

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

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 only such product or service that Luminex offers System Subscribers is a user interface (the "Luminex UI"). While virtually all System Subscribers use an external OMS, EMS, or order router to send orders to the ATS, the Luminex UI is offered to all Subscribers. Subscribers can manage orders via the Luminex UI and can also monitor executions in the ATS via the Luminex UI, even if those orders were submitted to the ATS via an OMS, EMS, or router. While the Luminex UI is made available to all Luminex Subscribers, not all Luminex Subscribers use the Luminex UI. Orders cannot be entered via the Luminex UI, and the use of the Luminex UI provides no speed advantage versus other means of order management. Trade advertising (symbol only) from the previous trade date (“T-1”) is made available to “opt-in” Subscribers via the Luminex UI on ~~each the trading day after~~ trade date (“T+1”). Please see also Part II Item 7(b). In addition, trade advertising (symbol only) from the current trade date (T) is made available to all Subscribers via the Luminex UI unless a Subscriber opts out of receiving such advertising. Subscribers may contact Luminex Sales either via phone or electronically to opt out of this real-time advertising.

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

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

Fidelity offers a routing tool to institutional customers called Fidelity Service Bureau ("FSB"), which is operated by a non-broker-dealer Fidelity entity. Certain System Subscribers’ traders, including but not limited to those of FMR Co., use FSB to route orders to the System for handling and execution. As it does with other order entry systems, Luminex pays FSB a monthly fee for connectivity of the Subscribers and traders that use FSB to access the System. The Firm understands that FSB was not designed specifically for use with the System and can be used to reach other venues or trading destinations in addition to the System. Luminex is not a party to any agreements between Subscribers and FSB, and users of FSB are not treated any differently in the ATS than non-users of FSB. Please see Part III Item 5(c).

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?

If no, identify and explain any differences.

☐ Yes ☒ No

Luminex is unaware of the terms and conditions of the use of FSB for any particular Subscriber. Luminex pays the same monthly rate to FSB for all Subscribers that use FSB. Luminex does not enter orders or trading interest into the ATS, via FSB or otherwise.

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:

i. written standards controlling employees of the ATS that trade for employees' accounts; and

ii. written oversight procedures to ensure that the safeguards and procedures described above are implemented and followed.

Luminex deems client-specific trading interest, order, and trade data to be “Confidential Trading Information” in the context of this question. Pursuant to SEC Rule 301(b)(10) and other regulatory requirements, Luminex has critical physical and logical access controls to reasonably ensure that access to Confidential Trading Information of Subscribers is appropriately restricted to only those who need such access to support the System. The controls and related restrictions apply both to Luminex employees and those of FTG that support the System (collectively, “System support staff”). With respect to physical access controls, Luminex offices are locked at all times and are inaccessible to the public at all times. Access to Luminex office space is permitted for Luminex employees, a limited number of FTG employees who support the System, and a limited number of building management, building security, and other related staff. Physical access is controlled via enabled swipe cards, which must be approved by the Luminex Chief Information Security Officer (CISO) or an approved delegate. The Luminex CISO regularly reviews reports to determine who accessed Luminex space to ensure that the documented access to Luminex office space was limited to authorized individuals and also regularly reviews the list of persons authorized to have access to the Firm’s office space in order to reasonably ensure that only appropriate persons have access to the Firm’s office space. Data centers that support the System are also equipped with multiple levels of security in order to reasonably ensure that access is limited to appropriately authorized individuals. It is important to note that even though a person may have physical access to Luminex office space, access to Confidential Trading Information is strictly controlled through the processes described immediately below.

