

SECURITIES AND EXCHANGE COMMISSION  
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November 3, 2014

Joint Industry Plan; BATS Exchange, Inc., BATS Y-Exchange, Inc., Chicago Stock Exchange, Inc., EDGA Exchange, Inc., EDGX Exchange, Inc., Financial Industry Regulatory Authority, Inc., NASDAQ OMX BX, Inc., NASDAQ OMX PHLX LLC, The Nasdaq Stock Market LLC, New York Stock Exchange LLC, NYSE MKT LLC, and NYSE Arca, Inc.; Notice of Filing of Proposed National Market System Plan to Implement a Tick Size Pilot Program On a One-Year Pilot Basis

I. Introduction

Pursuant to Section 11A of the Securities Exchange Act of 1934 (“Act” or “Exchange Act”)<sup>1</sup> and Rule 608 thereunder<sup>2</sup>, notice is hereby given that, on August 25, 2014, NYSE Group, Inc., on behalf of BATS Exchange, Inc., BATS Y-Exchange, Inc., Chicago Stock Exchange, Inc., EDGA Exchange, Inc., EDGX Exchange, Inc., Financial Industry Regulatory Authority, Inc., NASDAQ OMX BX, Inc., NASDAQ OMX PHLX LLC, the Nasdaq Stock Market LLC, New York Stock Exchange LLC, NYSE MKT LLC, and NYSE Arca, Inc. (collectively “SROs” or “Participants”), filed with the Securities and Exchange Commission (“Commission”) a proposed national market system (“NMS”) Plan to Implement a Tick Size Pilot Program (“Plan”). A copy of the proposed Plan, which includes the details of a proposed Tick Size Pilot Program (“Pilot”) is attached as Exhibit A hereto. The Commission is publishing this notice to solicit comments on the proposed Plan and Pilot.

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<sup>1</sup> 15 U.S.C. 78k-1.

<sup>2</sup> 17 CFR 242.608.

## II. Background

On June 24, 2014, the Commission issued an order pursuant to Section 11A(a)(3)(B) of the Act<sup>3</sup> directing the Participants to act jointly in developing and filing with the Commission a NMS plan to implement a pilot program that, among other things, would widen the quoting and trading increment for certain small capitalization stocks as described in the order by August 25, 2014 (“Order” or “Tick Size Pilot Plan Order”).<sup>4</sup> Pursuant to the Order, the SROs filed the proposed Plan, which includes the proposed Pilot as described below.

## III. Description of the Plan

Section III is the statement of purpose of the proposed Plan, along with the information required by Rule 608(a)(4) and (5) under the Act. The remainder of Section III appears exactly as prepared and submitted by the Participants.<sup>5</sup>

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### A. Statement of Purpose

The Participants are filing the proposed Plan in order to implement a pilot program for a one- year pilot period (“Pilot Period”) that, among other things, would widen the quoting and trading increments for certain small capitalization stocks (“Tick Size Pilot Program”). The purpose of the Plan, and the Tick Size Pilot Program it contains, is to assist the Commission, market participants, and the public in studying and assessing the impact of increment conventions on the liquidity and trading of stocks of small capitalization companies. The Plan

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<sup>3</sup> 15 U.S.C. 78k-1(a)(3)(B).

<sup>4</sup> See Securities Exchange Act Release No. 72460, 79 FR 36840 (June 30, 2014).

<sup>5</sup> See Letter from Brendon J. Weiss, Vice President, Intercontinental Exchange, Inc., to Secretary, Commission, dated August 25, 2014 (“Transmittal Letter”).

sets forth proposed procedures for selecting a representative group of stocks of small capitalization companies (“Pilot Securities”) and subjecting groups of those Pilot Securities (“Test Groups”) to various requirements with regards to quoting and trading increments. As set forth in more detail in the Plan, Participants will be required to adopt rules to ensure that Pilot Securities in the Test Groups are quoted and traded in permitted increments.<sup>6</sup>

Selection of Pilot Securities for Inclusion in the Tick Size Pilot Program

Pilot Securities will consist of those NMS common stocks<sup>7</sup> that satisfy the following criteria: (1) A market capitalization of \$5 billion or less on the last day of the Measurement Period,<sup>8</sup> where market capitalization is calculated by multiplying the total number of shares outstanding on such day by the Closing Price<sup>9</sup> of the security on such day; (2) A Closing Price of at least \$2.00 on the last day of the Measurement Period; (3) A Closing Price on every trading day during the Measurement Period that is not less than \$1.50; (4) A Consolidated Average Daily Volume (“CADV”) during the Measurement Period of one million shares or less, where the CADV is calculated by adding the single-counted share volume of all reported transactions in the NMS common stock during the Measurement Period and dividing by the total number of

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<sup>6</sup> Participants operating trading centers will be required, pursuant to the Plan, to ensure that Pilot Securities in the Test Groups are quoted and traded in permitted increments. As applicable, members of Participants will be required, pursuant to rules of self-regulatory organizations, to ensure that Pilot Securities in the Test Groups are quoted and traded in permitted increments.

<sup>7</sup> NMS common stock is defined in the Plan as NMS stock that is common stock of an operating company.

<sup>8</sup> Measurement Period is defined in the Plan as the U.S. trading days during the three-calendar-month period ending at least 30 days prior to the effective date of the Pilot Period.

<sup>9</sup> Closing Price is defined in the Plan as the closing auction price on the primary listing exchange, or if not available, then the last regular-way trade reported by the processor prior to 4:00 p.m. ET.

U.S. trading days during the Measurement Period; and (5) A Measurement Period Volume-Weighted Average Price (“Measurement Period VWAP”) of at least \$2.00, where the Measurement Period VWAP is determined by calculating the VWAP of the NMS common stock for each U.S. trading day during the Measurement Period, summing the daily VWAP across the Measurement Period, and dividing by the total number of U.S. trading days during the Measurement Period.<sup>10</sup>

The Participants believe that the above criteria will result in the selection of those stocks that are most likely to benefit from a larger tick size because such stocks will tend to have higher average effective spreads. Additionally, the criteria should help to ensure that those stocks most likely to fall below \$1.00 during the Pilot Period are not included in the Tick Size Pilot Program.<sup>11</sup>

The Participants have decided not to include any NMS common stock that has its initial public offering within six months of the start of the Pilot Period. Such stocks will not have the full set of data required to be collected under the Plan for the six-month period before the start of the Tick Size Pilot Program. The Participants believe that the value of subjecting such stocks to the quoting and trading requirements of the Plan is diminished because market participants will not be able to analyze the effects of the quoting and trading requirements against a sufficient baseline.

Once the complete list of Pilot Securities is determined, the Participants will select, by means of a stratified random sampling process, the Pilot Securities to be placed into the three

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<sup>10</sup> For purposes of the CADV and Measurement Period VWAP calculations, U.S. trading days during the Measurement Period with early closes will be excluded.

<sup>11</sup> While the criteria are designed to avoid selecting an NMS common stock likely to fall below \$1.00, a Pilot Security that falls below \$1.00 during the Pilot Period will remain in the Tick Size Pilot Program.

Test Groups. Those Pilot Securities not placed into the three Test Groups will constitute the Control Group. To effect the stratified random sampling, the Pilot Securities will be categorized based on price, market capitalization, and trading volume, and each of those three categories will be further subdivided into low, medium, or high subcategories.<sup>12</sup> As a result, the Pilot Securities will be grouped into a total of 27 categories.

The Tick Size Pilot Plan Order called for the selection of Pilot Securities by means of a stratified random sampling process with the Pilot Securities categorized based on only price and market capitalization.<sup>13</sup> The Plan also requires categorization by trading volume. The Participants believe that the addition of the trading volume category will create more detailed groups of Pilot Securities that will, in turn, lead to a diverse set of stocks selected for inclusion into each Test Group. The Participants believe that the more detailed groups will aid in the assessment process described below by permitting the Commission, market participants, and the public to review the effects of the quoting and trading increment requirements on stocks with a variety of characteristics.

A random sample of Pilot Securities from each of the 27 categories will be placed into the three Test Groups in a number proportional to the category's size relative to the population of Pilot Securities. So, for example, if the category consisting of high priced, high market capitalization, and medium trading volume Pilot Securities contained 5% of the Pilot Securities, that category would make up 5% of each Test Group. Further, a primary listing market's stocks will be selected from each category and included in the three Test Groups in the same proportion as that primary listing market's stocks comprise each category of Pilot Securities.

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<sup>12</sup> Low, medium, and high subcategories will be established by dividing the categories into three parts, each containing a third of the population.

<sup>13</sup> See Tick Size Pilot Plan Order at 36844.

Each Test Group will consist of 400 Pilot Securities and the Control Group will consist of the remaining Pilot Securities. The Participants believe that including 400 Pilot Securities in each Test Group will allow each Test Group to be statistically large enough to generate data to reliably test for the effects of a larger tick size. Additionally, if any Pilot Securities need to be removed from the data analysis due to unforeseen events, the Participants believe that including 400 Pilot Securities in each Test Group will ensure that the data on the remaining Pilot Securities will be sufficient to complete the required assessments.

