minimum Resting Period

For Midpoint, only orders that have rested on the order book for a minimum period of time are eligible to match. "Minimum Resting Periods" are determined by the ATS and set in a stock-specific fashion, similar to Match Events. The purpose of these periods is to further reduce adverse selection. However, in no event will the minimum resting period exceed 200 milliseconds. There are no Minimum Resting Periods for orders on ASPEN.

Anti-Internalization

The ATS provides an "anti-internalization" setting to its Subscribers. This setting can be enabled upon client request and will prevent the self-matching of two orders from the same Subscriber on the ATS's order books. This setting will not be enabled by default, but can be enabled upon Subscriber request and will be enforced by the Client ID setting. Subscribers can either contact

IntelligentCross Trading Operations to enable this functionality on an MPID basis or they can configure the trading systems to prevent self-crossing at a client or trading desk level.

Locked or Crossed Market

The ATS will not match if the NBBO as determined by the SIP and/or SRO proprietary data feeds for the stock is crossed (where the NBB price exceeds the NBO price) or if the NBBO as determined by the SIP and/or other SRO proprietary data feeds is locked (where the NBB price equals the NBO price). In ASPEN, if a displayed Limit Order or Primary Peg Order would lock or cross displayed contra-side interest inside the ATS or the NBBO, such order will be displayed one minimum price variation less aggressive than the price of the displayed contra-side interest inside the ATS or as part of the NBBO and ranked at the price of displayed contra-side interest inside the ATS or as part of the NBBO. In the event the displayed contra-side interest inside the ATS or the NBBO updates, such order's displayed price will be updated to the most aggressive price permissible without locking displayed contra-side interest inside the ATS or as part of the NBBO, up to the order's limit price, and such order's ranked price will be updated to the most aggressive price permissible without crossing displayed contra-side interest inside the ATS or as part of the NBBO, up to the order's limit price.

Sub-Dollar Pricing

For orders in Midpoint, in the event that the NBB is less than \$1.00, the ATS will execute orders at the midpoint price, regardless of the number of decimal places.

For orders in ASPEN, in the event that the NBB is less than \$1.00, the ATS will execute orders at valid prices within the NBBO.

Orders Eligible for Matching

With respect to the Midpoint book, the following orders will be eligible for matching during a Match Event:

1. Midpoint Peg Orders that are buy orders with limit prices equal to or higher than NBBO midpoint.
2. Midpoint Peg Orders that are sell orders with limit prices equal to or lower than NBBO midpoint.
3. Midpoint Peg Orders without limit prices.

Midpoint Peg Orders also may be designated with Time-in-Force instructions.

With respect to the ASPEN books, the following orders will be eligible for matching during a Match Event:

1. Primary Peg Orders with no limit price or those with limit prices that are within the prevailing NBBO at the time of a Match Event.
2. Market Peg Orders with no limit price or those with limit prices that can execute within the prevailing NBBO at the time of a Match Event.

3. Limit Orders with limit prices that are within the prevailing NBBO at the time of a Match Event.
4. Market Orders.

Match Priority Criteria

Generally, an order's match priority will be based on price, display type (for ASPEN), and the time at which such order is received relative to other orders. With respect to ASPEN, at each price level, displayed orders will have priority over non-displayed orders. All orders will be timestamped and accordingly prioritized based on the time of their receipt by the ATS. Matching instructions are specified in accordance with the FIX protocols described above in Part III, Item 5 and defined by industry standard FIX tags defined for these matching instructions.

Orders received by the ATS during the Pre-Market Order Acceptance Period will be queued until the beginning of Regular Trading Hours and then matched with time priority based on the order receipt by the ATS. Orders received outside these periods will not be accepted. For all eligible securities, the ATS will only execute if Limit-Up-Limit-Down ("LULD") bands are present and the effective price of a potential match is not constrained by a LULD band.

