

### Part III: Manner of Operations

#### 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;
  - 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.

PURE ATS is a volume-based trajectory crossing venue. However, unlike existing time-based trajectory crossing venues that execute orders based on the aggregated prices of printed trades over time (e.g., a volume weighted average price), PURE ATS uses a trajectory matching protocol that executes orders by referencing the volume, and associated price, of each trade printed to the SIP as they occur (see Part III, Item 23, Market Data, for the precise parameters of the SIP-reported trades that the ATS references). Each firm and conditional order sent to the ATS will include a symbol, size, price, market side, a liquidity transfer rate ("LTR") (explained below), and a Time-in-Force, among other terms. Matched orders receive execution fills, including partial fills called "child fills." The fills are a pre-determined percentage of each SIP-reported trade, at the printed price. Similar to orders placed in a percentage of volume execution algorithm, the PURE ATS will produce a series of "child fills." This series of child fills is called a "stream". A stream will continue uninterrupted between two matched orders so long as both orders have quantity and remain "marketable" (as such term is defined and discussed in detail below).

The remainder of this section provides additional detail on the (i) order types accepted on the ATS; (ii) how orders are prioritized; (iii) marketability (bid/offer) requirements; (iv) the ATS matching rules; (v) allocation and price discovery; (vi) order modification and cancellation; and (vii) Time-in-Force (TIF)/order instructions. It also sets forth numerous examples meant to illustrate these principles.

#### Order Types

To effect the matching protocol described above, PURE uses percentage (%) rate-based order types (“Order Types”). The % rate associated with each of the five Order Types listed below is called the LTR (referenced above). An LTR determines the size of each child fill in a stream by multiplying the applicable percentage against the quantity of each SIP-reported trade. Each Order Type has a minimum LTR and a maximum LTR, except the LS Order Type has an unlimited maximum LTR. The LTR is applied to a SIP-reported trade quantity to determine the size of a child fill, which is then decremented against the total quantity of the order (decrementing is further explained and illustrated in “Matching” found below in this item). The child fill will be at the exact price of the relevant SIP-reported trade to which the LTR was applied. This LTR can then be continuously applied to each successive SIP-reported trade to create a series of child fills in a stream. The stream can continue over time, without any time limitations (during the course of an entire trading day with any remaining quantities cancelled at the end of a trading day).

PURE ATS has five Order Types. These five Order Types are:

1. Liquidity Seeking (“LS” or “Infinite%”)

This Order Type is seeking a child fill quantity up to the full quantity of its entire order regardless of the size of the SIP-reported trade. Subscribers can set a minimum LTR for LS orders; otherwise, the default minimum LTR for an LS order is .11%.

2. 10-200% ("200%")

This Order Type is seeking a child fill quantity of 200% of the quantity of each contemporaneous SIP-reported trade but will accept at least 10%. This means that for a SIP-reported trade of 100 shares, the 200% Order Type will accept 200 shares to 10 shares for that child fill at the price of the SIP-reported trade.

3. 5-30% ("30%")

This Order Type is seeking a child fill quantity of 30% of the quantity of each contemporaneous SIP-reported trade but will accept at least 5%. This means that for a SIP-reported trade of 100 shares, the 30% Order Type is seeking 30 shares to 5 shares for that child fill at the price of the SIP-reported trade.

4. 5-15% ("15%")

This Order Type is seeking a child fill quantity of 15% of the quantity of each contemporaneous SIP-reported trade but will accept at least 5%. This means that for a SIP-reported trade of 100 shares, the 15% Order Type is seeking 15 shares to 5 shares for that child fill at the price of the SIP-reported trade.

5. Custom LTR Range (“Custom”)

This Order Type is seeking a child fill quantity based on the Custom parameters entered. Custom orders require both a minimum and maximum LTR, and must be within the range of 1-500%; the minimum and maximum LTR of a Custom order may be equal. For example, a Custom order with a 2% minimum and a 4% maximum, will accept 2 shares to 4 shares in a child fill referencing a SIP-reported trade of 100 shares, at the price of the SIP-reported trade.

