

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

Item 3: Order Interaction with Broker-Dealer Operator; Affiliates

- a. Can any Subscriber opt out from interacting with orders and trading interest of the Broker-Dealer Operator in the NMS Stock ATS?

☒ Yes ☐ No

If yes, explain the opt-out process.

Until completion of the below described system change, which will begin on August 5, Subscribers can opt out from interacting with Firm/Conditional Orders of JPMS. As described in Part III, Item 13, principal Firm/Conditional Orders of JPMS are assigned to Tier 4 in JPM-X. Specifically, the P-1 sub-tier in Tier 4 includes principal JPMS trading desk flow that accesses JPM-X via the algorithms/SOR. As described in Part III, Item 14, a Subscriber can specify the tiers or sub-tiers w which the Subscriber has opted out from interacting (i) on an order-by-order basis in the Firm/Conditional Order instructions submitted to JPMS or (ii) by contacting the Subscriber's JPMS sales representative with respect to a subset Firm/Conditional Orders or all order flow. In each case, JPMS implements the restriction as soon as reasonably practicable.

Beginning on August 5, 2024 and once the changes to the segmentation, as described in Part III, Item 13, are effective:

As detailed below, Subscribers can opt-out of interacting with JPMS's principal or agency order flow by opting-out of specific tiers or opting-out of principal executions generally.

Tiers: Subscribers may opt-out from interacting with Firm/Conditional Orders that are assigned to Tier 3 – principal flow of JPMS and JPMS's affiliates (excluding JPMS principal flow included in Tier 1 if the Subscriber has not opted-out of Tier 1 as well), that access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR make a determination related to venue or price, as described in Part III, Item 13. Subscribers also may opt-out of JPMS principal and agency flows included in Tier 1, as described in Part III, Item 13, by opting out of Tier 1 entirely. By doing so, Subscribers would opt-out of JPMS principal flow within that tier along with institutional investor client order flow and broker-dealer client order flow received by JPMS or JPMS's affiliates and handled on an agency basis that access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR make a determination related to venue or price. Subscribers also may opt-out of order flow of institutional investors and non-U.S. registered broker-dealers received by JPMS or JPMS's affiliates and handled on an agency basis and routed directly to JPM-X via direct access or using directed orders through the algorithms/SOR included in Tier

2, as described in Part III, Item 13, by opting out of Tier 2 entirely.

Executions: Separately, Subscribers may request to opt-out of interacting with any orders from Tier 1 and Tier 3 that would result in a principal execution (e.g., requested because of the client's inability to receive principal executions consistent with soft dollar arrangements). By doing so, Subscribers would not opt-out of interacting with institutional client order flow and broker-dealer client order flow received by JPMS or JPMS's affiliates and handled on an agency basis that access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR make a determination related to venue or price from Tier 1.

As described in Part III, Item 14, a Subscriber can specify the tiers ~~or~~ ~~sub-tiers w~~with which the Subscriber has opted out from interacting (i) on an order-by-order basis in the Firm/Conditional Order instructions submitted to JPMS or (ii) by contacting the Subscriber's JPMS sales representative with respect to a subset of Firm/Conditional Orders or all order flow. In each case, JPMS implements the restriction as soon as reasonably practicable.

As noted in response to Part III, Item 13, beginning on August 5, 2024, JPM-X will gradually implement the tiering changes described therein by symbol range. The proposed daily symbol range implementation schedule, which will start on August 5 and may be subject to change, is as follows: Day 1: Z range; Day 2: W-Z range ; Day 3: T-Z range; Day 4: L-Z range; and Day 5, A-Z range. A detailed implementation plan will be sent to Subscribers in advance and will be available to the public here: <https://www.jpmorgan.com/markets/aqua#x>. JPM-X will disable the prior tiering logic for the migrated symbol range and will implement the above described opt-out selections for such migrated symbol range (as the tiering changes become available) in a manner that corresponds with Subscribers' existing/prior opt-out(s).

- b. Can any Subscriber opt out from interacting with the orders and trading interest of an Affiliate of the Broker-Dealer Operator in the NMS Stock ATS?

☒ Yes ☐ No

If yes, explain the opt-out process.

Until completion of the below described system change, which will begin on August 5, Subscribers can opt out from interacting with Firm/Conditional Orders of JPMS' affiliates. As described in Part III, Item 13 Firm/Conditional Orders of JPMS' affiliates are assigned to Tier 1 in JPM-X. Tier 1 consists of institutional investor clients and JPMS affiliates' flow that accesses JPM-X via the algorithms/SOR. Subscribers can opt out from interacting with Tier 1. Note that, because there are no sub-tiers in Tier 1, Subscribers cannot opt out from interacting with

Firm/Conditional Orders of JPMS's affiliates without also opting out from interacting with institutional investor clients' flow that accesses JPM-X via the algorithms/SOR. As described in Part III, Item 14, a Subscriber can specify the tiers or sub-tiers with which the Subscriber has opted out from interacting (i) on an order-by-order basis in the Firm/Conditional Order instructions submitted to JPMS or (ii) by contacting the Subscriber's JPMS sales representative with respect to a subset of

Firm/Conditional Orders or all order flow. In each case, JPMS implements the restriction as soon as reasonably practicable.

