

*ATS-N Part III Item 9a*

*VWAP Block Orders:*

The VWAP Block order type allows subscribers to submit conditional trading interest that, if “firmed up” and anchored, will execute at the VWAP of an agreed to time period.

*Manner of Order Entry/Conditional Trading Interest.* Subscribers may submit conditional VWAP Block orders (such orders, “Conditional VWAP Block Orders”) starting at 7:30 a.m. ET. Conditional VWAP Block Orders are eligible to generate and receive VWAP Block Invites following the ATS’s receipt of the Opening Trade Report for the relevant security (as defined at Part III Item 10).

Conditional VWAP Block Orders may include “market” or “limit” pricing instructions. The ATS will reject any Conditional VWAP Block Order that includes pegged pricing instructions. Conditional VWAP Block Orders must include a time-in-force of “Day.” Conditional VWAP Block Orders that include any other time-in-force instruction will be rejected.

Conditional VWAP Block Orders must include a Minimum and Maximum Anchor Time. The “Minimum Anchor Time” designates the minimum (shortest) VWAP calculation period permitted for the order, while the “Maximum Anchor Time” designates the maximum (longest) permitted VWAP calculation period. Minimum and Maximum Anchor Times must be expressed in whole minutes. A Conditional VWAP Block Order’s Minimum Anchor Time must be for at least one (1) minute and may not exceed its Maximum Anchor Time, although a Conditional VWAP Block Order’s Minimum Anchor Time may equal its Maximum Anchor Time. The ATS will cancel a Conditional VWAP Block Order once its Minimum Anchor Time can no longer be satisfied. Conditional VWAP Block Orders may include instructions to not match in a locked market, although such instructions will be ignored. Conditional VWAP Block Orders that include ALO instructions will be rejected.

Conditional VWAP Block Orders must include a Minimum Anchor Quantity instruction. A “Minimum Anchor Quantity” represents the smallest contra order that the Conditional VWAP Block Order will invite to firm-up.

A Conditional VWAP Block Order may include a “Maximum Anchor Time Decay” attribute. A Maximum Anchor Time Decay attribute instructs the ATS to reduce or “decay” the order’s Maximum Anchor Time every minute for the designated decay period or until an Invite is generated, whichever occurs first. The Maximum Anchor Time Decay cannot exceed the difference between an order’s Minimum and Maximum Anchor Times.

*Invitation* In the event of a conditional match between eligible contra-party Conditional VWAP Block Orders, the Conditional VWAP Block Orders will be canceled by the ATS and an invitation will be sent to each originating subscriber inviting each subscriber to send a firm-up order in response thereto (such invitations, “VWAP Block Invites,” such firm orders sent in response thereto, “Firm VWAP Block Orders”). The ATS will not allow Conditional VWAP Block Orders marked “short” to invite if a Regulation SHO circuit breaker is in effect.

For purposes of determining whether to generate a VWAP Block Invite, contraside Conditional

VWAP Block Orders that would be eligible to execute at the midpoint of the prevailing NBBO, and that are otherwise eligible to interact based on the orders' attributes, are considered "eligible." A Conditional VWAP Block Order will only cause a single contra order to generate a VWAP Block Invite. Where multiple eligible contra-party Conditional VWAP Block Orders exist, priority is determined based on the following order: (i) order price; (ii) order size; (iii) maximum anchor time; and (iv) time of entry. The ATS will immediately cancel a Conditional VWAP Block Order once that Conditional VWAP Block Order has generated a VWAP Block Invite.

The VWAP Block Invite sent to the subscriber identifies (x) the "Bespoke Anchor Time" and (y) overlapping order size. The "Bespoke Anchor Time" is the longest permissible overlapping anchor time. A VWAP Block Invite recipient has two (2) seconds (the "Firm-Up Period") in which to submit a "Firm VWAP Block Order." The ATS will cancel any unanchored Firm VWAP Block Order following the expiration of the Firm-Up Period. Subscribers may cancel Firm VWAP Block Orders at any time after submission.

Firm VWAP Block Orders must include market or limit pricing instructions. A Firm VWAP Block Order may include any limit price, although a Firm VWAP Block Order will only anchor if its pricing instruction would allow for an execution at the midpoint of the NBBO at the time of the match.

Firm VWAP Block Orders must contain the same symbol, side, MPID, time-in-force, and Minimum Anchor Quantity as the Conditional VWAP Block Order related to the VWAP Block Invite or the ATS will reject the order. The Firm VWAP Block Order must also include the Bespoke Anchor Time contained in the VWAP Block Invite. The Firm VWAP Block Order quantity must equal or exceed the Minimum Anchor Quantity of the originating Conditional VWAP Block Order.