Each primary listing exchange will make publicly available for free on its website a list of those Pilot Securities listed on that exchange and included in the Control Group and each Test Group. The list will be adjusted for ticker symbol changes and relevant corporate actions and will contain the data specified in Appendix A to the Plan.

#### Control and Test Groups' Increment Conventions and Trade-at Restrictions

During the Pilot Period, the Control Group and Test Groups will be subjected to quoting and trading increment requirements designed to allow the Commission, market participants, and the public to assess the effect of pricing increment decimalization on small capitalization companies.

Pilot Securities in the Control Group may be quoted and traded at any price increment that is currently permitted.<sup>14</sup> Maintaining the Control Group with the current quoting and trading increments will provide a baseline to analyze the economic effects of the wider quoting and trading increments required by the Test Groups.

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<sup>14</sup> Consistent with Rule 612(b) of Regulation NMS, bids or offers, orders, or indications of interest priced less than \$1.00 per share for Pilot Securities in the Control Group may be displayed, ranked, or accepted in \$0.0001 increments.

Pilot Securities in Test Group One will be quoted in \$0.05 minimum increments but may continue to trade at any price increment that is currently permitted. Participants will adopt rules prohibiting Participants or any member of a Participant from displaying, ranking, or accepting from any person any displayable and non-displayable bids or offers, orders, or indications of interest in any Pilot Security in Test Group One in price increments other than \$0.05. However, orders priced to execute at the midpoint and orders entered into a Participant-operated retail liquidity program may be ranked and accepted in increments of less than \$0.05.

Pilot Securities in Test Group Two will be subject to the same quoting requirements as Test Group One, along with the applicable quoting exceptions. In addition, Pilot Securities in Test Group Two may only be traded in \$0.05 minimum increments. Participants will adopt rules prohibiting trading centers<sup>15</sup> operated by Participants and members of Participants from executing orders in any Pilot Security in Test Group Two in price increments other than \$0.05.

The \$0.05 minimum trading increment will apply to brokered cross trades.<sup>16</sup> Pilot Securities in Test Group Two may trade in increments less than \$0.05 under the following circumstances:

(1) Trading may occur at the midpoint between the National Best Bid and the National Best Offer (“NBBO”) or the midpoint between the best protected bid and the best protected offer;

(2) Retail Investor Orders<sup>17</sup> may be provided with price improvement that is at least \$0.005 better than the best protected bid or the best protected offer; and

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<sup>15</sup> Trading center is defined in the Plan as having the same meaning as that provided in Rule 600(b)(78) of Regulation NMS under the Exchange Act.

<sup>16</sup> A brokered cross trade is defined in the Plan as a trade that a broker-dealer that is a member of a Participant executes directly by matching simultaneous buy and sell orders for a Pilot Security.

(3) Negotiated Trades<sup>18</sup> may trade in increments less than \$0.05.

Pilot Securities in Test Group Three will be subject to the same quoting and trading requirements as Test Group Two, along with the applicable quoting and trading exceptions. In addition, Pilot Securities in Test Group Three will be subject to a trade-at prohibition. The purpose of the trade-at prohibition is to assess and gather data with respect to the impact of market-wide restrictions on price-matching activity by market participants that are not quoting aggressively or otherwise offering liquidity in Pilot Securities at competitive prices. Toward that

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<sup>17</sup> A Retail Investor Order is defined in the Plan as an agency order or a riskless principal order originating from a natural person, provided that, prior to submission, no change is made to the terms of the order with respect to price or side of market and the order does not originate from a trading algorithm or any other computerized methodology. Such orders include those retail orders entered into Participant-operated retail liquidity programs. The Participant that is the Designated Examining Authority of a member of a Participant operating a trading center executing a Retail Investor Order will require such trading center to sign an attestation that substantially all orders to be executed as Retail Investor Orders will qualify as such under the Plan.

<sup>18</sup> A Negotiated Trade is defined in the Plan as: (i) a Benchmark trade, including, but not limited to, a Volume-Weighted Average Price trade or a Time-Weighted Average Price trade, provided that, if such a trade is comprised of two or more component trades, each component trade complies with the quoting and trading increment requirements of the Plan, or with an exception to such requirements, or (ii) a Pilot Qualified Contingent Trade. A Benchmark Trade is defined in the Plan as the execution of an order at a price that was not based, directly or indirectly, on the quoted price of a Pilot Security at the time of execution and for which the material terms were not reasonably determinable at the time the commitment to execute the order was made. A Pilot Qualified Contingent Trade is defined in the Plan as a transaction consisting of two or more component orders, executed as agent or principal, where: (1) at least one component order is in an NMS common stock; (2) all components are effected with a product or price contingency that either has been agreed to by the respective counterparties or arranged for by a broker-dealer as principal or agent; (3) the execution of one component is contingent upon the execution of all other components at or near the same time; (4) the specific relationship between the component orders (*e.g.*, the spread between the prices of the component orders) is determined at the time the contingent order is placed; (5) the component orders bear a derivative relationship to one another, represent different classes of shares of the same issuer, or involve the securities of participants in mergers or with intentions to merge that have been announced or since cancelled; and (6) the transaction is fully hedged (without regard to any prior existing position) as a result of the other components of the contingent trade.

end, the trade-at prohibition of the Plan, operating in conjunction with applicable exceptions, generally will condition the ability of a trading center to execute at a protected quotation on that trading center's contemporaneous display of liquidity, either via a processor<sup>19</sup> or an SRO quotation feed<sup>20</sup>, at that, or a superior, price level, thereby discouraging passive price-matching and incentivizing aggressive quoting. Under the trade-at prohibition, the Plan will (1) prevent a trading center that was not quoting from price-matching protected quotations and (2) permit a trading center that was quoting at a protected quotation to execute orders at that level, but only up to the amount of its displayed size.

The Commission's Tick Size Pilot Plan Order stated that the trade-at prohibition "is intended to prevent price matching by a trading center not displaying the NBBO."<sup>21</sup> Accordingly, the Plan seeks to protect displayed liquidity and to prevent passive-price matching. Based on their experience observing price competition on the market centers that they regulate and market-wide, the Participants believe that the most appropriate and workable reference point for formulating a restriction on price-matching is the standard of a "protected quotation" rather than "the NBBO." The "protected quotation" standard would appear to have the following policy, structural, and operational advantages.

First, the "protected quotation" standard would give broader protection to aggressively displayed quotes, in that the "NBBO" is limited to the single best order in the market, while the "protected quotation" standard encompasses the aggregate of the most aggressively priced

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<sup>19</sup> Processor is defined in the Plan as the single plan processor responsible for the consolidation of information for an NMS stock pursuant to Rule 603(b) of Regulation NMS under the Exchange Act.

<sup>20</sup> SRO quotation feed is defined in the Plan as any market data feed disseminated by a self-regulatory organization.

<sup>21</sup> See Tick Size Pilot Plan Order at 36845.

displayed liquidity on all trading centers.<sup>22</sup> Additionally, the Participants believe that not only should the best protected quotations be protected, but also that all protected quotations should be protected, as such protected quotations could likewise be the basis for passive price-matching.

Second, the only other difference between the NBBO and the best protected quotations is that the NBBO would include manual quotations. The Commission has previously recognized that manual quotations are not within the scope of liquidity that should be protected for Rule 611 of Regulation NMS (“Rule 611”) (i.e., trade-through) purposes. Based on their experience implementing Rule 611 and other provisions related to intermarket display and price priority, the Participants believe that the scope of the trade-at prohibition in the Plan should be appropriately aligned with that of Regulation NMS.

Third, Participants believe that the trend, in terms of the design and development of systems that perform matching and routing functions, is to reference “protected quotations” rather than “the NBBO” and that the approach of the Plan would therefore provide a more workable approach for the assessment contemplated by the Plan. Most market centers today track the market center's view of protected quotations in its automated execution systems in order to comply with Rule 611. Changing such view for trade-at purposes to the market center's view of the NBBO or to the NBBO as displayed by the processor would incur additional development time, operational complexity and risk, and potentially create unintended conflicts between the logic designed to comply with Rule 611 and trade-at compliance logic.

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<sup>22</sup> See 17 CFR. § 242.600(b)(42). When two or more market centers transmit to the plan processor identical bids or offers for an NMS security, the best bid or best offer is determined by ranking the identical bids or offers by size and then time. As a result, while two market centers may display identical prices, only one market center will display the national best bid or national best offer.

Fourth, from a textual and implementation perspective, the Participants believe that achieving as great a degree of definitional simplicity is imperative. Specifically, the Participants believe that the reference to “the NBBO,” with continued qualifications excluding manual quotations, would produce an approach that is unnecessarily more complex than grounding the trade-at prohibition in the more workable “protected quotation” standard.