Beginning on August 5, 2024 and once the changes to the segmentation, as described in Part III, Item 13, are effective:

Subscribers can opt-out from interacting with Firm/Conditional Orders of JPMS's affiliates by opting out of Tier 1, Tier 2, and/or Tier 3. As described in Part III, Item 13, Firm/Conditional Orders of JPMS's affiliates comprised of institutional investor client order flow and broker-dealer client order flow received by JPMS's affiliates and handled on an agency basis that access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR make a determination related to venue or price are assigned to Tier 1, Firm/Conditional Orders of institutional investors and non-U.S.-registered broker-dealers received by JPMS's affiliates and handled on an agency basis and routed directly to JPM-X via direct access or using directed orders through the algorithms/SOR (i.e., where the algorithms/SOR do not make a determination related to venue or price) are assigned to Tier 2, and principal flow of JPMS's affiliates, that accesses access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR- make a determination related to venue or price are assigned to Tier 3. Subscribers can only opt-out of JPMS's affiliate flows identified and included in Tier 1 in Part III, Item 13, by opting out of Tier 1 entirely. By doing so, Subscribers would also opt-out of interacting with applicable JPMS principal flow as well as institutional investor client flow and external broker-dealer client flow received by JPMS and handled on an agency basis that access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR makes a determination related to venue or price. Subscribers can only opt-out of JPMS's affiliate flows identified and included in Tier 2 in Part III, Item 13, by opting out of Tier 2 entirely. By doing so, Subscribers would also opt-out of interacting with order flow of institutional investor and non-U.S.-registered broker-dealer received by JPMS and handled on an agency basis and routed directly to JPM-X via direct access or using directed orders through the algorithms/SOR (i.e., where the algorithms/SOR do not make a determination related to venue or price). In addition, Subscribers can only opt-out of JPMS's affiliate flows identified and included in Tier 3 in Part III, Item 13, by opting out of Tier 3 entirely. By doing so, Subscribers would also opt-out of interacting with JPMS principal flow (excluding JPMS principal flow included in Tier 1 if the Subscriber has not opted-out of Tier 1 as well).

As described in Part III, Item 14, a Subscriber can specify the ~~tiers or sub-~~tiers with which the Subscriber has opted out from interacting (i) on an order-by-order basis in the Firm/Conditional Order instructions submitted to JPMS or (ii) by contacting the Subscriber's JPMS sales representative with respect to a subset of

Firm/Conditional Orders or all order flow. In each case, JPMS implements the restriction as soon as reasonably practicable.

As noted in response to Part III, Item 13, beginning on August 5, 2024, JPM-X will gradually implement the tiering changes described therein by symbol range. The proposed daily symbol range implementation schedule, which will start on August 5 and may be subject to change, is as follows: Day 1: Z range; Day 2: W-Z range ; Day 3: T-Z range; Day 4: L-Z range; and Day 5, A-Z range. A detailed implementation plan will be sent to Subscribers in advance and will be available to the public here: <https://www.jpmorgan.com/markets/aqua#x>. JPM-X will disable the prior tiering logic for the migrated symbol range and will implement the above described opt-out selections for such migrated symbol range (as the tiering changes become available) in a manner that corresponds with Subscribers' existing/prior opt-out(s).

Part III: Manner of Operations

Item 6: Connectivity and Co-location

- a. Does the NMS Stock ATS offer co-location and related services (e.g., cabinets and equipment, cross-connects)?

☒ Yes ☐ No

If yes, provide a summary of the terms and conditions for co-location and related services, including the speed and connection (e.g., fiber, copper) options offered.

JPMS' JISU technology, a low-latency platform that is accessible through a standard FIX messaging protocol (FIX 4.2 AP can share the same rack space in the Equinix NY4 New York IBX Data Center with the JPMS trading algorithms, SOR, and JPM-X. Subscribers that access JPM-X by routing Firm/Conditional Orders directly to JPM-X route via JISU. In addition, Subscribers that access JPM-X by routing orders to JPMS trading algorithms or by routing Firm/Conditional Orders to the SOR can increase the speed of their communications with JPM-X by routing via JISU. U.S.-registered broker-dealer Subscribers, assigned to Tier 4 and Tier 5 as described in Part III, Item 13, access JISU via a 10 GB/sec fiber cross-connect between the hardware of Lucera, a third-party connectivity provider, and JISU. All other Subscribers can access JISU either via a

10GB/sec fiber cross-connect between the hardware of Lucera and JISU, or via the following direct cross-connects to JISU: (a) 1 GB/sec fiber, (b) 10GB/sec fiber, or (c) copper. Such direct cross-connect is provided by Equinix, the operator of the data center. Subscribers that access JISU are subject to any applicable contractual agreements with JPMS (such as Electronic Trading Terms of Service, discussed in response to Part III, Item 5(c)) and/or with Lucera and could be liable for charges resulting from such connectivity under the agreements. Subscribers also can contract directly with Equinix to be located in the Equinix NY4 New York IBX Data Center, the same data center in which the JPMS trading algorithms, SOR, JISU, and JPM-X are located. Subscribers, however, cannot share the same rack space with the JPMS trading algorithms, SOR, JISU, and JPM-X. Subscribers, irrespective of their location, can, but are not required to, access JISU.