Where both subscribers to a preliminary match between Conditional VWAP Block Orders submit Firm VWAP Block Orders within the Firm-Up Window (that are not otherwise cancelled prior to matching), and such orders are otherwise eligible to match, the Firm VWAP Block Orders will anchor. As noted above, subscribers may cancel Firm VWAP Block Orders at any time after submission, including post-anchoring.

Anchored Firm VWAP Block Orders will receive the VWAP of the "VWAP Block Time;" *provided*, however, where the VWAP Block Time is less than one (1) minute no execution will be provided and the anchored orders will be cancelled in full. The VWAP Block Time begins once the Firm VWAP Block Orders are anchored and terminates at the earliest of: (i) the end of the Bespoke Anchor Time; (ii) when the VWAP, as calculated from the start of the VWAP Block Time, equals or exceeds the limit price of an anchored Firm VWAP Block Order; (iii) at the time the relevant security becomes subject to a regulatory halt or Market Wide Circuit Breaker (whether such Market Wide Circuit Breaker is Level 1, 2 or 3); (iv) subscriber cancellation of an anchored Firm VWAP Block Order; and (v) where the anchored sell order is marked "short," when a Regulation SHO circuit breaker comes into effect post-anchor. Where any of clauses (i) through (v) applies, the resulting execution price will be the VWAP for the relevant VWAP Block Time (which, for clarity, is deemed to terminate upon any of the events in clauses (i) through (v) occurring). Where there is no execution during the VWAP Block Time, the execution price is the midpoint of the NBBO at the end of the VWAP Block Time; *provided*, however, that if the

midpoint of the NBBO at the end of the VWAP Block Time would violate an order's limit price then both orders will be cancelled without a fill. If the first print during the VWAP Block Time is outside one order's limit price, the anchored Firm VWAP Block Orders are canceled back with no prints (even where the orders had been anchored for longer than a minute). As noted above, the ATS permits Firm VWAP Block Orders to execute at prices outside the prevailing NBBO.

Where an execution occurs prior to the end of the Bespoke Anchor Time, the orders will receive a pro rata execution in proportion to the elapsed Bespoke Anchor Time. By default, such pro rata execution will be rounded up to the nearest round lot; *provided*, however, that where both orders permit mixed or odd lot executions, the execution may be for a mixed or odd lot quantity, as applicable. Following the execution, the unexecuted portion of an anchored Firm VWAP Block Order (if any), is cancelled.

#### *VWAP Sliced Orders:*

*Manner of Order Entry/Conditional Trading Interest.* Subscribers may submit conditional VWAP Sliced orders (such orders, "Conditional VWAP Sliced Orders") starting at 7:30 a.m. ET. Conditional VWAP Sliced Orders are eligible to generate and receive VWAP Sliced Invites following the ATS' receipt of the Opening Trade Report for the relevant security (as defined at Part III Item 10).

Conditional VWAP Sliced Orders may include "market" or "limit" pricing instructions. The ATS will reject any Conditional VWAP Sliced Order that includes pegged pricing instructions. Conditional VWAP Sliced Orders must include a time-in-force of "Day." Conditional VWAP Sliced Orders that include any other time-in-force instruction will be rejected.

Conditional VWAP Sliced Orders must include a Minimum and Maximum Anchor Time. The Minimum Anchor Time for Conditional VWAP Sliced Orders must be at least five (5) minutes. Minimum and Maximum Anchor Times must be expressed in whole minutes. A Conditional VWAP Sliced Order's Minimum Anchor Time may not exceed its Maximum Anchor Time, although a Conditional VWAP Sliced Order's Minimum Anchor Time may equal its Maximum Anchor Time. The ATS will cancel a Conditional VWAP Sliced Order once its Minimum Anchor Time can no longer be satisfied. Conditional VWAP Sliced Orders may include instructions to not match in a locked market, although such instructions will be ignored. Conditional VWAP Sliced Orders that include ALO instructions will be rejected.

Conditional VWAP Sliced Orders must include a Minimum Anchor Quantity instruction.

A Conditional VWAP Sliced Order may include a "Maximum Anchor Time Decay" attribute. The Maximum Anchor Time Decay cannot exceed the difference between an order's Minimum and Maximum Anchor Times.

*Invitation.* In the event of a conditional match between eligible contra-party Conditional VWAP Sliced Orders, the Conditional VWAP Sliced Orders will be canceled by the ATS and an invitation will be sent to each originating subscriber inviting each subscriber to send a firm-up order in response thereto (such invitations, "VWAP Sliced Invites," such firm orders sent in response thereto, "Firm VWAP Sliced Orders"). The ATS will not allow Conditional VWAP Sliced Orders marked "short" to invite if a Regulation SHO circuit breaker is in effect.