In any event, the Plan, as demonstrated below, will prevent those trading centers not displaying at the best protected quotations from passively price matching those competitive quotations. If a trading center is not displayed at a best protected quotation, the trading center will not be able to execute any orders at that price level without first executing against that displayed liquidity. Accordingly, the Participants believe that the approach of the Plan is well-grounded in the discretion of Rule 611 and directly aligned with both the language and logic of the Commission's Tick Size Pilot Plan Order.

In accordance with the above reasoning, the Plan provides that Participants will adopt rules prohibiting trading centers operated by Participants and members of Participants from executing a sell order for a Pilot Security at the price of a protected bid or from executing a buy order for a Pilot Security at the price of a protected offer unless such execution falls within an exception set forth below.

Trading centers will be permitted to execute an order for a Pilot Security at a price equal to a protected bid or protected offer under the following circumstances:

(1) The order is executed by a trading center that is displaying a quotation, via either a processor or an SRO quotation feed,<sup>23</sup> at a price equal to the traded-at protected quotation but

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<sup>23</sup> The Participants believe that a trading center displaying a quotation either via a processor, as a protected quotation, or via an SRO quotation feed, as a quotation below

only up to the trading center's full displayed size. Where the quotation is displayed through a national securities exchange, the execution at the size of the order must occur against the displayed size on that national securities exchange. Where the quotation is displayed through the Alternative Display Facility or another facility approved by the Commission that does not provide execution functionality, the execution at the size of the order must occur against the displayed size in accordance with the rules of the Alternative Display Facility or such approved facility;

(2) The order is of Block Size;<sup>24</sup>

(3) The order is a Retail Investor Order executed with at least \$0.005 price improvement;

(4) The order is executed when the trading center displaying the protected quotation that was traded at was experiencing a failure, material delay, or malfunction of its systems or equipment;

(5) The order is executed as part of a transaction that was not a “regular way” contract;<sup>25</sup>

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the trading center’s top-of-book, should be able to avail themselves of this exception. As detailed in Example 3 below, a trading center would be able to trade at the price of a protected quotation against its depth-of- book displayed quotations in order to promote the display of protected quotations at a more aggressively-priced quotation.

<sup>24</sup> Block Size is defined in the Plan as having the same meaning as that provided in Rule 600(b)(9) of Regulation NMS under the Exchange Act.

<sup>25</sup> For purposes of the trade-at prohibition, “regular way” contract has the same meaning as the term is used in Rule 611(b). In the Regulation NMS Adopting Release, the Commission stated that “regular way” refers to “bids, offers, and transactions that embody the standard terms and conditions of a market.” *See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37537 n. 326 (June 29, 2005).*

(6) The order is executed as part of a single-priced opening, reopening, or closing transaction by the trading center;

(7) The order is executed when a protected bid was priced higher than a protected offer in the Pilot Security;

(8) The order is identified as an Intermarket Sweep Order;

(9) The order is executed by a trading center that simultaneously routed Trade-at Intermarket Sweep Orders (“Trade-at ISOs”)<sup>26</sup> to execute against the full displayed size of any protected quotation in the Pilot Security that was traded at;

(10) The order is executed as part of a Negotiated Trade;

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A Trade-at ISO is defined in the Plan as a limit order for a Pilot Security that meets the following requirements: (1) When routed to a trading center, the limit order is identified as an Intermarket Sweep Order; and (2) Simultaneously with the routing of the limit order identified as an Intermarket Sweep Order, one or more additional limit orders, as necessary, are routed to execute against the full displayed size of any protected bid, in the case of a limit order to sell, or the full displayed size of any protected offer, in the case of a limit order to buy, for the Pilot Security with a price that is equal to the limit price of the limit order identified as an Intermarket Sweep Order. These additional routed orders also must be marked as Intermarket Sweep Orders. The Tick Size Pilot Plan Order provides for an ISO exception to the trade-at prohibition that, as described above, involves routing ISOs to execute against the full displayed size of protected quotations. See Tick Size Pilot Plan Order, 79 FR at 36846. From the perspective of the sending market, and as described in the Tick Size Pilot Plan Order, this usage of an ISO differs from the definition of ISO in Rule 600(b)(30) of Regulation NMS in that the ISOs, for purposes of the trade-at prohibition, need to be routed to execute against protected quotations with a price that is *equal* to the limit price of the order routed to a protected quotation. *See id.* at n. 65. For purposes of the trade-through prohibition in Rule 611 of Regulation NMS, Rule 600(b)(30) provides that ISOs need to be routed to execute against those protected quotations with a price that is *superior* to the limit price of the order routed to a protected quotation. To account for the differences in ISO usage, the Participants have defined ISOs routed to take advantage of the exception to the trade-at prohibition as Trade-at ISOs. From the perspective of the receiving market, the receipt of an ISO routed to comply with the exception to the trade-at prohibition is no different from the receipt of an ISO routed to comply with the exception to the trade-through prohibition; in both cases, the ISO designation permits the receiving market to execute the ISO at its limit price without regard to prices on away markets.

(11) The order is executed when the trading center displaying the protected quotation that was traded at had displayed, within one second prior to execution of the transaction that constituted the trade-at, a best bid or best offer, as applicable, for the Pilot Security with a price that was inferior to the price of the trade-at transaction;

(12) The order is executed by a trading center which, at the time of order receipt, the trading center had guaranteed an execution at no worse than a specified price (a “stopped order”), where: a. The stopped order was for the account of a customer; b. The customer agreed to the specified price on an order-by-order basis; and c. The price of the trade-at transaction was, for a stopped buy order, equal to the national best bid in the Pilot Security at the time of execution or, for a stopped sell order, equal to the national best offer in the Pilot Security at the time of execution; or

(13) The order is for a fractional share of a Pilot Security, provided that such fractional share order was not the result of breaking an order for one or more whole shares of a Pilot Security into orders for fractional shares or was not otherwise effected to evade the requirements of the trade-at prohibition or any other provisions of the Plan.<sup>27</sup>

The first exception to the trade-at prohibition is designed to address the intended scope of the trade-at prohibition, as discussed above and illustrated in the examples below. The Participants believe that a trading center displaying, either via a processor or an SRO quotation feed, at a protected quotation should only be able to execute against the full displayed size at that price, and should not be able to trade any hidden size at that price without complying with one of the exceptions detailed above. Without such a limitation, trading centers and market participants

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<sup>27</sup> A trading center complying with one of these exceptions under the trade-at prohibition must still ensure that any execution complies with Rule 611.

may not be incentivized to display quotations for a significant number of shares of Pilot Securities, thus circumventing the purposes of the trade-at prohibition. Therefore, to incentivize the public display of liquidity, only those orders-and those portions of such orders that are fully displayed, either via a processor or an SRO quotation feed, on a trading center will be executable against a contra-side order at the price of a protected quotation before requiring a trading center to comply with another exception to the trade-at prohibition.

The Tick Size Pilot Order included the third and fourth exceptions to the trade-at prohibition.<sup>28</sup> The Participants, however, determined not to include in the Plan the significant price improvement exception set out in the Tick Size Pilot Plan Order. Because of the applicable trading and quoting increments, an execution of an order at a price superior to a protected quotation will necessarily result in significant price improvement. Therefore, the Participants believe the significant price improvement exception is superfluous.

The fifth through thirteenth exceptions apply the trade-through exceptions found in Rule 611(b) to the trade-at prohibition. The Participants believe that the rationales underlying the trade-through exceptions apply to the trade-at prohibition as well. Consistent with this belief, the Participants have included the trade-through exceptions as exceptions to the trade-at prohibition, subject to a few minor changes to account for the difference between the trade-at prohibition and the trade-through prohibition.

Finally, the fourteenth exception implements an exception for fractional shares, but only with respect to situations where the fractional shares were not the result of breaking an order for one or more whole shares into orders for fractional shares. Due to the difficulties of routing fractional shares to comply with the trade-at prohibition, and because the execution of fractional

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<sup>28</sup> See Tick Size Pilot Plan Order at 36845-46, n. 63, 64.

shares will represent a negligible portion of overall trading, the Participants believe that fractional share orders should be excepted from the trade-at prohibition.

To illustrate the operation of the trade-at prohibition, the Participants have included the following examples:

### **Example 1**

The NBBO for Pilot Security ABC is \$20.00 x \$20.10. Trading Center 1 is displaying a 100-share protected bid at \$20.00. Trading Center 2 is displaying a 100-share protected bid at \$19.95. There are no other protected bids. Trading Center 3 is not displaying any shares in Pilot Security ABC but has 100 shares hidden at \$20.00 and has 100 shares hidden at \$19.95. Trading Center 3 receives an incoming order to sell for 400 shares. To execute the 100 shares hidden at \$20.00, Trading Center 3 must respect the protected bid on Trading Center 1 at \$20.00. Trading Center 3 must route a Trade-at Intermarket Sweep Order to Trading Center 1 to execute against the full displayed size of the protected bid, at which point Trading Center 3 is permitted to execute against the 100 shares hidden at \$20.00. To execute the 100 shares hidden at \$19.95, Trading Center 3 must respect the protected bid on Trading Center 2 at \$19.95. Trading Center 3 must route a Trade-at Intermarket Sweep Order to Trading Center 2 to execute against the full displayed size of the protected bid, at which point Trading Center 3 is permitted to execute against the 100 shares hidden at \$19.95.