Item 7: Order Types and Attributes

- a. Identify and explain each order type offered by the NMS Stock ATS. In your explanation, include the following:
 - i. priority, including the order type's priority upon order entry and any subsequent change to priority (if applicable); whether and when the order type can receive a new time stamp; the order type's priority vis-à-vis other orders on the book due to changes in the NBBO or other reference price; and any instance in which the order type could lose execution priority to a later arriving order at the same price;
 - ii. conditions, including any price conditions (e.g., how price conditions affect the rank and price at which it can be executed; conditions on the display or non-display of an order; or conditions on executability and routability);
 - iii. order types designed not to remove liquidity (e.g., post-only orders), including what occurs when such order is marketable against trading interest on the NMS Stock ATS when received;
 - iv. order types that adjust their price as changes to the order book occur (e.g., price sliding orders or pegged orders) or have a discretionary range, including an order's rank and price upon order entry and whether such prices or rank may change based on the NBBO or other market conditions when using such order type; when the order type is executable and at what price the execution would occur; whether the price at which the order type can be executed ever changes; and if the order type can operate in different ways, the default operation of the order type;
 - v. whether an order type is eligible for routing to other Trading Centers;

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- vi. the time-in-force instructions that can be used or not used with each order type;
- vii. the circumstances under which order types may be combined with another order type, modified, replaced, canceled, rejected, or removed from the NMS Stock ATS; and
- viii. the availability of order types across all forms of connectivity to the NMS Stock ATS and differences, if any, in the availability of an order type across those forms of connectivity.

The following order types are eligible for execution in JPM-X:

--Non-Peg Limit Order — an order to buy or sell at a specified fixed price or better;

--Primary Peg Order — an order to buy or sell at the inside quotation of the National Best Bid or Offer ("NBBO") on the same side of the market, even as the NBBO changes (with or without a limit price);

--Midpoint Peg Order — an order to buy or sell at the midpoint between the inside bid and the inside offer of the NBBO, even as the NBBO changes (with or without a limit price); and

--Market Peg Order — an order to buy or sell at the inside quotation of the NBBO on the opposite side of the market, even as the NBBO changes (with or without a limit price).

Each of the above order types can have one of the following two time-in-force instructions:

--Immediate-or-Cancel ("IOC"), which is an instruction that the order be executed immediately with any portion of the order that cannot be executed immediately being cancelled; and

--Day, which is an instruction that the order rest in the book maintained by JPM-X (the "Order Book") until the order is executed, with any portion of the order that cannot be executed by the end of the trading day, or earlier in accordance with the time interval specified by the Subscriber or an algorithm selected by the Subscriber, being cancelled.

A blank time-in-force field is treated as a Day time-in-force instruction.

The above order types are available for use by Subscribers that access JPM-X directly or via the algorithms/SOR, irrespective of whether such access occurs through JISU. JPM-X does not offer post-only order types, and none of the above order types is eligible for routing to other Trading Centers. As described in response to Part III, Item 9, JPM-X accepts limit and pegged conditional order messages corresponding to the order types described above with a day (but not IOC) time-in-force instruction. ~~JPM-X treats buy minus orders as buy orders and sell plus orders as sell orders.~~

The above order types cannot be combined (i.e., an order cannot be more

than one order type). Subscribers that access JPM-X by routing to it or the SOR directly, and algorithms that access JPM-X via the SOR on behalf of Subscribers, can modify, replace, or cancel day orders routed to JPM-X. The modification or replacement of a day order results in the entry of a replacement order with a new time stamp and lower priority in time than the original order, unless the modification is reduction in the quantity of the order, in which case the replacement order has a new time stamp but the same priority in time that the original order had prior to its replacement.

JPM-X rejects (1) short sale exempt, buy-minus, and sell-plus orders~~;~~; (2) orders priced at or above \$1.00 per share if priced in a sub-penny increment; (3) orders priced below \$1.00 per share if priced in an increment of less than \$.0001; (4) orders that exceed limits imposed by JPMS pursuant to its obligations under SEC Rule 15c3-5; ~~and~~ (5) any order types and/or orders with any time-in-force instructions other than those identified above (for example, non-Peg Market orders and/or orders with a time-in-force instruction of "On the Open"); and (6) beginning August 5, orders that cannot be assigned to an order flow type, as defined in Part III, Item 13, because they lack the required information. The change in (6) will be implemented by symbol range alongside the tiering changes described in Part III, Item 13.

An order is ineligible for execution in JPM-X unless the price, minimum quantity, and counterparty preference instructions associated with the order, if any, are satisfied. Accordingly, a partially executed order is cancelled if the leaves quantity is less than the minimum quantity instruction associated with the order. An order also is ineligible for execution in JPM-X if the order is a firm-up order or an order committed to a conditional order message during a firm-up period, as described in response to Part III, Item 9.

Once JPM-X determines that an order is eligible for execution, it is crossed with other eligible order(s) on the opposite side of the market based on price/tier/time priority (e.g., at a given price level, Tier 1 orders, regardless of order capacity, have higher priority than Tier 2 orders, and at a given price level within the same tier, orders received earlier in time have higher priority than orders received later in time). (As described in response to Part III, Item 11(c), as between firm orders and conditional order messages at the same price, firm orders always have priority over conditional order messages irrespective of their tier or when they were received by JPM-X.) When two orders eligible for execution are crossed, they are executed at or within their effective limit prices, as described in response to Part III, Item 11(c).