Prioritization

Firm and conditional orders are prioritized based on (i) Order Type, (ii) size of the order, (iii) marketability (as defined below), and (iv) time the order was received, in that sequence. The ATS processes (i.e., assesses for matching compatibility, as described below) firm orders prior to conditional orders regardless of the order terms of the conditional orders.

The first term considered in prioritization ranking is the Order Type. Order Types are prioritized in the following order: (1) LS, (2) 200%, (3) 30%, (4) 15%, and (5) Custom. Custom orders will always be ranked behind the standardized Order Types. This is true even if a Subscriber enters a Custom order with a higher maximum % LTR than a non-Custom order. Additionally, when multiple Custom orders are resting on the ATS order book, such Custom orders will be prioritized first by the highest maximum LTR, followed by size, marketability, and arrival time.

The following example demonstrates the Order Type prioritization if the ATS received the three orders chronologically:

Buy Order 1: 15%  
Buy Order 2: 30%  
Buy Order 3: 200%

Regardless of any other terms of the orders (e.g., size, marketability, or time), the intra-Order Type prioritization would be based on Order Type, as follows:

Buy Order 3 (Highest priority Order Type)  
Buy Order 2 (2nd Highest priority Order Type)  
Buy Order 1 (3rd Highest priority Order Type)

For two orders in the same Order Type, the second term considered in prioritization ranking is the size of the order quantity. The larger the order, the higher the standing. For example, if the ATS received the following three orders chronologically:

Buy Order 1: 15%, for 25,000 shares  
Buy Order 2: 15%, for 5,000 shares  
Buy Order 3: 15%, for 50,000 shares

The inter-Order Type prioritization would be:

Buy Order 3 (50,000 shares)  
Buy Order 1 (25,000 shares)  
Buy Order 2 (5,000 shares)

The third term considered in prioritization ranking (i.e., for orders that are the same Order Type and of equal size) is the marketability of the order.

For all Order Types, the marketability of the order for a potential stream match is the difference between the order's limit price and the contra-side NBBO. For instance, if the NBBO is \$10.01 x \$10.02 and the limit of a buy order is \$10.05, the marketability of an order is .03. The greater the marketability, the higher the standing in terms of priority.

To illustrate prioritization for a potential stream match, if the ATS received the following three orders chronologically:

Buy Order 1: 15%, for 25,000 shares, marketable by 4 cents  
Buy Order 2: 15%, for 25,000 shares, marketable by 10 cents  
Buy Order 3: 15%, for 25,000 shares, marketable by 6 cents

The inter-Order Type prioritization would be:  
Buy Order 2 (10 cents marketable)  
Buy Order 3 (6 cents marketable)  
Buy Order 1 (4 cents marketable)

In addition to streaming matches, LS Orders are also eligible to enter into block trades. Block trades are single trades that occur only when two LS orders match. These are described below in the Allocation and Price Discovery section and Example 6 of this response. LS orders have marketability for block trades (i.e., not a stream match), if the order's limit price at least satisfies its peg instruction (peg instructions are described in Item 11c). The more aggressive the limit price, the higher the standing in terms of priority.

The final term considered in prioritization ranking (i.e., for orders that are the same Order Type, equal size, and have equal marketability) is the time the order arrived, with priority being assigned chronologically. Given the aforementioned prioritization logic, it is by system design that orders arriving later could feasibly be given higher priority than earlier arriving orders.

#### Minimum Marketability Threshold

For an order to be eligible for a stream match, it must be marketable by a minimum threshold (the "minimum marketability threshold") (minimum marketability thresholds are not applied to block trades). The minimum marketability thresholds are set on a stock-by-stock basis and are neither publicly available nor made available to Subscribers and can be set at any integer, including zero. PURE ATS can modify the minimum marketability threshold for particular stocks to account for volatility, including in the event of anomalous volatility of the overall market, relevant sector, or a specific stock. To monitor for circumstances that may warrant modifying the minimum marketability threshold, PURE considers various volatility proxies such as the VIX, Implied Volatilities, and Realized Volatilities of single stocks, sector indices, and/or market-wide indices. The minimum marketability thresholds are manually updated by PURE Market Operations and are reviewed biannually.