### **Example 2**

The NBBO for Pilot Security ABC is \$20.00 x \$20.10. Trading Center 1 is displaying a 100-share protected bid at \$20.00. Trading Center 2 is displaying a 100-share protected bid at \$20.00. Trading Center 2 also has 300 shares hidden at \$20.00 and has 300 shares hidden at \$19.95. Trading Center 3 is displaying a 100-share protected bid at \$19.95. There are no other

protected bids. Trading Center 2 receives an incoming order to sell for 900 shares. Trading Center 2 may execute 100 shares against its full displayed size at the protected bid at \$20.00. To execute the 300 shares hidden at \$20.00, Trading Center 2 must respect the protected bid on Trading Center 1 at \$20.00. Trading Center 2 must route a Trade-at Intermarket Sweep Order to Trading Center 1 to execute against the full displayed size of Trading Center 1's protected bid, at which point Trading Center 2 is permitted to execute against the 300 shares hidden at \$20.00. To execute the 300 shares hidden at \$19.95, Trading Center 2 must respect the protected bid on Trading Center 3 at \$19.95. Trading Center 2 must route a Trade-at Intermarket Sweep Order to Trading Center 3 to execute against the full displayed size of Trading Center 3's protected bid, at which point Trading Center 2 is permitted to execute against the 300 shares hidden at \$19.95.

### **Example 3**

The NBBO for Pilot Security ABC is \$20.00 x \$20.10. Trading Center 1 is displaying a 100-share protected bid at \$20.00. Trading Center 1 is also displaying 300 shares at \$19.90 on an SRO quotation feed. Trading Center 2 is displaying a 100-share protected bid at \$19.95. Trading Center 2 is also displaying 200 shares on an SRO quotation feed at \$19.90 and has 200 shares hidden at \$19.90. Trading Center 3 is displaying a 100-share protected bid at \$19.90. There are no other protected bids. Trading Center 2 receives an incoming order to sell for 700 shares. To execute against its protected bid at \$19.95, Trading Center 2 must comply with the trade-through restrictions in Rule 611 and route an intermarket sweep order to Trading Center 1 to execute against the full displayed size of Trading Center 1's protected bid at \$20.00. Trading Center 2 is then permitted to execute against its 100-share protected bid at \$19.95. Trading Center 2 may then execute 200 shares against its full displayed size at the price of Trading Center 3's protected bid. To execute the 200 shares hidden at \$19.90, Trading Center 2 must

respect the protected bid on Trading Center 3 at \$19.90. Trading Center 2 must route a Trade-at Intermarket Sweep Order to Trading Center 3 to execute against the full displayed size of Trading Center 3's protected bid, at which point Trading Center 2 is permitted to execute against the 200 shares hidden at \$19.90. Trading Center 2 does not have to respect Trading Center 1's displayed size at \$19.90 for trade-at purposes because it is not a protected quotation.

#### Collection of Pilot Data

Throughout the Pilot Period, the Participants will collect the data described in Appendix B to the Plan with respect to Pilot Securities. Such data will include:

- (1) Daily market quality statistics of orders by security, order type, original order size (as observed by the trading center), hidden status (as applicable), and coverage under Rule 605 of Regulation NMS;
- (2) Specified data regarding market orders and marketable limit orders;
- (3) Daily number of registered Market Makers;<sup>29</sup> and
- (4) Daily Market Maker participation statistics.

Each Participant that is the Designated Examining Authority of a member of a Participant operating a trading center will require such member to collect and provide to the Designated Examining Authority the data described in subparagraphs (1) and (2) above, subject to the terms and conditions in Appendix B to the Plan. The Participants and each member of a Participant operating a trading center will also be required to collect such data for dates starting six months prior to the Pilot Period through six months after the end of the Pilot Period.

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<sup>29</sup> Market Maker is defined in the Plan as a dealer registered with any self-regulatory organization, in accordance with the rules thereof, as (i) a market maker or (ii) a liquidity provider with an obligation to maintain continuous, two-sided trading interest.

The data will be made publicly available for free on a disaggregated basis by trading center on the websites of the Participants and the Designated Examining Authorities and will be reported by the Participants and the Designated Examining Authorities to the Commission on a monthly basis. The data will be provided on a disaggregated basis by trading center. The data made publicly available will not identify the trading center that generated the data.

Participants will also require each Market Maker to provide to its Designated Examining Authority the data described in Appendix C to the Plan with respect to Pilot Securities, specifically data related to daily Market Maker trading profits. The Designated Examining Authority will aggregate such data, report it to the Commission, and make it publicly available for free on its website on a monthly basis. Such data will also be provided for dates starting six months prior to the Pilot Period through six months after the end of the Pilot Period. The Designated Examining Authority will develop policies and procedures reasonably designed to ensure the confidentiality of the non-aggregated data it receives from Market Makers. The data made publicly available will not identify the Market Makers that generated the data.

Each Participant will make available to the other Participants a list of members designated as Market Makers on that Participant's trading center. Because the data requested will be gathered by a Participant whether or not the member is registered as a Market Maker with that Participant's trading center, each Participant will need the list to determine those members about whom the Participant needs to report data.

#### Assessment of Pilot Data

Within six months after the end of the Pilot Period, the Participants will provide to the Commission and make publicly available a joint assessment of the impact of the Pilot. Such assessment will include:

- (1) An assessment of the statistical and economic impact of an increase in the quoting increment on market quality;
- (2) An assessment of the statistical and economic impact of an increase in the quoting increment on the number of Market Makers;
- (3) An assessment of the statistical and economic impact of an increase in the quoting increment on Market Maker participation;
- (4) An assessment of the statistical and economic impact of an increase in the quoting increment on market transparency;
- (5) An evaluation whether any market capitalization, daily trading volume, or other thresholds can differentiate the results of the above assessments across stocks (*e.g.*, does the quoting increment impact differently those stocks with daily trading volume below a certain threshold);
- (6) An assessment of the statistical and economic impact of the above assessments for the incremental impact of a trading increment and for the joint effect of an increase in a quoting increment with the addition of a trading increment;
- (7) An assessment of the statistical and economic impact of the above assessments for the incremental impact of a trade-at prohibition and for the joint effect of an increase in a quoting increment with the addition of a trading increment and a trade-at prohibition; and
- (8) An assessment of any other economic issues that the Participants believe the Commission should consider in any rulemaking that may follow the Pilot.

Further, Participants may individually submit to the Commission and make publicly available additional supplemental assessments of the impact of the Tick Size Pilot Program.

The Tick Size Pilot Plan Order originally called for the Participants to assess the effect of the quoting and trading increment requirements on Market Maker profitability.<sup>30</sup> The Exchanges believe that Market Makers will be in a better position than the Participants to analyze the effects of the Tick Size Pilot Program on Market Maker profitability. Therefore, the Participants have removed this assessment from the Tick Size Pilot Plan.

B. Governing or Constituent Documents

Not applicable.

C. Implementation of Plan

The initial date of the Tick Size Pilot Program will be no sooner than 180 calendar days following the publication of the Commission's Approval Order of the Plan in the Federal Register.

Development and Implementation Phases

The Plan will be implemented as a one-year pilot program.

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<sup>30</sup> See Tick Size Pilot Plan\_Order at 36846.

D. Analysis of Impact on Competition

The proposed Plan does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Exchange Act. The Participants do not believe that the proposed Plan introduces terms that are unreasonably discriminatory for the purposes of Section 11A(c)(1)(D) of the Exchange Act.

E. Written Understanding or Agreements relating to Interpretation of, or Participation in, Plan

The Participants have no written understandings or agreements relating to the interpretation of the Plan. Section II(C) of the Plan sets forth how any entity registered as a national securities exchange or national securities association may become a Participant.

F. Approval of Amendment of the Plan

Not applicable.

G. Terms and Conditions of Access

Section II(C) of the Plan provides that any entity registered as a national securities exchange or national securities association under the Exchange Act may become a Participant by: (1) executing a copy of the Plan, as then in effect; (2) providing each then-current Participant with a copy of such executed Plan; and (3) effecting an amendment to the Plan as specified in Section III(B) of the Plan.

H. Method of Determination and Imposition, and Amount of, Fees and Charges

Not applicable.