Accordingly, a peg order is executed at its pegged price or better. JPM-X does not execute a cross if the inside quotation of the NBBO is crossed (i.e., the inside bid exceeds the inside offer) or locked (i.e., the inside bid is equal to the inside offer). In addition, JPM-X does not execute a cross in any NMS stock that is subject to a regulatory or trading halt (although, as described in response to Part III, Item 20, JPM-X will continue to accept Firm/Conditional Orders in such an NMS stock and instructions to modify, cancel, or replace Firm/Conditional Orders in that NMS stock using the

priority logic described in response to Part III, Item 11(c)).

Although a change in the NBBO would not affect the relative priority of orders (including peg orders) that remain eligible for execution after the change, the change could affect whether an order with a price instruction associated with it (including peg order) is eligible for execution and the execution price at which orders that remain eligible for execution (including ~~pe~~peg orders) are crossed.

Item 9: Conditional Orders and Indications of Interest

- a. Does the NMS Stock ATS send or receive any messages indicating trading interest (e.g., IOIs, actionable IOIs, or conditional orders)?

☒ Yes ☐ No

If yes, identify and explain the use of the messages, including information contained in messages (e.g., price or size minimums), how the message is transmitted (e.g., order management system, smart order router, FIX), when the message is transmitted (e.g., automatically by the ATS, or upon the sender's request), the type of Persons that receive the message (e.g., Subscribers, Trading Centers), responses to conditional orders or IOIs (e.g., submission to firm-up conditional orders), and the conditions under which the message might result in an execution in the ATS (e.g., response time parameters, interaction, and matching).

JPMS offers Subscribers a process by which they can find potential contra-side trading interest in JPM-X (the "Conditional Order Process").

The Conditional Order Process makes use of two types of trading interest. The first type of trading interest is a conditional order message, which describes the price, size, side, symbol, and minimum quantity attributes of the Subscriber's trading interest. JPM-X accepts limit and pegged conditional order messages corresponding to the order types described in response to Part III, Item 7(a) with a day (but not IOC) time-in-force instruction. Subscribers can transmit conditional order messages to JPM-X directly through a proprietary FIX messaging protocol or via the SOR. JPMS trading algorithms also can transmit conditional order messages to JPM-X via the SOR on behalf of Subscribers. Conditional order messages, unlike firm orders, are not executable upon receipt.

The second type of trading interest is a firm order resting in the Order Book that is eligible to be matched with conditional order messages (a "Resting Order"). A Subscriber's firm order resting in the Order Book is eligible to be matched with conditional order messages unless (i) it has an IOC time-in-force instruction or (ii) the Subscriber has opted out of participating in the Conditional Order Process.

When a Subscriber or JPMS trading algorithm on behalf of a Subscriber

("User 1" for purposes of this discussion) ~~transmit~~transmits a conditional order message to JPM-X, JPM-X looks for contra-side trading interests that are eligible to be matched with the conditional order message. A contra-side trading interest can take the form of another conditional order message or a Resting Order transmitted by a Subscriber or JPMS trading algorithm on behalf of a Subscriber ("User 2" for purposes of this discussion). JPM-X determines whether User 2's contra-side trading interest is eligible to be matched with User 1's conditional order message based on (i) the price, size, side, symbol, and minimum quantity attributes reflected in User 1's conditional order message and User 2's conditional order message or Resting Order and (ii) User 1's and User 2's respective counterparty preferences (see response to Part III, Item 14). As with firm orders, JPM-X matches conditional order messages with contra-side trading interest on the basis of price/tier/time priority, as described in response to Part I Item 11(c). (As described in response to Part III, Item 11(c), as between firm orders and conditional order messages at the same price, firm orders always have priority over conditional order messages irrespective of their tier or when they were received by JPM-X.)

If JPM-X matches User 2's contra-side trading interest with User 1's conditional order message, JPM-X transmits to User a message indicating that contra-side trading interest has been found (a "firm-up invitation"), describing the symbol, quantity, ~~and~~-price of the conditional order initially routed by User 1, and, for conditional orders originating from JPMS' trading algorithms and transmitted to JPM-X via the SOR, the matched size of contra-side trading interest. The matched size of the contra-side trading interest is not provided on the firm-up invitation for conditional orders that do not originate from JPMS algorithms. JPM-X transmits the firm-up invitation to User 1 (i) vi a proprietary FIX messaging protocol if User 1 is a Subscriber that transmitted the conditional order message to JPM-X directly or (ii) via the SOR if User 1 is a Subscriber or JPMS trading algorithm that transmitted the conditional order message to JPM-X via the SOR. JPM-X simultaneously transmits a firm-up invitation to User 2 describing the symbol, quantity, ~~and~~-price of the conditional order initially routed by User 2, and, for a conditional order routed from JPMS' trading algorithms and transmitted to JPM-X via the SOR, the matched size of contra-side trading interest, in which case JPM-X transmits the firm-up ~~invitation to~~invitation to User 2 (i) via a proprietary FIX messaging protocol if User 2 is a Subscriber that transmitted the conditional order message to JPM-X directly or (ii) via the SOR if User 2 is a Subscriber or JPMS trading algorithm that transmitted the conditional order message to JPM-X via the SOR. The matched size of the contra-side trading interest is not provided on the firm-up invitation for conditional orders that do not originate from JPMS algorithms and transmitted to JPM-X via the SOR. JPM-X will not send a firm-up invitation to User 2 if User 2's contra-side trading interest is in the form of a Resting Order.