For example, for a stock with a minimum marketability threshold of 2 cents that is experiencing significantly higher price volatility, the minimum marketability threshold could be increased to 4 cents. This would require a buy order to have a limit of 4 cents higher than the current national best offer, and a sell order to have a limit of 4 cents below the current national best bid to be eligible for a match.

PURE believes that modifications to the minimum marketability threshold in these circumstances promotes matches that yield more efficient streams between Subscribers.

Note that minimum marketability thresholds are only relevant to the creation of a match (i.e., to be eligible for a match, an order must meet the minimum marketability threshold). Once an order is in a match, so long as the order remains marketable (i.e., the order's limit price is priced at or through its respective NBBO farside), the order will remain in the match. If a matched order ceases to be marketable, the match will end.

For example, if the NBBO is \$10.01 x \$10.02, for a stock with a minimum marketability threshold of 4 cents, a sell order would need to be priced at \$9.97 to be eligible for a match. Once matched, the order would only need to remain marketable to remain in the match. If the order became unmarketable, i.e., the NBBO moved to \$9.96 X \$9.97, the match would end. To become eligible for a match again (with the previous matched order or any other order), the sell order would again need to meet minimum marketability thresholds at the then-prevailing NBBO.

### Matching

Matches are bilateral (i.e., between only two orders). For a match to occur, two orders must be compatible. Compatibility means that there is a buy and sell order in the same security, both meeting the minimum marketability threshold (not applicable to block trades), with overlapping LTRs (i.e., the LTR minimum to maximum range of one order overlaps with the LTR minimum to maximum range of another order), and that any additional order handling instructions sent with the orders (as described below in Part III, Item 11, Additional Order Parameters) are satisfied. If there are overlapping LTRs, the orders will be matched at the highest LTR within the acceptable range for each order. If an order has residual LTR after being matched, the order's decremented LTR will be available for other matches, meaning the order can be in multiple matches concurrently. Note that for prioritization purposes, a decremented order maintains its original priority standing on the order book (e.g., an order using the 200% Order Type with a residual 170% LTR following a match, is still treated as a 200% Order Type for purposes of prioritization).

#### Example 1 – Compatible LTRs:

Order 1 is a buy order for 5,000 shares in the 15% Order Type (min. of 5%, max. of 15%).

Order 2 is a sell order for 5,000 shares in the 15% Order Type (min. of 5%, max. of 15%).

These orders have overlapping LTRs because the LTR ranges of the orders overlap. Thus, the orders are eligible to be matched. The orders will be matched at 15%, which is the highest common LTR between the two orders (in this example, this also happens to be the maximum LTR for each order).

#### Example 2 – Incompatible LTRs:

Order 1 is a buy order for 5,000 shares in the 15% Order Type (min. of 5%, max. of 15%).

Order 2 is a sell order for 5,000 shares in the Custom Order Type, with a 1% minimum and a 4% maximum LTR.

These orders do not have overlapping LTRs because Order 2's LTR range (1% to 4%) does not overlap with Order 1's LTR range (5% to 15%). Thus, these orders are not eligible to be matched.

#### Example 3 – Compatible But Different LTRs:

Order 1 is a buy order for 5,000 shares in the 30% Order Type (min. of 5%, max. of 30%).

Order 2 is a sell order for 5,000 shares in the 15% Order Type (min. of 5%, max. of 15%).

These orders have overlapping LTRs because the LTR ranges of the orders overlap. Thus, the orders are eligible to be matched. The orders will be matched at 15%, which is the highest common LTR between the two orders. Order 1 will also have a residual LTR of 15%, which will rest in the ATS order book awaiting other potential matches.