I. Method and Frequency of Processor Evaluation

Not applicable

J. Dispute Resolution

The Plan does not include specific provisions regarding resolution of disputes between or among Participants. Section III(C) of the Plan provides for each Participant to designate an individual to represent the Participant as a member of an Operating Committee. No later than the initial date of the Plan, the Operating Committee shall designate one member of the Operating Committee to act as the Chair of the Operating Committee. The Operating Committee shall monitor the procedures established pursuant to the Plan and advise the Participants with respect to any deficiencies, problems, or recommendations as the Operating Committee may deem appropriate. Any recommendation for an amendment to the Plan from the Operating Committee that receives an affirmative vote of at least two-thirds of the Participants, but is less than unanimous, shall be submitted to the Commission as a request for an amendment to the Plan initiated by the Commission under Rule 608.

\* \* \* \* \*

This marks the end of the Statement of Purpose as prepared and submitted by the Participants.

#### IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed Plan, which includes the proposed Tick Size Pilot Program, is consistent with the Act. In the Order, the Commission stated its belief that it was in the public interest for the Participants to develop and file a plan for a proposed tick size pilot, and noted that once filed, such plan would be published for public comment.

In the Order, however, the Commission also pointed out that support for a tick size pilot was not universal, with concerns being raised in particular about the potential costs to investors

of wider minimum tick sizes.<sup>31</sup> In addition, a recent Commission staff paper suggests that there appears to be considerable variability among small capitalization stocks in their trading characteristics, liquidity, and spreads, with some stocks more closely resembling the trading of large capitalization stocks.<sup>32</sup> Accordingly, the Commission generally requests comment on whether there are other market structure initiatives that the Commission should consider to address concerns about the market structure for small capitalization stocks in addition to, or instead of, the proposed Tick Size Pilot Program.

The Order contained certain terms and conditions for a tick size pilot that the Commission preliminarily believed would produce data that would allow the Commission and others to conduct studies on the effect of increased tick size on liquidity, execution quality for investors, volatility, market maker profitability, competition, transparency and institutional ownership. The Commission broadly requests comment on whether the proposed Tick Size Pilot Program filed by the Participants will generate measurable data to allow the Commission and others to conduct such studies.

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<sup>31</sup> See Order at 36843.

<sup>32</sup> See SEC Staff Paper, A characterization of market quality for small capitalization US equities, Charles Collver (September 2014), available at [http://www.sec.gov/marketstructure/research/small\\_cap\\_liquidity.pdf](http://www.sec.gov/marketstructure/research/small_cap_liquidity.pdf). Moreover, recent data seems to indicate that initial public offerings have rebounded since the financial crisis. See, e.g., The Epic Year in Initial Public Offerings, available at <http://blogs.wsj.com/moneybeat/2014/09/25/the-epic-year-in-initial-public-offerings/> (visited on September 29, 2014) (showing that 2014 is on pace for the second biggest year for U.S. listed IPOs by amount since 1995) and Renaissance Capital IPO Center, available at <http://www.renaissancecapital.com/ipohome/press/mediaroom.aspx?market=us> (visited on September 29, 2014) (showing that, for initial public offerings of greater than \$50 million market cap, a 41% increase in issuances, 59% increase in filing activity, and 122% increase in proceeds raised, as compared to similar time period in 2013).

The Commission notes that the Participants have proposed additional details for the Tick Size Pilot Program that were not specified in the Commission's Order. In addition, the Participants have proposed to modify some of the terms and conditions set forth in the Order. The Commission discusses these additions and modifications in more detail below, but also broadly requests comment on them.<sup>33</sup>

**A. General Questions**

The Commission stated in the Order that it preliminarily believed that it should assess, through a short-term pilot program, whether wider minimum tick sizes for small capitalization stocks would enhance market quality to the benefit of market participants, issuers, and U.S. investors. The Commission requests comment on whether the proposed Tick Size Pilot Program would facilitate such an assessment and requests comment on the specific questions set forth below.

- How well does the structure of the proposed Tick Size Pilot Program, generally, facilitate analysis of the tradeoffs associated with increasing the quote increment for certain small capitalization securities? How could the proposed Pilot structure change to better facilitate such analysis? Please provide any other comments on the structure and selection process of the proposed Pilot.
- Does the structure of the proposed Pilot allow for a robust analysis of alternative quote increments in securities, including the determination of thresholds that distinguish stocks that should have different quote increments? How could the structure change to better facilitate such analysis?

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<sup>33</sup> The Commission notes that the Participants described their additions and modifications and rationale in their Transmittal Letter, which is set forth above in Section III.

- What are the anticipated costs for implementing and operating the proposed Pilot? Are any components of the Pilot structure particularly costly? If so, please describe which market participants could be impacted.
- Could investors of the small capitalization securities included in the Pilot be harmed by the widening of quoting and trading increments?
- Is the proposed one-year Pilot Period period too long or too short? Should the Pilot Period be different? Is it appropriate that the proposed Pilot is structured to end before completion of the assessments by the Participants?
- What is the risk of unintended consequences from the Pilot? What might they be? Are these issues that could be tested during the Pilot, or do they raise more fundamental questions about the advisability of the Pilot? Will the Pilot lead to changes in trading behavior by market makers or other market participants?
- As noted above, the Commission preliminarily believes the Pilot would produce data that would allow the Commission and others to conduct studies on the effect of increased tick size on liquidity, execution quality for investors, volatility, market maker profitability, competition, transparency and institutional ownership. Should the Pilot be designed to produce data to allow the Commission and others to conduct studies in other areas? If so, how should the proposed Pilot be changed to accommodate these other studies?

**B. Proposed Selection Process for Pilot Securities**

- In the Order, the Commission set forth the criteria that it preliminarily believed would identify securities that should be included in a proposed Pilot. Are these criteria appropriate and sufficient for selecting securities to be included in the

Pilot? The Commission requests comment on whether small capitalization securities would benefit from the proposed Tick Size Pilot Program and if so, what types of small capitalization securities would benefit most. Should the proposed Tick Size Pilot Program assess different or additional criteria for identifying Pilot Securities? For example, should the market capitalization be higher or lower than \$5 billion? Should the CADV be more or less than one million shares? Should securities other than stocks of operating companies be included in the Plan, such as exchange-traded products?

- The Participants have proposed to exclude securities that have recently completed an initial public offering from the proposed Pilot. Should these securities be included?
- Should the proposed Pilot exclude any other small capitalization securities? For example, should small capitalization securities that are cross-listed in another jurisdiction be excluded from the Pilot?
- Should companies whose securities are included in the Pilot be allowed to opt-out of participating in the Pilot? If so, how should such an opt-out work and what impact would it have on the ability of the Commission and others to analyze the Pilot?
- As noted above, the proposed Tick Size Pilot Program contains different terms and conditions than specified in the Order. In particular, the Participants

proposed to evaluate potential Pilot Securities over a Measurement Period.<sup>34</sup> Is this period sufficient to evaluate and identify potential Pilot Securities?

- With regard to the selection of Pilot Securities, the Participants have proposed to consider two additional elements related to the price of potential Pilot Securities. First, the Participants proposed that the Closing Price on every trading day during the Measurement Period not be less than \$1.50. In addition, Participants proposed that the Measurement Period VWAP be at least \$2.00. Are these additional criteria useful? Are there other criteria related to the price of potential Pilot Securities that should be considered?

**C. Proposed Control and Test Groups**

- The Order specified that there should be three test groups. Would the three proposed test groups provide sufficient information to allow for analysis of quote increments in certain small capitalization stocks? Would different test groups with different criteria better facilitate such an analysis?
- Participants have proposed to include 400 securities per Test Group. The Commission preliminarily believed that 300 securities per Test Group was sufficiently large number to generate statistically reliable data, yet a number small enough to minimize potential disruption to the market. The Commission requests comment on whether the proposed inclusion of 400 securities per Test Group satisfies these goals. If not, what test group size should be required?
- Specifically, please describe whether the size of the three test groups is large enough to draw reliable conclusions from statistical tests of the tradeoffs

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<sup>34</sup> See supra note 8.

associated with increasing the quote increment for certain small securities, including tests that attempt to identify approximate thresholds for changes in the quote increment. Is the control group size large enough to draw reliable conclusions? If not, what size should be required?

- How likely is it that the process for selection will result in three representative test groups that can be compared to each other and the Control Group or matched stocks from the Control Group? How important is it that the three Test Groups be representative and be suitable for comparison with each other and the Control Group? Is the selection plan for the categories with fewer than 10 securities reasonable for allocating potential Pilot Securities among the Test Groups? If not, please specify a more appropriate selection plan and explain how it improves on the Plan.
- With regard to assigning potential Pilot Securities to each Test Group and the Control Group, Participants have proposed to consider the trading volume of a security, in addition to price and market capitalization as specified in the Order. Is this additional criterion reasonable? Are there other criteria that would be useful? Would these additional criteria help to achieve representative samples of Pilot Securities in the Test Groups?
- The Commission designated \$0.05 as the increment to be tested in the proposed Pilot. Is the \$0.05 increment appropriately wide enough to encourage trading and liquidity in small capitalization securities? Should the increment be another amount? If so, please specify that increment and explain why it is preferable.