When JPM-X transmits a firm-up invitation to User 1, JPM-X cancels User

1's conditional order message, and User 2's contra-side trading interest is not eligible to trade for the duration of the firm-up period, which is the shorter of (i) the time it takes for JPM-X to match User 1's firm-up order, described below, with User 2's firm-up order or Resting Order and (ii) the default firm-up period, which is currently two seconds.

Upon receipt of the firm-up invitation, User 1 and, if applicable, User 2 have the option to (1) do nothing or (2) transmit a firm order in response to the firm-up invitation (a "firm-up order") within the default firm-up period to JPM-X. The price, size and minimum quantity attributes reflected in a Subscriber's firm-up order may differ from the corresponding attributes reflected in the Subscriber's earlier conditional order message. If User 2's contra-side trading interest is in the form of a conditional order message and User 1 and User 2 transmit firm-up orders within the default firm-up period, JPM-X will cross the two firm-up orders based on their respective order attributes; if only one firm-up order is transmitted within the default firm-up period, JPM-X will cross the firm-up order with an available firm order resting in the Order Book, if any, consistent with the execution priorities described in response to Part III, Item 7(a). If User 2's contra-side trading interest is in the form of a Resting Order and User 1 transmits a firm-up order within the default firm-up period, JPM-X will cross the firm-up order and Resting Order based on their respective order attributes; if the Resting Order has been cancelled, JPM-X will cross the firm-up order with an available firm order resting in the Order Book, if any, consistent with the execution priorities described in response to Part III, Item 7(a). If JPM-X is unable to cross a firm-up order with another order or partially crosses a firm-up order with another order, JPM-X will cancel the unexecuted firm-up order or unexecuted portion of the firm-up order.

JPMS logs details regarding conditional order messages (including information regarding firm-up invitations sent, firm-up orders received, and execution quantities) within JPM-X system files that can be reviewed by ECS Liquidity Product Specialists to assess whether Subscribers have engaged in systematic behavior resulting in a materially negative impact the operation of JPM-X or to other Subscribers, as evidenced by, e.g., a low firm-up rate in response to firm-up invitations (see Part III, Item 3), and consequently should be permitted to continue to transmit conditional order messages.

By default, (i) JPMS trading algorithms can transmit conditional order messages to JPM-X via the SOR and (ii) firm order resting in the Order Book are eligible to be matched with conditional order messages. Subscribers can opt out of (i) the transmission of conditional order messages on their behalf and/or (ii) having their firm orders resting in the Order Book b matched with conditional order messages. Subscribers can opt out in whole or in part (with respect to a subset of

Firm/Conditional Orders or all order flow) by contacting their JPMS sales representatives. JPMS implements such restrictions as soon as reasonably

practicable.

Item 11: Trading Services, Facilities and Rules

- 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.

JPM-X accepts non-peg limit, primary peg, midpoint peg, and market peg Firm/Conditional Orders unless they (i) are marked short sale exempt, buy-minus, or sell-plus; (ii) are priced in a sub-penny increment if priced at or above \$1.00 per share; (iii) are priced in an increment of less than \$.0001 if priced below \$1.00 per share; (iv) exceed limits imposed by JPMS pursuant to its obligations under SEC Rule 15c3-5; ~~or~~ (v) any order types and/or orders with any time-in-force instructions other than those identified in the response to Part III, Item 7 above (for example, non-Peg Market orders and/or orders with a time-in-force instruction of “On the Open”); ~~or~~ or (vi) beginning August 5, cannot be assigned to an order flow type, as defined in Part III, Item 13, because they lack required information. The change in (vi) will be implemented by symbol range alongside the tiering changes described in Part III, Item 13.

All Firm/Conditional Orders accepted by JPM-X (whether routed directly by a Subscriber or routed via the SOR by a Subscriber or JPMS trading algorithm on behalf of a Subscriber) -- other than firm-up orders and Resting Orders that are committed to a conditional order message during a firm-up period, as described in response to Part III, Item 9 -- are eligible for matching based on the liquidity available in the Order Book. JPM-X matches Firm/Conditional Orders on opposite side of the market in an NMS stock based on the price, size, and counterparty preference instructions associated with them.

Firm/Conditional Orders, once found eligible for crossing, are matched by JPM-X on the basis of price/tier/time priority, which means, e.g., that (i) at a given price level, orders in lower numbered tiers have priority over orders in higher numbered tiers and (ii) at a given price level within the same tier, orders received earlier in time have priority over orders received later in time. Accordingly, of two equally priced orders, the one that is in the lower numbered tier will have priority over the one that is in the higher numbered tier regardless of the times at which the orders were received by JPM-X. As between firm orders and conditional order messages at the same price, firm

orders always have priority over conditional order messages irrespective of their tier or when they were received by JPM-X.