#### Example 4 – Compatible LTRs and Concurrent Matching:

Order 1 is a buy order for 10,000 shares in the 15% Order Type (min. of 5%, max. of 15%).

Order 2 is a buy order for 10,000 shares in the 15% Order Type (min. of 5%, max. of 15%).  
Order 3 is a sell order for 20,000 shares in the 30% Order Type (min. of 5%, max. of 30%).

Here, Order 3 has overlapping LTRs with both Order 1 and Order 2, and has sufficient LTR to match with both contra-side orders. Therefore, Order 3 will enter two concurrent matches, one with Order 1 and a second with Order 2. In this way, Order 1 and Order 2 will satisfy their maximum LTR of 15%, and Order 3 will achieve its maximum LTR of 30% (two matches each at 15% LTR).

Example 5 – Compatible LTRs and Sequential Matching:

Order 1 is a buy order for 10,000 shares in the 30% Order Type (min. of 5%, max. of 30%).  
Order 2 is a buy order for 10,000 shares in the 30% Order Type (min. of 5%, max. of 30%).  
Order 3 is a sell order for 20,000 shares in the 30% Order Type (min. of 5%, max. of 30%).

Here, Order 3 has overlapping LTRs with both Order 1 and Order 2, but only has LTR to match with one of the orders since the orders will be matched at the highest common LTR—here 30%. Since Order 1 is prioritized over Order 2, Order 3 and Order 1 form a match at a 30% LTR. Order 2 will remain resting on the ATS order book. However, because Order 3 is larger in size than Order 1, Order 3 will have a residual 10,000 shares to sell once Order 1's buy order is completed. Therefore, once Order 1's quantity is fully exhausted, Order 3 will form a match with Order 2, which will continue as a stream until both Order 3 and Order 2 are fully exhausted (since Order 3's residual 10,000 shares to sell is equal to Order 2's 10,000 shares to buy).

#### Allocation and Price Discovery

Once a match has occurred, the ATS will use each observed SIP-reported trade in the relevant security as a reference trade to generate a "child fill". A series of reference trades create a series of "child fills", or a stream of executions. Note that each SIP-reported trade is only referenced once in each stream (and all concurrent streams in the ATS reference each SIP-reported trade once). The ATS references SIP-reported trades in real-time as they are reported in succession (subject to the filtering logic described in Part III, Item 23, below). The time between SIP-reported trades in a relevant security will correlate to the time between child fills in a stream. (This refers to time between SIP-reported trades resulting from, for example, illiquid stocks. To the extent that there are malfunctions or other issues with the SIP that result in time gaps, the procedures set forth in Part III, Item 20, below will be applied). In the event that there is no SIP-reported trade after the match is formed, the orders will remain matched but there will be no child fills, and therefore no stream (i.e., a match can exist without a stream).

To illustrate how child fills are generated in a stream, for a match at an LTR of 30%, the fill per reference trade (for each order in the stream) is as follows:

Reference Trade 1: SIP-reported Trade of 1,000 @ \$36 would result in Child Fill 1 of 300 @ \$36

Reference Trade 2: SIP-reported Trade of 500 @ \$35.995 would result in Child Fill 2 of 150 @ \$35.995

Reference Trade 3: SIP-reported Trade of 1000 @ \$36.01 would result in Child Fill 3 of 300 @ \$36.01

A stream will continue uninterrupted providing "child fills" as long as both orders remain marketable (i.e., the orders' limit prices are priced at or through the contra-side NBBO), have quantity remaining, and have not been cancelled.

The only exception to an LTR governing fills is when two LS orders match. When two LS orders match, they will execute a block trade for the largest quantity possible (i.e., the smaller quantity of the two orders matched). The price of the block trade will be set in accordance with the limit price and peg instructions for the two relevant LS orders (but in no event will fall outside of the NBBO or violate either order's limit price). Peg instructions (see Part III, Item 11c under "Peg Order Instructions for LS Orders") are applicable only to LS orders and are used (with limit prices) to determine compatibility for an LS-LS match and the price of any resulting block trade.