Luminex uses a privileged access system as an access control with respect to Luminex systems, applications, and accounts and any Confidential Trading Information contained therein. The privileged access system is managed on the Firm’s behalf by its information security vendor, DXC Technology (“DXC”). DXC enables and disables accounts for applicable System support staff solely based upon instruction from the Luminex CISO or approved delegate. In addition, even those granted access can only access the information needed to perform their specific job functions. Access and entitlements are generally assigned to particular access groups, and thus access to Confidential Trading Information is limited to those groups that perform support functions that require access to systems that may contain Subscriber Confidential Trading Information. Please see Part II Item 7(d). Those not in such groups do not have access to Confidential Trading Information. Luminex performs a semi-annual review of all System support staff with access to systems containing Confidential Trading Information to ensure that access to systems that may contain Subscriber Confidential Trading Information is strictly limited to only those System support staff who need it in order to perform their job functions. These controls over access to Confidential Trading Information are reviewed on an annual basis as part of the Firm’s Service Organization Controls (“SOC”) 1 attestation audit that is conducted by an independent service auditor in an effort to ensure that these safeguards are followed. DXC also performs regular vulnerability scanning and penetration testing assessments as part of the Firm’s efforts to appropriately safeguard client Confidential Trading Information. Among other protections, the Firm employs firewall and intrusion prevention and detection systems to further protect such Confidential Trading Information.

Luminex also utilizes several data loss prevention measures in an effort to reasonably ensure that Confidential Trading Information is not inappropriately taken from Luminex systems. These measures include the blocking of Luminex employee access to on-line file sharing sites (including, but not limited to, Dropbox and other similar sites) and the disabling of “write” capabilities of USB drives on Luminex PCs and laptops so that Confidential Trading Information may not be copied onto portable storage devices. The Luminex CISO may permit the temporary availability of a file sharing site to enable Luminex operations staff to provide a specific Subscriber with application-related files, after which the file sharing site is once again blocked from availability. The Firm blocks access to social media sites from web browsers on Firm PCs and laptops, and the Firm also blocks access to internet-based webmail programs. In addition, Luminex captures and monitors all employee electronic communications through Firm accounts to reasonably ensure that employees are not inappropriately transmitting Confidential Trading Information outside of the Firm via email, text message, or other means of Firm-provided electronic communication. Electronic communications via Firm accounts are regularly reviewed by Compliance and management to ensure compliance with Firm policies. Firm employees are regularly trained on appropriate treatment of Confidential Trading Information, and related policies and procedures are also contained in the Firm’s Written Supervisory Procedures document, which is required to be read and attested to by all Firm

employees twice annually. There are confidentiality provisions within the written support agreement between Luminex and NFS that require those NFS (FTG) employees to safeguard any System information that they may have access to as part of supporting the System.

In addition, all System support staff are subject to trading restrictions to ensure that such persons' trading activities do not conflict with the interests of System Subscribers. Luminex does not have any individual or retail customer accounts, including employee accounts. As such, Luminex employee trading accounts must be opened and maintained at other broker-dealers, upon approval by the Luminex Chief Compliance Officer (CCO). Luminex employees are required to disclose to Compliance all outside brokerage accounts, and duplicate trade confirmations and account statements are required to be provided to Compliance for all Luminex employee-related accounts held outside the Firm. Except as described below, System support staff with access to Confidential Trading Information are prohibited from purchasing any individual (non-ETF) NMS equity securities and options linked to individual NMS equity securities, regardless of whether there are pending or recent orders or trades in those securities in the System. (Trading of ETFs is permitted under the Firm’s employee trading policy.) Sales of individual (non-ETF) NMS equity securities, for those System support staff who had preexisting positions prior to joining the Firm or beginning to support the System, are permitted with the advance permission of the Luminex CCO. The Luminex CCO will review the intended sale transaction versus the System’s current and recent order and trade activity in the particular security. If the security that the System support staff person wishes to sell is either currently active in the System or has recently traded in the System, approval for the proposed trade will be denied. There are exceptions to these prohibitions if the System support staff person’s accounts are managed by an advisor (human or automated) that has full investment discretion while the System support staff person has none. Whether the account is managed by the employee or by an outside advisor, Luminex employees must still disclose such accounts to Compliance and provide duplicate copies of account statements and trade confirmations to Compliance. Luminex employees must also comply with other trading-related Firm policies such as, but not limited to, its Insider Trading policy. FTG employees that support Luminex and have access to Luminex Confidential Trading Information must comply with the Luminex employee trading restrictions, in addition to any trading policies of their employer. Luminex Compliance does not receive or review duplicate copies of account statements or trade confirmations with respect to FTG employee accounts, but Compliance by FTG employees with the Luminex trading policies is monitored by Fidelity Compliance in cooperation with the Luminex CCO.