When crossing two orders matched for execution, JPM-X executes at or within their effective limit prices. For marketable limit orders, the effective limit price is the NBBO inside offer for buy orders and the NBBO inside bid for sell orders. For p orders, the effective limit price is the better of the limit price specified on the order, if any, and the price defined by the peg instruction. (For example, for a midpoint peg order with a limit price, the effective limit price is the better of the order's limit price and the NBBO midpoint.) If the effective limit prices of two orders overlap, the orders will cross within, or at one of, the effective limit prices. Note that JPM-X does not execute a cross if the inside quotation of the NBBO is crossed (i.e., the inside bid exceeds the inside offer) or locked (i.e., the inside bid is equal to the inside offer). JPM-X also does not execute a cross in any NMS stock that is subject to a regulatory or trading halt. In addition, when a circuit breaker has been triggered for an NMS stock under Rule 201 of Regulation SHO and JPM-X has matched a short sale order for execution, JPM-X will only execute at a price that is above the NBBO inside bid.

JPMS, at the request of a Subscriber or on JPMS' own initiative, may determine to review any transaction in JPM-X to assess whether it was adversely affected by a technical issue or "clearly erroneous" as defined by relevant regulators (e. under FINRA Rule 11891, "the terms of a transaction are 'clearly erroneous' when there is an obvious error in any term, such as price, number of shares, or other unit of trading, or identification of the security"). If JPMS determines that a transaction was adversely affected by a technical issue or clearly erroneous, whether or not as a result of JPMS or Subscriber error, JPMS, depending on the facts and circumstances, may work with the affected Subscriber(s) to resolve the error and may cancel (bust) the transaction or assume responsibility for one side of the transaction and work to cover the resulting position as soon as is practicable. JPM-X also may suspend matching in the event of volatile market conditions (e.g., wide bid/offer spreads).

JPM-X time stamps orders upon receipt and executions at the time they occur and reports them in milliseconds in accordance with applicable FINRA Consolidated Audit Trail System and trade reporting rules. JPM-X determines queue position based on new order receipt times with microsecond precision, except in the case of a reduction in the quantity of an order in which case, the replacement order assumes the queue position of the original order.

- 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 13: Segmentation; Notice

- a. Are orders and trading interest in the NMS Stock ATS segmented into categories, classifications, tiers, or levels (e.g., segmented by type of participant, order size, duration, source, or nature of trading activity)?

☒ Yes ☐ No

If yes, explain the segmentation procedures, including (i) a description for how orders and trading interest are segmented; (ii) identify and describe any categories, classification, tiers, or levels and the types of orders and trading interest that are included in each; (iii) provide a summary of the parameters for each segmented category and length of time each segmented category is in effect; (iv) any procedures for overriding a determination of segmented category; and (v) how segmentation can affect order interaction.

Until completion of the below described system change, which will begin on August 5, 2024, Subscriber Firm/Conditional Order flow is assigned to an order flow type, each of which corresponds to a tier used for purposes of determining priority (given JPM-X's use of price/tier/time priority as described in response to Part

III, Item 11(c)). JPMS assigns a Subscriber's

Firm/Conditional Order flow to an order flow type based upon an initial review of information received from the Subscriber at onboarding. The order flow types and corresponding tiers are provided below. For the avoidance of doubt, "institutional investor client flow" does not

include "U.S.-registered broker-dealer client flow" (and vice versa), and neither of them includes JPMS flow or JPMS affiliates' flow. Fills resulting from JPMS principal trading desk flow accessing JPM-X via the algorithms/SOR (Order Flow Type P-1 in Tier 4) may be provided to JPMS clients on a riskless principal basis.

Tier 1 (Order Flow Type I-1) -- Institutional investor client flow and JPMS affiliates' flow accessing JPM-X via the algorithms/SOR;

Tier 2 (Order Flow Type I-2) -- Institutional investor client flow with direct access to JPM-X;

Tier 3 (Order Flow Type I-3) -- U.S.-registered broker-dealer client flow (both agency and principal) accessing JPM-X via the algorithms/SOR;

Tier 4 (Order Flow Type P-1) -- Internal (JPMS) principal trading desk flow accessing JPM-X via the algorithms/SOR;

Tier 5 (Order Flow Type I-4 / ELP) -- Flow of external broker-dealers

categorized as electronic liquidity providers with direct access to JPM-X;
and

Tier 5 (Order Flow Type I-5) -- Flow of external broker-dealers not categorized as electronic liquidity providers (both agency and principal) with direct access to JPM-X. !

Beginning on August 5, 2024:

Subscriber Firm/Conditional Order flow is assigned to an order flow type, each of which corresponds to a tier used for purposes of determining priority (given JPM-X's use of price/tier/time priority as described in response to Part III, Item 11(c)). JPMS assigns a Subscriber's Firm/Conditional Order flow to an order flow type based upon a review of information received from the Subscriber at onboarding and order characteristics received (e.g., for Tier 4 and Tier 5, based upon the order capacity of the order). The order flow types and corresponding tiers are provided below. For the avoidance of doubt, "institutional investor client flow" and "broker-dealer client flow" do not include JPMS principal flow or JPMS affiliates' principal flow. JPMS principal flow in Tier 3 may also include JPMS executing principally for clients on a riskless principal basis.