The two examples below show the impact on a pre-existing stream involving one LS order and a non-LS order when a second LS order on the contra-side of the first LS order enters the ATS. For illustrative purposes, the examples assume that the two LS orders are compatible at the midpoint of the prevailing NBBO.

In the first scenario (Example 6), a stream involving an LS order and a non-LS order is broken by an incoming contra-side LS order with a size greater than or equal to the remaining quantity of the first LS order. In no other circumstances would a stream be broken by an incoming order. In the second scenario (Example 7), the stream involving the LS order and non-LS order continues even after the second LS order matches and executes a block trade against the first LS order, because the first LS order has residual quantity after the block trade.

**Example 6 – LS / Compatible LTR / LS Contra completes the LS:**

Order 1 is a buy order for 40,000 shares in the LS Order Type.

Order 2 is a sell order for 50,000 shares in the 15% Order Type.

Orders 1 and 2 will be matched at 15% to participate in Stream 1, and Order 1 will have a residual LTR of Infinite% in the order book resting simultaneously.

Order 3 is an incoming sell order for 50,000 shares in the LS Order Type.

Order 1 and Order 3 will be matched to participate in Stream 2. Stream 2 will be comprised of a single block trade for the residual of Order 1's size at the then-current NBBO midpoint.

Stream 1 (Order 1 & Order 2) will end (because Order 1 is completed by Order 3) and Order 3's and Order 2's residual quantities will return to the ATS order book.

**Example 7 – LS / Compatible LTR / LS Contra does not complete the LS:**

Order 1 is a buy order for 100,000 shares in the LS Order Type.

Order 2 is a sell order for 50,000 shares in the 15% Order Type.

Orders 1 and 2 will be matched at 15% to participate in Stream 1, and Order 1 will have a residual LTR of Infinite% in the order book resting simultaneously.

Order 3 is a sell order for 50,000 shares in the LS Order Type.

Order 1 and Order 3 will trade a block for Order 3's size of 50,000 shares at the then-current midpoint NBBO.

Stream 1 (Order 1 & Order 2) will continue referencing SIP-reported trades.

#### Order Modifications and Cancellations

All firm and conditional orders can be modified or canceled at any time.

For a firm or conditional order resting on the ATS order book, modifications to the Order Type, size, or limit price (which impacts marketability) will not result in a new timestamp for prioritization purposes, but may impact the order's priority status based on the modified parameters (in accord with the logic set forth in the Prioritization section).



For an order in a match, modifications will not impact the match or stream unless: (i) the limit price is changed and renders the order unmarketable (i.e., the order is no longer priced to at least the contra-side NBBO); or (ii) the LTR is changed (i.e., Order Type changes or changes to the LTR rate for Custom orders) such that the new LTR range does not overlap with the contra-side order's LTR range.

In the event of a PURE ATS or market-triggered trading stoppage, all orders will be cancelled back to Subscribers.

#### TIF/Order Instructions

The ATS does not support post-only orders or route to other trade centers.

Day, Immediate or Cancel (IOC), and the ATS's streaming analog Stream or Kill (SOK) are the only TIF order instructions supported by the ATS.

The IOC TIF can only be applied to the LS Order Type, and any other Order Type using the IOC TIF is rejected. The Day TIF may be applied to any Order Type.

SOK represents a specific PURE ATS TIF order instruction where a Stream or Kill (“SOK”) order is accepted if a contra-side order is resting on the order book and is compatible with the SOK order. If the contra order to the SOK order is not resting on the ATS order book, the SOK order will be cancelled immediately. If accepted, the SOK order is immediately matched with its compatible contra-side order. If the order is not completed for any reason, it will be cancelled back to the Subscriber rather than rest in the order book.

Example 8 – SOK / Contra is resting and meets the LTR:

Order 1 is a resting sell order in the 15% Order Type (min. of 5%, max. of 15%) for 10,000 shares.