An amendment of an outstanding order will affect its match priority and Minimum Resting Period as follows:

1. If an order's size is decreased, its timestamp will remain the same, its priority will not change and it will not wait through a new Minimum Resting Period (in the case of Midpoint).
2. If an order's size is increased, the timestamp will be renewed, its priority will change and, if part of Midpoint, it will wait through a new Minimum Resting Period.
3. If an order's price is changed, the timestamp will be renewed, its priority will change and, if part of Midpoint, it will wait through a new Minimum Resting Period.

IntelligentCross conducts trading strictly in an agency capacity on the ATS. IntelligentCross does not conduct trading in a proprietary capacity.

Non-Match Events

Situations may occur where an incoming order may not execute against a resting order at match event time, such as when:

- (1) an existing resting order cancels prior to the next match event
- (2) an incoming order is canceled prior to the next match event
- (3) the NBBO moves between the time an order is received and the next match event takes place, making either the incoming order or the resting order non-marketable
- (4) the NBBO changed before the next match event and pegged orders were repriced to the new NBBO, making the incoming order or the resting pegged order non-marketable

Execution Errors

The ATS has written supervisory policies and procedures in place to handle trade execution errors and "clearly erroneous trades." Each potential error situation will be evaluated by the ATS's personnel on a case by-case basis.

If a trade is transacted in error and it is determined that the error was due to a system failure or other issue with the ATS's platform that resulted in a poor execution (*i.e.*, outside the NBBO), the ATS will contact each of the Subscribers associated with the error cross trade and inform them that the ATS is canceling the trade. The ATS will then initiate the cancel on the ATS and communicate either electronically (ACT Web for NASDAQ TRF) or over the telephone (NYSE TRF) the trade report cancellation for each side of the cross trade. In the instances in which the trade was good (*i.e.*, inside the NBBO), and as a result of a systems issue, the ATS failed to acknowledge the execution to one of the two Subscribers associated with the error cross trade transacted on the ATS, the ATS will contact the affected Subscriber and ask whether or not they want to maintain (keep) the trade. If the Subscriber does not want to maintain the trade, the ATS will take the affected Subscriber's position and book it to IntelligentCross' error account. IntelligentCross will then instruct IntelligentCross' clearing broker to trade out of the error position. An IntelligentCross employee will book the error position and subsequently close-out the transaction through IntelligentCross' error account for settlement purposes and document within IntelligentCross' systems all details regarding the error transaction(s). The error transaction detail will include all details surrounding the error trade(s) and subsequent close-out trades (if any). The detail will also include an identification of all associated parties, the cause/reason for the error, or details surrounding Subscriber contact(s). The error trade detail will then be reviewed and electronically signed off as "compliance review" by the CCO or his designee and subsequently reviewed and signed off on as "Supervisory Review" by IntelligentCross' CEO or his/her supervisory principal designee.

The ATS will also ensure accurate CAT reporting.

With respect to a market wide event that may contain clearly erroneous transaction, the ATS monitors all email notification regarding clearly erroneous transactions. Upon receipt of a clearly erroneous e-mail notification, the ATS will immediately review the ATS's trading activity during the relevant timeframe to determine whether or not the ATS traded the securities referenced in the notification. The ATS will then take immediate action (if any executions have been identified through the review) to reverse the trades upon the ATS and NASDAQ's WebLink ACT. A file in IntelligentCross' systems will be created that documents any ACT reversals that have been performed as a result of a clearly erroneous notification.

Order Entry Restrictions

The ATS will not accept orders that reference a symbol not authorized for trading (*e.g.*, if there is a trading halt). The minimum price variation ("MPV") for orders received by the ATS shall be \$0.01 for orders priced \$1.00 or greater, and \$0.0001 for orders priced below \$1.00. Orders received with increments below the MPV will be rejected.

Sell orders must be designated as long, short or short exempt in the event there is a short sale restriction in place. Subscribers are responsible for the compliance of their trades with all short sale locate and delivery rules and regulations.

Anonymity

All orders and executions are anonymous as to and between Subscribers. Subscribers are only made aware of IntelligentCross as a party or contra-party on orders and executions.

The ATS does not provide any means of communication between Subscribers. There is no negotiation, chat, instant message, indication of interest, "Flash Order," or similar functionality provided.