Tier 1 -- Comprised of the following flows, each of which access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR makes a determination related to venue or price: (i) institutional investor client order flow and broker-dealer client order flow received by JPMS or JPMS's affiliates and handled on an agency basis; (ii) JPMS principal flow originating from the Equity Finance Trading desk and designated as hedging low-touch and no-touch client security-based swaps activity; and (iii) JPMS principal flow facilitating agency orders designated as non-standard settlement through JPMS's Electronic Client Trading desk;

Tier 2 – Order flow of institutional investors and non-U.S.-registered broker-dealers received by JPMS or JPMS's affiliates and handled on an agency basis and routed directly to JPM-X via direct access or using directed orders through the algorithms/SOR (i.e., where the algorithms/SOR do not make a determination related to venue or price);

Tier 3 – Principal order flow of JPMS and JPMS's affiliates (excluding principal order flows identified in Tier 1 above), that access JPM-X via JPMS algorithms/SOR and where the algorithms/SOR make a determination related to venue or price;

Tier 4 – Order flow of U.S.-registered broker-dealers, received by JPMS with an order capacity designation of agency, and routed directly to JPM-X via direct access or using directed orders through the algorithms/SOR (i.e., where the algorithms/SOR do not make a determination related to venue or price); and

Tier 5 – Order flow of U.S.-registered broker-dealers, received by JPMS with an order capacity designation of principal, and routed directly to JPM-X

via direct access or using directed orders through the algorithms/SOR (i.e., where the algorithms/SOR do not make a determination related to venue or price).

Beginning on August 5, 2024, JPM-X will gradually implement the above noted tiering changes by symbol range. The proposed daily symbol range implementation schedule, which will start on August 5 and may be subject to change, is as follows: Day 1: Z range; Day 2: W-Z range ; Day 3: T-Z range; Day 4: L-Z range; and Day 5, A-Z range. A detailed implementation plan will be sent to Subscribers in advance and will be available to the public here: <https://www.jpmorgan.com/markets/aqua#x>. During implementation, JPM-X will disable the prior tiering logic for the migrating symbol range and will implement the new tiering logic for such symbol range.

There is no specific length of time that an order flow type or tier assignment for a Subscriber will remain in effect; however, JPMS conducts a quarterly review of the trading activity in JPM-X of a sample set of Subscribers to confirm the accuracy of the Subscribers' order flow type and tier assignments, and JPMS reserves the right to review and add, remove, or revise an order flow type or tier assignment for a Subscriber at any time. Based on a review of a Subscriber's trading activity (including, e.g., discussions with the Subscriber about changes in its business or observed changes in order flow characteristics), ECS Liquidity Product Specialists can request that the Subscriber modify its order flow and/or trading behavior to conform to its assigned order flow type or, if such a modification seems unlikely, determine to amend the Subscriber's order flow type assignment. JPMS would notify the Subscriber in the event of a change in the order flow type or tier assignment for the Subscriber. JPMS may change an order flow type or tier assignment for a Subscriber as described in response to Part III, Items 13-14 but does not otherwise override such an assignment once made. The segmentation of order flow described above affects order interaction insofar as, in looking for matching opportunities for a Subscriber's Firm/Conditional Orders, JPM-X complies with the Subscriber's counterparty preferences regarding the order flow types or tiers with which the Subscriber would like to interact, as described in response to Part III, Item 14. In addition, Firm/Conditional Orders, once found eligible for crossing, are matched by JPM-X on the basis of price/tier/time priority, which means, e.g., that at a given price level, orders in lower numbered tiers have priority over orders in higher numbered tiers, regardless of order capacity, as described in response to Part III, Item 11(c). Accordingly, of two equally priced orders, the one that is in the lower numbered tier will have priority over the one that is in the higher numbered tier regardless of order capacity or the times at which the orders were received by JPM-X. As between firm orders and conditional order messages at the same price, firm orders always have priority over conditional order messages irrespective of their tier or when they were received by JPM-X.

Item 15: Display

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

The anonymized, aggregated quantities of resting buy firm orders and resting sell firm orders, per symbol, available

in each tier of the Order Book at (i) the National Best

Bid, (ii) National Best Offer, or (iii) NBBO midpoint

(based on the sources of market data described in response to Part III, Item 23), with non-peg limit orders that could

be executed at more than one of the above prices aggregated with orders at the most aggressive of those prices, are made known to the SOR with a frequency of up to once per second, until the end of the symbol range implementation of the below described change. The SOR uses this information solely to decide whether to route firm orders to JPM-X and does not share the information with any other trading system or desk. Any Subscriber that accesses JPM-X via the algorithms/SOR can opt out of the inclusion of the Subscriber's orders in the feed described above, in which case the SOR would not rely upon the feed when routing the Subscriber's orders.