Order 2 is a SOK buy order in the 15% Order Type (min. of 5%, max. of 15%) for 10,000 shares. Because Order 1 and Order 2 have overlapping LTR ranges, Order 2 will be matched with Order 1.

Example 9 – SOK / Contra is resting and does not meet the LTR:

Order 1 is a resting sell order in the Custom Order Type, 1-4% LTR for 10,000 shares.

Order 2 is a SOK buy order in the 15% Order Type (min. of 5%, max. of 15%) for 10,000 shares. Because Order 1 and Order 2 do not have overlapping LTR ranges, Order 2 will be cancelled back and Order 1 will continue to rest.

Example 10 – SOK / Contra is resting and meets the LTR, but Quantity cannot complete:

Order 1 is a resting sell order in the 15% Order Type (min. of 5%, max. of 15%) for 10,000 shares.

Order 2 is a SOK buy order in the 15% Order Type (min. of 5%, max. of 15%) for 50,000 shares. Because Order 1 and Order 2 have overlapping LTR ranges, Order 2 will be matched with Order 1.

After Order 1 is completed, if there is a contra-side order on the ATS order book that is compatible with Order 2, the two orders will be matched. If there is no compatible contra-side order resting on the ATS order book, the remaining 40,000 shares of Order 2 will be cancelled back to the Subscriber.



### Part III: Manner of Operations

#### Item 14: Counter-Party Selection

- a. Can orders or trading interest be designated to interact or not interact with certain orders or trading interest in the NMS Stock ATS (e.g., designated to execute against a specific Subscriber's orders or trading interest or prevent a Subscriber's order from executing against itself)?

Yes

If yes, explain the counter-party selection procedures, including how counter-parties can be selected, and whether the designations affect the interaction and priority of trading interest in the ATS.

Counter-parties can be limited using certain order instructions accepted by the ATS. Those order instructions are: (i) HMMP (Human Matched Machine Processed); (ii) PRO (Pre-Routing Optimizer); and (iii) self-trade prevention. The order instructions are sent by the Subscriber or by the Subscriber's customer, as described below.

The HMMP order instruction enables a Subscriber to limit its counter-parties to firm orders in the ATS sent by the Subscriber. This includes orders that the Subscriber has sent separately over time, or contemporaneously. Using the HMMP order instruction, for example, a Subscriber with compatible orders can send the orders to the ATS knowing they will only match with the orders the Subscriber sent. Use of HMMP is a Subscriber decision and, other than limiting the universe of eligible counter-parties, the orders (and any match) remain subject to the same ATS priority and matching logic described in Part III, Item 7.

The PRO order instruction is a functionality provided by the ATS to its Subscribers. The functionality enables a Subscriber to permit its customer to send directed orders to the ATS in which the directed order's potential counter-parties are limited to that Subscriber's inventory on the ATS (i.e., the directed order will only match with an order sent to the ATS through the same Subscriber). All orders with the PRO order instruction are automatically designated as IOC (in the case of an LS Order Type) or SOK. Use of a PRO order instruction is both a customer and Subscriber decision and, other than limiting the universe of eligible counter-parties, the orders (and any match) remain subject to the same ATS priority and matching logic described in Part III, Item 7.

PURE ATS also offers Subscribers a self-match prevention modifier that allows a Subscriber to prevent executions with other firm or conditional orders from that Subscriber in the ATS.

Subscribers can apply this modifier at different levels of granularity (e.g., at the Subscriber or Subscriber's customer level; the latter would prevent orders from a Subscriber's customer from interacting with other orders in the ATS from that customer). ~~This modifier does not prevent a Subscriber from trading against a customer order.~~

PURE ATS does not segment flow; only Subscribers and their customers can limit order interactions by using either the HMMP instruction, PRO instruction, or the self-match prevention.

In addition to limiting counter-parties, Subscribers can also choose to restrict (or not restrict) any order from interacting with contra-side conditional orders.

All of the above order instructions can be sent by the Subscriber via its FIX connection with PURE ATS in accordance with PURE ATS's FIX specifications (available to all Subscribers).