**i. Test Group One**

- In the Order, the Commission stated that quoting of securities in Test Group One should be in \$0.05 increments but that trading would continue to occur at any price that is permitted today. The Participants proposed to include two quoting exceptions for orders priced to execute at the midpoint and orders entered into a Participant-operated retail liquidity program. Do you agree with these proposed exceptions? Why or why not?

**ii. Test Group Two**

- The Order stated that quoting and trading should be in \$0.05 increments in Test Group Two with three exceptions: (1) trading could occur at the midpoint between the NBBO; (2) retail investor orders could be provided price improvement that is at least \$0.005 better than the NBBO; and (3) certain negotiated trades such as VWAP, TWAP, and qualified contingent trades, could continue at any increment permitted today. In the Order, the Commission noted that it preliminarily believed that Test Group Two should be established to examine the potential impact on displayed liquidity in conjunction with Test Group One. The Commission requests comment on whether the structure of Test Group Two supports this goal. Is Test Group Two necessary for the proposed Pilot?
- The Commission noted that it preliminarily believed that these three exceptions should be allowed so as not to prohibit certain categories of trades that are broadly beneficial to market participants today. The Commission requests comment on

whether these exceptions are necessary. Should there be other exceptions? If so, please describe those exceptions and explain why they are advisable.

- The Participants proposed additional exceptions and terms for Test Group Two. First, the Participants proposed to clarify that the \$0.05 trading increment would apply to brokered cross trades. Is this clarification necessary? Second, the Participants proposed that midpoint trades could occur between the best protected bid and best protected offer, in addition to the NBBO as the Commission Order specified. Should these additional midpoint trades be excepted from the trading increment requirement? Third, the Participants proposed that the price improvement for retail investor orders be calculated against the best protected bid or the best protected offer, rather than the NBBO as the Commission Order specified. Finally, the Participants proposed that qualified contingent trades would not include block size criteria, as specified in the Commission Order. Do you agree with the additional exceptions and terms proposed by the Participants? Why or why not?

### **iii. Test Group Three**

The Order stated that the quoting and trading increments (and the exceptions thereto) in Test Group Three would be the same as Test Group Two, but Test Group Three would include a trade-at requirement. In the Order, the Commission generally described a trade-at requirement as one that is intended to prevent price matching by a trading center not displaying the NBBO.

The Commission further stated that under a trade-at requirement, a trading center that was not displaying the NBBO at the time it received an incoming

marketable order could either: (1) execute the order with significant price improvement (\$0.05 or the midpoint between the NBBO);<sup>35</sup> (2) execute the order at the NBBO if the size of the incoming marketable order is of block size; or (3) route intermarket sweep orders to execute against the full displayed size of the protected quotations at the NBBO and then execute the balance of the order at the NBBO price.

The Commission notes that, in the context of the Pilot, an important purpose of a trade-at requirement would be to test whether, in a wider tick size environment, the ability of market participants to match displayed prices, without quoting, would disproportionately affect market makers' quoting practices. If quoting practices are affected negatively, then it could undermine one of the central purposes of the Pilot, namely to determine whether wider tick sizes positively affect market maker participation and pre-trade transparency.

- The Commission generally requests comment on the advisability of testing a trade-at requirement as part of the Pilot. Is a trade-at requirement necessary to effectively analyze the impact of widened ticks on the trading and liquidity of small capitalization securities? If a trade-at requirement is advisable, has the Commission appropriately described such a requirement in the Order? Are exceptions to the trade-at requirement set forth in the Order appropriate?
- The Commission noted that a trade-at requirement could stem the possible migration of trading volume away from "lit" venues to "dark" venues. Is a trade-

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<sup>35</sup> The Commission noted that it preliminarily believed that \$0.005 would be the required minimum price improvement for retail investor orders.

at requirement an appropriate regulatory tool for the proposed Pilot to address this potential concern? Are there other tools that could achieve the same goals?

Would a trade-at requirement improve trading and liquidity of small capitalization securities and benefit investors? How difficult and costly would it be to implement the trade-at restriction?

- The Participants have proposed several deviations from, or additions to, the trade-at component of Test Group Three that differ from or go beyond those specified in the Commission Order.<sup>36</sup> First, the Participants proposed that the trade-at requirement apply to any protected bid or protected offer, rather than just the NBBO.<sup>37</sup> Should the trade-at requirement apply to all protected quotes?
- Second, the Participants proposed that a trading center be permitted to execute an order at the price of a protected quotation, so long as it is displaying a quotation at that price through a processor or an SRO quotation feed. Should the display requirement be satisfied by displaying only through a proprietary market data feed, and not a processor? In other words, should a trade-at requirement permit

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<sup>36</sup> See Section III *supra* for the rationale provided by the Participants for this proposal.

<sup>37</sup> Rule 600(b)(42) of Regulation NMS defines “National best bid and national best offer” as “with respect to quotations for an NMS security, the best bid and best offer for such security that are calculated and disseminated on a current and continuing basis by a plan processor pursuant to an effective national market system plan; provided, that in the event two or more market centers transmit to the plan processor pursuant to such plan identical bids or offers for an NMS security, the best bid or best offer (as the case may be) shall be determined by ranking all such identical bids or offers (as the case may be) first by size (giving the highest ranking to the bid or offer associated with the largest size), and then by time (giving the highest ranking to the bid or offer received first in time)” (emphasis added).

price matching through displayed quotes that are not protected quotes? Why or why not?

- Third, the Participants proposed that a trading center be permitted to execute an order at the price of a protected quotation, if it is displaying a quotation at that price, but only up to its displayed size. Is this restriction necessary to achieve the purpose of the Pilot's trade-at requirement? Why or why not?
- Fourth, the Participants proposed to restrict where and how a trading center that is displaying a quotation at the price of a protected quotation may execute orders at that price. Specifically, where a quotation is displayed through a national securities exchange, the execution must occur against the displayed size on that exchange; where a quotation is displayed on the Alternative Display Facility ("ADF") or other Commission-approved facility, the execution must occur in accordance with the rules of the ADF or other such facility. Is this restriction necessary to achieve the purpose of the Pilot's trade-at requirement? Why or why not?
- Fifth, the Participants proposed 13 exceptions to the trade-at restrictions, many of which are modeled after the trade-through exceptions in Rule 611 of Regulation NMS. Does it make sense to apply the trade-through exceptions in Rule 611 to a trade-at restriction? Why or why not?
- Finally, the Participants proposed to except fractional shares from the trade-at requirement. Is this proposed exception reasonable? Why or why not?

#### **D. Proposed Data**

As noted above, the Commission stated that one of the goals of a proposed Pilot would be to generate data on the impact of widened tick sizes on the trading and liquidity for certain small capitalization stocks. Therefore, in the Order, the Commission set forth details on the data that it preliminarily believed to be necessary to support analysis. This data is meant to supplement publicly available data such as data available on the Commission's market structure website<sup>38</sup> and should allow the Commission and others to conduct studies on the effect of increased tick size on liquidity, execution quality for investors, volatility, market maker profitability, competition, transparency and institutional ownership. The Commission requests comment on the data to be generated.

- How important is the public release of the data that is collected during the Pilot (“pilot data”) to the usefulness of the Pilot (i.e., to achieve a reliable analysis of the tradeoffs associated with increasing the quote increment in certain small capitalization securities)? Are there readily available data that are already public and could substitute for the pilot data? If so, what are they and how well could they facilitate tests of the tradeoffs associated with changing quote increments? What are the most important tradeoffs to examine during the Pilot?
- Are researchers other than those in the securities industry or regulators likely to study the pilot data? Are they likely to use the pilot data to study the Pilot? If so, which sets of data are likely to be the most useful?

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<sup>38</sup> See Market Structure website, available at <http://www.sec.gov/marketstructure/#.VCMPpyh39UQ>.