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.

While Subscribers are able to do so, Luminex is unaware of such consent being sought or given, aside from information provided to entities such as custody banks, prime brokers, or other entities related to clearance and settlement of transactions. Confidential Trading Information is kept confidential (meaning, in this specific case, not disclosed outside the Firm to anyone who is not otherwise supporting the System) up until the time the transaction is cleared and settled, which involves NFS, Luminex’s clearing firm, and the other external parties referenced immediately above. For example, on trade date, a Subscriber will submit instructions electronically designating to which shares purchased or sold through the Subscriber’s master trading account should be allocated, designated that specific share amounts from the block execution be settled in whatever specific subaccounts (typically in the name of mutual funds or similar funds on whose behalf the Subscriber is purchasing or selling securities). Depending on the method of clearance and settlement, details of the share purchase or sale will be made available to NFS and to other entities involved in the clearance and settlement of the Subscriber’s transaction. Please see Part III Item 22 below. Any other consents to the disclosure of its own Confidential Trading Information must be made in writing, including but not limited to email, to Luminex Sales or other appropriate Luminex employees.

On a ~~T+1~~next day basis (meaning, on the trade date after the previous trade date), Luminex informs “opt-in” Subscribers of the securities that traded in the System on the prior trading day. In this context, “opt in” means a Subscriber who wishes to receive these notifications, which are displayed in the Luminex UI. In exchange for being able to view these notifications in the Luminex UI, an “opt-in” Subscriber must be willing to allow the securities that they traded in the System to be included in the notifications. For example, if two “opt-in” Subscribers matched and executed a trade in the System in security “XYZ,” then XYZ would be listed in the trade advertisement that is displayed to “opt in” Subscribers the following trading day. If an “opt-in” Subscriber matched and executed a trade in the System with a “non-opt-in” Subscriber in XYZ, then XYZ would not be listed in the trade advertisement that is displayed to “opt in” Subscribers the following trading day, unless there was a separate transaction in that same security involving two “opt-in” Subscribers. The parties associated with any trade in the System are not identified in any of these trade advertisements, nor are the specific terms and conditions of any transaction. The trade advertisements solely list the securities that traded in the System, provided that both parties to the transaction or transactions in that security were “opt-in” Subscribers. “Opt-in” participation in the trade advertising program is at the broader Subscriber level and not at the trader level. This means that if a Subscriber opts in to trade advertisements, then no trades by any of its traders could be excluded from the trade advertisements if an “opt-in” Subscriber was on the other side of that transaction. As noted in Part II, Item 5, trade advertising (symbol only) from the current trade date

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)?

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.

(“T”) is made available to all Subscribers via the Luminex UI unless a Subscriber opts out of receiving such advertising. Subscribers may contact Luminex Sales either via phone or electronically to opt out of this real-time advertising. As with the next day trade advertising, for a symbol to be advertised via the real-time advertising on T, the System must have had an execution in that symbol on T between two opt-in Subscribers. If a Subscriber opts out of receiving real-time trade advertising, then that Subscriber’s trades are not included among those which may be subject to real-time trade advertising.

☒ Yes ☐ No

To the extent that a Subscriber provides such consent, which as noted in Part II Item 7(b) above must be provided in writing, such consent could similarly be withdrawn, again in writing.