Beginning on July 19, 2024, JPM-X will continually make known, on a real-time basis, the available resting firm orders of the JPM-X Order Book to the SOR. For resting firm liquidity (i.e., Day orders only), the symbol, price, side, quantity, order type (e.g., market vs limit and peg instructions), assigned segmentation tier, counter-party preference, and minimum quantity attributes will be provided from JPM-X to the SOR. Amongst other things, the SOR will not receive information concerning the Subscriber's identity. Subscribers accessing JPM-X cannot opt-out of the

inclusion of their information in the feed. Consistent with Part II, Item 7, the SOR uses this information solely to decide whether to route firm orders to JPM-X and does not share the information with any other trading system or desk. As noted above, this change will be implemented by symbol range beginning on July 19, 2024. The proposed schedule, expecting to end on July 31, is as follows: Day 1: Z range ; Day 2: W-Z range; Day 3: S-Z range; Day 4, L-Z range and Day 5, A-Z. This implementation plan will be available to the public here:

<https://www.jpmorgan.com/markets/aqua#x>. During the implementation period, JPM-X will no longer make known the anonymized, aggregated quantities of resting buy and sell firm orders for the symbol range for which the above referenced change is enabled.

In addition, Firm/Conditional Orders are made known to the SOR when they are routed through it. When JPMS trading algorithms and Subscribers route conditional orders to JPM-X, JPM-X may send firm-up invitations back to the JPMS trading algorithms and Subscribers via the SOR. As described in response to Part III, Item 9, a firm-up invitation includes the symbol, quantity, ~~and~~ price of the associated same-side conditional order that prompted the firm-up invitation and, for a conditional order routed from JPMS' trading algorithms and transmitted to JPM-X via the SOR, the matched size of contra-side trading interest. The SOR does not retain information

about Firm/Conditional Orders resident in the Order Book other than Firm/Conditional Orders that the SOR itself determined to route to JPM-X.

Item 21: Trade Reporting

- a. Explain any procedures and material arrangements for reporting transactions on the NMS Stock ATS, including where an ATS reports transactions and under what circumstances.

Once a cross has been executed, ~~the trade is reported by~~ JPMS will report any qualifying trades to a recognized trade reporting facility of a self-regulatory organization ("SRO") in accordance with applicable SRO rules. ~~JPMS does not cross principal orders with other principal orders.~~ JPMS currently reports trades to the FINRA/Nasdaq Trade Reporting Facility (FINRA/Nasdaq TRF Carteret) or, as a backup, the FINRA Alternative Display Facility. Beginning on August 5, 2024, and in accordance with FINRA Trade Reporting FAQs 100.4 and 104.7, where matches between two JPMS principal orders within the same aggregation unit occur, such matches will be treated as an internal transfer of shares (book transfer) and, therefore, not reported to a trade reporting facility, given there is no change of beneficial ownership. This change will be implemented by symbol range alongside the tiering changes described in Part III, Item 13. JPMS also maintains audit trail information for orders

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submitted to JPM-X as required by Consolidated Audit Trail (“CAT”) reporting. JPMS will not submit CAT reports for conditional order messages in compliance with FINRA's CATNMSPLAN Frequently Asked Question - Compliance Number B40.

- b. Are the procedures and material arrangements for reporting transactions on the NMS Stock ATS the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

Item 22: Clearance and Settlement

- a. Describe any procedures and material arrangements undertaken to facilitate the clearance and settlement of transactions on the NMS Stock ATS (e.g., whether the ATS becomes a counterparty, whether it submits trades to a registered clearing agency, or whether it requires Subscribers to have arrangements with a clearing firm).

JPM-X transactions are cleared and settled by JPMS using its existing clearance and settlement infrastructure. In its capacity as a self-clearing firm, JPMS submits transactions in JPM-X for clearance at the National Securities Clearing Corporation ("NSCC") and settlement at the Depository Trust Company ("DTC"), except as described below. All JPM-X transactions clear versus JPMS and according to the settlement instructions provided to JPMS by Subscribers. Subscribers either must self-clear or have their own clearing arrangements with broker-dealer clearing firms (such as JPMS) and/or a custodial relationship with a broker-dealer or bank. If JPMS' clearing counterparty is JPMS itself, JPMS will clear the transaction internally. If JPMS' clearing counterparty is an NSCC-eligible broker-dealer other than JPMS, JPMS will submit the transaction to the NSCC pursuant to a Qualified Service Representative Agreement, NASDAQ ACT Automated Give-Up Agreement, or Correspondent Clearing 9A/9B Authorization. If JPMS' clearing counterparty is a non NSCC-eligible broker-dealer or a custodial broker-dealer or bank, JPMS will settle the transaction DVP/RVP through DTC. Beginning on August 5, 2024, and in accordance with FINRA Trade Reporting FAQs 100.4 and 104.7, where matches between JPMS principal orders within the same aggregation unit occur, i.e., where there is no change of beneficial ownership, no transaction will need to clear or settle as such matches are treated as an internal transfer of shares (book transfer). This change will be implemented by symbol range alongside the tiering changes described in Part III, Item 13.

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- b. Are the procedures and material arrangements undertaken to facilitate the clearance and settlement of transactions on the NMS Stock ATS the same for all Subscribers and the Broker-Dealer Operator?

☒ Yes ☐ No

If no, identify and explain any differences.

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Description	JPM-X Form ATS-N - DRAFT Material Amendment 06.17.24 (original)
Document 2 ID	file:///naeast.ad.jpmorganchase.com/home2\name00405\N682988\ATS-N\JPM-X Form ATS-N - DRAFT Update to June 2024 Material Amendment (revised).docx
Description	JPM-X Form ATS-N - DRAFT Update to June 2024 Material Amendment (revised)
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<u>Insertion</u>	
Deletion	
Moved from	
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Style change	
Format change	
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Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

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