Hosted Pools

At the request of one or more Subscribers, the ATS will setup a Hosted Pool where such Subscriber(s) may designate that an order interact with other orders entered by that same Subscriber or other Subscribers participating in the same Hosted Pool. Unless otherwise stated, the matching and trading rules in a Hosted Pool are the same as in the ATS.

Subscribers may designate an order to interact within a Hosted Pool, as well as to interact with the liquidity outside the Hosted Pool after checking for liquidity in the Hosted Pool. In particular, at each Match Event, the matching engine will, in sequential order, (1) match orders eligible to be matched in Hosted Pools, and then (2) match orders outside the Hosted Pool, including orders designated to interact first in a Hosted Pool and then outside a Hosted Pool.

The ATS's Hosted Pools accept "Conditional Orders." Conditional Orders are not accepted outside of the ATS's Hosted Pools. See Part III, Item 9 for a discussion of Conditional Orders.

- d. Are the established, non-discretionary rules and procedures required to be identified in Item 11(c) the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

Item 15: Display

- a. Does the NMS Stock ATS operate as an Electronic Communication Network as defined in Rule 600(a)(23) of Regulation NMS?

☐ Yes ☒ No

- b. Are Subscriber orders and trading interest bound for or resting in the NMS Stock ATS displayed or made known to any Person (not including those employees of the NMS Stock ATS who are operating the system)?

☒ Yes ☐ No

If yes, explain the display procedures, including how and when Subscriber orders and trading interest are displayed, how long orders and trading interest are displayed, what information about orders and trading interest is displayed, and the functionality of the

Broker-Dealer Operator and types of market participants that receive the displayed information.

For ASPEN, the ATS offers the IQX Data Feed, which displays orders eligible to be displayed in real-time to IQX Data Feed Recipients. Subscribers, in their discretion, may submit Limit Orders and Primary Peg Orders as displayed orders. Displayed orders from all three ASPEN books are available in the IQX Data Feed. Each of the ASPEN books have individualized data feeds; as such, subscribers to the IQX Data Feed can choose to consume data from whichever books they choose through separate feed identifiers.

The ATS will not display Limit Orders and Primary Peg Orders that lock or cross contra-side interest that is displayed (1) inside the ATS or (2) as part of the NBBO as determined by the SIP and/or SRO proprietary data feeds. Instead, if a displayed Limit Order or Primary Peg Order would lock or cross displayed contra-side interest inside the ATS or as part of the NBBO, such order will be displayed one minimum price variation less aggressive than the price of displayed contra-side interest inside the ATS or as part of the NBBO and ranked at the price of displayed contra-side interest inside the ATS or as part of the NBBO. In the event the displayed contra-side interest inside the ATS or the NBBO updates, such order's displayed price will be updated to the most aggressive price permissible without locking displayed contra-side interest inside the ATS or the NBBO, up to the order's limit price, and such order's ranked price will be updated to the most aggressive price permissible without crossing displayed contra-side interest inside the ATS or the NBBO,

For all displayed orders, the ATS disseminates all eligible bids and offers along with the size available (full depth of book) in the IQX Data Feed as part of ASPEN. The IQX Data Feed also disseminates all executions that occur in ASPEN – displayed and non-displayed - in real-time. The execution information includes the price and number of shares executed.

Orders designated by a Subscriber to interact with other orders in a Hosted Pool are not eligible to be displayed orders. Executions occurring in a Hosted Pool are not disseminated in the IQX Data Feed.

Orders may be sent to the ATS through the SOR, and thus, the SOR is aware of a Subscriber's order information being sent to the ATS (symbol, size, side, price). The SOR accesses the IQX Data Feed on the same terms as any other recipient of the IQX Data Feed. The DMA provider has knowledge of the Subscriber's order information (symbol, size, side, price) being sent by the SOR through the DMA provider to access the ATS. The DMA is prohibited from sharing such information outside of its organization.

- c. If yes to Item 15(b), are the display procedures required to be identified in 15(b) the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.