For purposes of determining whether to generate a VWAP Sliced Invite, contra-side Conditional VWAP Sliced Orders that would be eligible to execute at the midpoint of the prevailing NBBO, and that are otherwise eligible to interact based on the orders' attributes, are considered "eligible." A Conditional VWAP Sliced Order will only cause a single contra order to generate a VWAP Sliced Invite. Where multiple eligible contra-party Conditional VWAP Sliced Orders exist, priority is determined based on the following order: (i) order price; (ii) order size; (iii) maximum anchor time; and (iv) time of entry. The ATS will immediately cancel a Conditional VWAP Sliced Order once that Conditional VWAP Sliced Order has generated a VWAP Sliced Invite.

The VWAP Sliced Invite sent to the subscriber identifies (x) the "Bespoke Anchor Time" and (y) overlapping order size. The VWAP Sliced Invite recipient has two (2) seconds (the "Firm-Up Period") in which to submit a "Firm VWAP Sliced Order." The ATS will cancel any unanchored Firm VWAP Sliced Order following the expiration of the Firm-Up Period. Subscribers may cancel Firm VWAP Sliced Orders at any time after submission.

Firm VWAP Sliced Orders must include market or limit pricing instructions. A Firm VWAP Sliced Order may include any limit price, although a Firm VWAP Sliced Order will only anchor if its pricing instruction would allow for an execution at the midpoint of the NBBO at the time of the match.

Firm VWAP Sliced Orders must contain the same symbol, side, MPID, time-in-force, and Minimum Anchor Quantity as the Conditional VWAP Sliced Order related to the VWAP Sliced Invite or the ATS will reject the order. The Firm VWAP Sliced Order must also include the Bespoke Anchor Time contained in the VWAP Sliced Invite. The Firm VWAP Sliced Order quantity must equal or exceed the Minimum Anchor Quantity of the originating Conditional VWAP Sliced Order.

Where both subscribers to a preliminary match between Conditional VWAP Sliced Orders submit Firm VWAP Sliced Orders within the Firm-Up Window (that are not otherwise cancelled prior to matching), and such orders are otherwise eligible to match, the Firm VWAP Sliced Orders will anchor. As noted above, subscribers may cancel Firm VWAP Sliced Orders at any time after submission, including post-anchoring.

Once anchored, Firm VWAP Sliced Orders will execute for randomized quantities and times (each, a "slice") that, except as noted below, aggregate to the anchored order quantity and Bespoke Anchor Time. Except as noted below, anchored Firm VWAP Sliced Orders in "liquid" names will receive a minimum of seven (7) executions (that is, they will be executed in seven (7) separate slices), while anchored Firm VWAP Sliced Orders in "illiquid" names will receive a minimum of five (5) executions. The ATS treats as "liquid" any security that, on a rolling twenty (20) trading day basis, exceeded the average number of executions across all NMS stocks. All other securities are considered "illiquid."

Each execution will be for the VWAP of the relevant slice period. For clarity, the VWAP calculation will reset following each slice period although calculations will otherwise be continuous (that is, there is no "pause" between slices). The size of each execution will be for a randomized quantity. In all instances the ATS permits Firm VWAP Sliced Orders to execute at prices outside the prevailing NBBO (that is, each slice may be executed at a price outside the

prevailing NBBO).

Except where one of the following events occurs, the total anchored time for anchored Firm VWAP Sliced Orders will equal the orders' Bespoke Anchor Time: (i) the VWAP, as calculated during the relevant slice period, equals or exceeds the limit price of an anchored Firm VWAP Sliced Order; (ii) the relevant security becomes subject to a regulatory halt or a Market Wide Circuit Breaker (whether such Market Wide Circuit Breaker is Level 1, 2 or 3); (iii) subscriber or Luminex cancellation of an anchored Firm VWAP Sliced Order; or (iv) where the anchored sell order is marked "short," when a Regulation SHO circuit breaker comes into effect post-anchor. Separately, if the first print during a slice period equals or exceeds one order's limit price, the orders will immediately cancel and there will be no execution for that slice period (for clarity, prior slices (executions) will not be impacted). Where there is no print during a slice period the relevant slice will execute at the midpoint of the NBBO.

Where any of the events noted in clauses (i) through (iv) of the immediately foregoing paragraph occurs, there will be an execution for that slice period provided at least thirty (30) seconds of the relevant slice period has elapsed; if thirty (30) seconds have not elapsed then no execution will occur. In both instances any then-unexecuted portion of the order will be cancelled. Previously executed slices will not be impacted.