Access to Confidential Trading Information is limited to those persons who either operate or support the operations of the ATS or are responsible for its compliance with applicable rules. A limited number of persons that support the ATS or who provide trading support to System Subscribers have access to such information. In addition to the Luminex staff noted here, outside technology support personnel from FTG with server-level access or access to System-related databases may have access to Subscriber Confidential Trading Information. The roles and responsibilities of such persons include those who support the System’s operations and support software development with respect to the System, in addition to the Luminex Operations desk that provide functional and operational support of the System to Subscribers. As described in Part II Item 7(a) above, access to systems, servers, and databases that may contain Confidential Trading Information is reviewed on a regular basis to ensure that access is limited to only those who require such access to perform their jobs and is removed promptly when no longer needed. Luminex employees have access to certain real-time Subscriber information via an internal tool called the Sales Dashboard. As described below, the information available on the Sales Dashboard includes, on a pre-match basis, the Subscriber and trader who entered an order or trading interest into the System, the price (for limit orders) and size of such order, and the time the order was entered. For all Sales Dashboard users other than the Luminex Operations team, on a pre-match basis the “tickers” or stock symbols associated with live orders or trading interest in the System are masked in order to protect the confidential nature of such information. Other terms and conditions of the order or trading interest available on the Sales Dashboard include the entered Top Quantity, the entered MinQ and AutoEx, if applicable, whether the order or trading interest was to buy, to sell, or sell short, the market capitalization segment of the security (Large Cap, Mid Cap, or Small Cap), which sector the security belongs to (e.g., Healthcare, Utilities, etc.), and various System individual security and aggregate trading statistics. A significant amount of the information available in the Sales Dashboard is not Confidential Trading Information but is instead non-Subscriber-specific or non-security specific System data. Once a match occurs in the System, the real symbol relating to that match becomes available in order to allow the Sales team to respond to trader inquiries with respect to the match, to contact traders who may have “fallen down” on a match (See Part III Item 13), and to provide similar post-match trader support functions. The Sales Dashboard also includes post-match information including the executed quantity and execution price for those matches that result in an execution in the System. The Luminex CCO has similar access to post-match Subscriber information in order to respond to regulatory inquiries as necessary. Other Luminex staff have access to the Sales Dashboard for the purpose of monitoring the overall activity in the System. As described in Part II Item 7(a) above, all Luminex employees and FTG staff that support the System are subject to appropriate confidentiality commitments and to restrictive employee trading policies in order to reasonably protect Subscriber Confidential Trading Information from potential misuse.

ATS-N: 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

☒ Yes ☐ No

into the ATS (e.g., via Financial Information eXchange ("FIX") protocol, Binary)?

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

All orders and trading interest must be submitted to the System via FIX version 4.2 or 4.4. Most OMS or EMS vendors used by System Subscribers send order and trading interest messages that are in, or are converted by the Firm to, standard FIX. There are other vendors that use a “drop” FIX protocol in which “drop copy” messages are sent by the System back to the Subscriber’s OMS or EMS upon a match in the System to confirm that the needed shares are still available in order to potentially consummate a match. The System does not accept and does not have the ability to accept manual orders or trading interest.

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

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.

In addition to using an O/EMS to send orders or trading interest to the System, Subscribers may also use a third party technology provider as long as the orders or trading interest are sent to the System directly from the client, meaning they are institutional customer orders or trading interest where the third party system passes a client identifier for the underlying Subscriber and trader that sent the order or trading interest. The third party routers are accessed via a front-end at the Subscriber, and any orders or trading interest sent to Luminex via such third party routers are submitted to the System using either FIX 4.2 or 4.4 or are converted to FIX 4.2 by the Firm. There is no material latency difference between the third party routers and other means of order and trading interest transmission via an OMS or EMS. Luminex may integrate with other technology providers at any time at its discretion or at the request of its Subscribers. Subscribers wishing to route orders or trading interest to the System via any unsupported third party technology providers would have to work with Luminex and the new third party technology to ensure that the new provider would pass to the System a client identifier for the underlying Subscriber and trader that sent the order or trading interest.

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