- How costly will the Pilot data be to produce and make public? Are there any components of the pilot data that are particularly costly? If so, which ones? Are there any unintended consequences of releasing the pilot data?
- The data is to be available starting six months prior to the start of the Pilot, and continue until six months after the Pilot ends. How valuable is the data availability before and after the proposed Pilot, and is six months the appropriate time frame? Please explain.
- Is the frequency of the Pilot data, and delay in its release, appropriate to balance the cost of the data, including the potential for unintended consequences, against the value of the data to the pilot analysis and the timeliness of Pilot analyses by researchers? If not, what would be more appropriate? Please explain.
  - i. Assessments
- How important are the Participant assessments of the proposed Pilot to the success of the Pilot? Are the Participants able to examine unique data or offer a unique perspective such that certain results would only be observed because the Participants assessed the Pilot? Should the Participants assess any additional issues beyond those specified in the plan? If so, what issues?
- The Order stated that the Participants would conduct an assessment of market maker profitability. The Participants did not propose to study market maker profitability. Should the Participants produce an assessment of market maker profitability as contemplated by the Order? Why or why not?

ii. Appendix A

- Will the data requirements specified in Appendix A allow market participants to effectively implement the Pilot? How could the data requirements be more useful? Is pipe-delimited ASCII the best format of the data for this purpose? If not, what other format would be more appropriate and why? Should the data in Appendix A have a common naming convention? Why or why not?
- Will the pilot data in Appendix A facilitate the analysis of the tradeoffs associated with increasing the quote increment for certain small capitalization securities? How could this data be more useful? Is pipe-delimited ASCII the best format of the data for this purpose? If not, what other format would be more appropriate and why?
- How costly is the data in Appendix A to produce? Are there any unintended consequences of releasing the data in Appendix A? Please explain.

iii. Appendices B and C

- Will each set of pilot data specified in Appendices B and C facilitate analysis of the tradeoffs associated with increasing the quote increment for certain small securities, including liquidity, execution quality for investors, market maker profitability, competition, and transparency? How much does each set of pilot data specified in Appendices B and C add to potential analyses of the proposed Pilot compared to what can be learned with publicly available data? How much does each set of pilot data specified in Appendices B and C add to potential analyses of the proposed Pilot compared to what can be learned with other pilot data? How could each set of data be more useful or how can the combinations of

data be more useful? Is pipe-delimited ASCII the best format of the data? If not, what other format would be more appropriate and why? Should the data in Appendices B and C have common naming conventions? Why or why not?

- How costly is the data in Appendices B and C to produce? Are there any unintended consequences of releasing the data in Appendices B and C? Please explain. Are there ways to reduce the cost of the data in Appendices B and C without sacrificing its value to the Pilot? Please explain.
- The data specified in Appendix B.1 provides data similar to Rule 605 market quality data, but with a few key differences. For example, the Pilot data specified in Appendix B.1 would provide daily data whereas Rule 605 provides for monthly disclosure. Further, the Pilot data would include more order types and sizes than what Rule 605 data includes, and provides additional time to execution and order size buckets than Rule 605 data. How important are the expansions to the Rule 605 data, such as the daily frequency and the inclusion of orders that are excluded from Rule 605 statistics? Please explain. On the other hand, the pilot data does not include orders that are routed to other trading venues and executed in full by those other trading venues. Should the Pilot data also include orders that are routed to other trading venues and executed in full by those other trading venues? Please explain. The data specified in Appendix B.1 includes only resting orders. This excludes “immediate or cancel” orders. Should immediate or cancel orders be included in the data in Appendix B.1?

- Can the data in Appendix B.1 be built from the same infrastructure that currently supports Rule 605 data? Why or why not? Would the costs of Appendix B.1 data depend on whether it can be built from the same infrastructure as Rule 605 data?
- The data specified in Appendix B.2 provides information on market and marketable limit orders. The data includes statistics for only the non-resting portion of the Marketable Limit Orders. Is this appropriate in light of potential Pilot analysis and data that are currently available? If not, why not? Should this data contain additional order information? If so, what other order information should be included? Please also specify which data items, if any, are less valuable or potentially problematic.
- The data specified in Appendix B.3 provides the number of registered market makers. Should this data also include a separate count of the number of unregistered market makers that provide liquidity in the Pilot Securities? Please explain.
- The data specified in Appendix B.4 provides aggregate participation statistics for registered market makers. Should this data also include separate participation statistics for unregistered market makers that provide liquidity in the Pilot Securities? Please explain.
- Should the data in Appendix B exclude orders entered or executed while a trading halt is in effect? Please explain.
- The Participants have proposed that each market maker shall provide to its Designated Examining Authority the market maker profitability data set forth in Appendix C of the Plan. The Designated Examining Authority will then

aggregate the data, report it to the Commission, and make it publicly available on the Designated Examining Authority's website. This aspect differs from the Order, which required the Participants to collect such data, make it public, and conduct an assessment. Is market maker profitability data necessary to analyze the effect of the Tick Size Pilot Program and to reach a conclusion about the tradeoffs associated with increasing the quote increment in certain small capitalization securities? Are there better ways to collect such Pilot data?

- The data specified in Appendix C provides aggregate market maker profitability statistics. Should this data also include separate profitability statistics for unregistered market makers that provide liquidity in the Pilot Securities? Please explain.

Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission's Internet comment form

(<http://www.sec.gov/rules/sro.shtml>); or

- Send an e-mail to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File Number 4-657 on the subject line.

Paper comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange

Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number 4-657. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the

Commission's Internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the Plan that are filed with the Commission, and all written communications relating to Plan between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549 on official business days between 10:00 a.m. and 3:00 p.m. Copies of the filing will also be available for inspection and copying at the Participants' principal offices. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number 4-657 and should be submitted on or before [insert date **[45]** days from publication in the Federal Register].

By the Commission.

Kevin M. O'Neill  
Deputy Secretary

**EXHIBIT A**

PLAN TO IMPLEMENT A TICK SIZE PILOT PROGRAM  
SUBMITTED TO  
THE SECURITIES AND EXCHANGE COMMISSION  
PURSUANT TO RULE 608 OF REGULATION NMS  
UNDER THE  
SECURITIES EXCHANGE ACT OF 1934

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## **Preamble**

Pursuant to Section 11A(a)(3)(B) of the Exchange Act, which authorizes the SEC to require by order self-regulatory organizations to act jointly with respect to matters as to which they share authority in planning, developing, operating, or regulating a national market system, the SEC issued an order directing the Participants to submit a Tick Size Pilot Plan as a national market system plan pursuant to Rule 608(a)(3) of Regulation NMS under the Exchange Act. In response, the Participants submit this Plan to implement a Tick Size Pilot Program that will allow the Commission, market participants, and the public to study and assess the impact of increment conventions on the liquidity and trading of the common stocks of small capitalization companies. To do so, the Plan provides for the widening of quoting and trading increments for a group of Pilot Securities. As detailed herein, the Pilot Securities will be subdivided into three Test Groups and a Control Group, each with its own requirements and exceptions relating to quoting and trading increments to facilitate the referenced analysis.

I. Definitions

(A) "Average effective spread" has the meaning provided in Rule 600(b)(5) of Regulation NMS under the Exchange Act.

(B) "Average realized spread" has the meaning provided in Rule 600(b)(6) of Regulation NMS under the Exchange Act.

(C) "Benchmark trade" means the execution of an order at a price that was not based, directly or indirectly, on the quoted price of a Pilot Security at the time of execution and for which the material terms were not reasonably determinable at the time the commitment to execute the order was made.

(D) "Best protected bid" means the highest priced protected bid. (E)

"Best protected offer" means the lowest priced protected offer.

(F) "Block Size" has the meaning provided in Rule 600(b)(9) of Regulation NMS under the Exchange Act.

(G) "Brokered cross trade" means a trade that a broker-dealer that is a member of a Participant executes directly by matching simultaneous buy and sell orders for a Pilot Security.

(H) "Closing Price" means the closing auction price on the primary listing exchange, or if not available, then the last regular-way trade reported by the processor prior to 4:00 p.m. ET.

(I) "Designated Examining Authority" means, with respect to a member of two or more self-regulatory organizations, the self-regulatory organization responsible for (i) examining such member for compliance with the financial responsibility requirements imposed by the Exchange Act, or by Commission or self-regulatory organization rules, (ii) receiving regulatory reports from such member, (iii) examining such member for compliance with, and enforcing

compliance with, specified provisions of the Exchange Act, the rules and regulations thereunder, and self-regulatory organization rules, and (iv) carrying out any other specified regulatory functions with respect to such member.

(J) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(K) "Inside-the-quote limit order," "at-the-quote limit order," and "near-the-quote limit order" mean non-marketable buy orders that are ranked at a price, respectively, higher than, equal to, and lower by \$0.10 or less than the National Best Bid at the time of order receipt, and non-marketable sell orders that are ranked at a price, respectively, lower than, equal to, and higher by \$0.10 or less than the National Best Offer at the time of order receipt.

(L) "Market Maker" means a dealer registered with any self-regulatory organization, in accordance with the rules thereof, as (i) a market maker or (ii) a liquidity provider with an obligation to maintain continuous, two-sided trading interest.

(M) "Marketable limit order" means any buy order with a limit price equal to or greater than the National Best Offer at the time of order receipt, or any sell order with a limit price equal to or less than the National Best Bid at the time of order receipt. For price sliding, pegged, discretionary, or similar order types where the ranked price is different from the limit price, the ranked price will determine marketability.

(N) "Measurement Period" means the U.S. trading days during the three-calendar-month period ending at least 30 days prior to the effective date of the Pilot Period.

(O) "National Best Bid" and "National Best Offer" have the meanings provided in Rule 600(b)(42) of Regulation NMS under the Exchange Act.

(P) "Negotiated Trade" means (i) a Benchmark trade, including, but not limited to, a Volume-Weighted Average Price trade or a Time-Weighted Average Price trade, provided that,

if such a trade is composed of two or more component trades, each component trade complies with the quoting and trading increment requirements of the Plan, or with an exception to such requirements, or (ii) a Pilot Qualified Contingent Trade.

(Q) "NMS common stock" means an NMS stock that is common stock of an operating company.

(R) "NMS stock" has the meaning provided in Rule 600(b)(47) of Regulation NMS under the Exchange Act.

(S) "Operating Committee" has the meaning provided in Section III(C) of the Plan.

(T) "Participant" means a party to the Plan.

(U) "Pilot Period" means the operative period of the Tick Size Pilot Program, lasting one year from the date of implementation.

(V) "Pilot Qualified Contingent Trade" means a transaction consisting of two or more component orders, executed as agent or principal, where: (1) at least one component order is in an NMS common stock; (2) all components are effected with a product or price contingency that either has been agreed to by the respective counterparties or arranged for by a broker-dealer as principal or agent; (3) the execution of one component is contingent upon the execution of all other components at or near the same time; (4) the specific relationship between the component orders (*e.g.*, the spread between the prices of the component orders) is determined at the time the contingent order is placed; (5) the component orders bear a derivative relationship to one another, represent different classes of shares of the same issuer, or involve the securities of participants in mergers or with intentions to merge that have been announced or since canceled; and (6) the transaction is fully hedged (without regard to any prior existing position) as a result of the other components of the contingent trade.

(W) "Pilot Securities" means those securities that satisfy the criteria established in Section V.

(X) "Plan" means the plan set forth in this instrument, as amended from time to time in accordance with its provisions.

(Y) "Processor" means the single plan processor responsible for the consolidation of information for an NMS stock pursuant to Rule 603(b) of Regulation NMS under the Exchange Act.

(Z) "Protected bid" and "protected offer" have the meanings provided in Rule 600(b)(57) of Regulation NMS under the Exchange Act.

(AA) "Protected quotation" has the meaning provided in Rule 600(b)(58) of Regulation NMS under the Exchange Act.

(BB) "Quotation" has the meaning provided in Rule 600(b)(62) of Regulation NMS under the Exchange Act.

(CC) "Regular Trading Hours" has the meaning provided in Rule 600(b)(64) of Regulation NMS under the Exchange Act. For purposes of the Plan, Regular Trading Hours can end earlier than 4:00p.m. ET in the case of an early scheduled close.

(DD) "Retail Investor Order" means an agency order or a riskless principal order originating from a natural person, provided that, prior to submission, no change is made to the terms of the order with respect to price or side of market and the order does not originate from a trading algorithm or any other computerized methodology. The Participant that is the Designated Examining Authority of a member of a Participant operating a trading center executing a Retail Investor Order will require such trading center to sign an attestation that

substantially all orders to be executed as Retail Investor Orders will qualify as such under the Plan.

(EE) "Retail liquidity providing order" means an order entered into a Participant-operated retail liquidity program to execute against Retail Investor Orders.

(FF) "SEC" means the United States Securities and Exchange Commission. (GG) "SRO quotation feed" means any market data feed disseminated by a self-regulatory organization.

(HH) "Tick Size Pilot Program" means the program established by this Plan and by the corresponding rules of the Participants.

(II) "Time of order execution" means the time (to the second, or to such smaller increments as are available) that an order was executed at any venue.

(JJ) "Time of order receipt" means the time (to the second, or to such smaller increments as are available) that an order was received by a trading center for execution.

(KK) "Time-Weighted Average Price" means the price calculated as the average price of a security over a specified period of time.

(LL) "Trade-at" means the execution by a trading center of a sell order for a Pilot Security at the price of a protected bid or the execution of a buy order for a Pilot Security at the price of a protected offer.

(MM) "Trade-at Intermarket Sweep Order" means a limit order for a Pilot Security that meets the following requirements:

- (1) When routed to a trading center, the limit order is identified as an Intermarket Sweep Order; and

(2) Simultaneously with the routing of the limit order identified as an Intermarket Sweep Order, one or more additional limit orders, as necessary, are routed to execute against the full displayed size of any protected bid, in the case of a limit order to sell, or the full displayed size of any protected offer, in the case of a limit order to buy, for the Pilot Security with a price that is equal to the limit price of the limit order identified as an Intermarket Sweep Order. These additional routed orders also must be marked as Intermarket Sweep Orders.

(NN) "Trading center" has the meaning provided in Rule 600(b)(78) of Regulation NMS under the Exchange Act.

(OO) "Volume-Weighted Average Price" means the price calculated by summing up the products of the number of single-counted shares traded and the respective share price, and dividing by the total number of single-counted shares traded.

## II. Parties

### (A) List of Parties

The parties to the Plan are as follows:

- (1) BATS Exchange, Inc.  
8050 Marshall Drive  
Lenexa, Kansas 66214
- (2) BATS Y-Exchange, Inc.  
8050 Marshall Drive  
Lenexa, Kansas 66214
- (3) Chicago Stock Exchange, Inc.  
440 South LaSalle Street  
Chicago, Illinois 60605
- (4) EDGA Exchange, Inc.  
545 Washington Boulevard  
Sixth Floor  
Jersey City, NJ 07310

- (5) EDGX Exchange, Inc.  
545 Washington Boulevard  
Sixth Floor  
Jersey City, NJ 07310
- (6) Financial Industry Regulatory Authority, Inc.  
1735 K Street, NW  
Washington, DC 20006
- (7) NASDAQ OMX BX, Inc.  
One Liberty Plaza  
New York, NY 10006
- (8) NASDAQ OMX PHLX LLC  
1900 Market Street  
Philadelphia, PA 19103
- (9) The Nasdaq Stock Market LLC  
1 Liberty Plaza  
165 Broadway  
New York, NY 10006
- (10) New York Stock Exchange LLC  
11 Wall Street  
New York, NY 10005
- (11) NYSE MKT LLC  
11 Wall Street  
New York, NY 10005
- (12) NYSE Area, Inc.  
11 Wall Street  
New York, NY 10005
- (B) Compliance Undertaking

By subscribing to and submitting the Plan for approval by the SEC, each Participant agrees to comply with, and to enforce compliance by its members, as applicable, with the provisions of the Plan as required by Rule 608(c) of Regulation NMS under the Exchange Act. To this end, each Participant will adopt rules requiring compliance by its members with the

provisions of the Plan, as applicable, and adopt such other rules as are needed for such compliance.

(C) New Participants

The Participants agree that any entity registered as a national securities exchange or national securities association under the Exchange Act may become a Participant by: (1) executing a copy of the Plan, as then in effect; (2) providing each then-current Participant with a copy of such executed Plan; and (3) effecting an amendment to the Plan as specified in Section III(B) of the Plan.

III. Amendments to Plan

(A) General Amendments

Except with respect to the addition of new Participants to the Plan, any proposed change in, addition to, or deletion from the Plan will be effected by means of a written amendment to the Plan that: (1) sets forth the change, addition, or deletion; (2) is executed on behalf of each Participant; and (3) is approved by the SEC pursuant to Rule 608 of Regulation NMS under the Exchange Act, or otherwise becomes effective under Rule 608 of Regulation NMS under the Exchange Act.

(B) New Participants

With respect to new Participants, an amendment to the Plan may be effected by the new national securities exchange or national securities association executing a copy of the Plan, as then in effect (with the only changes being the addition of the new Participant's name in Section II(A) of the Plan) and submitting such executed Plan to the SEC for approval. The amendment will be effective when it is approved by the SEC in accordance with Rule 608 of Regulation

NMS under the Exchange Act, or otherwise becomes effective pursuant to Rule 608 of Regulation NMS under the Exchange Act.

(C) Operating Committee

(1) Each Participant will select from its staff one individual to represent the Participant as a member of an Operating Committee, together with a substitute for such individual. The substitute may participate in deliberations of the Operating Committee and will be considered a voting member thereof only in the absence of the primary representative. Each Participant will have one vote on all matters considered by the Operating Committee. No later than the initial date of Plan operations, the Operating Committee will designate one member of the Operating Committee to act as the Chair of the Operating Committee.

(2) The Operating Committee will monitor the procedures established pursuant to this Plan and advise the Participants with respect to any deficiencies, problems, or recommendations as the Operating Committee may deem appropriate. The Operating Committee will establish specifications and procedures for the implementation and operation of the Plan that are consistent with the provisions of this Plan. With respect to matters in this paragraph, Operating Committee decisions must be approved by a simple majority vote.

(3) Any recommendation for an amendment to the Plan from the Operating Committee that receives an affirmative vote of at least two-thirds of the Participants, but is less than unanimous, will be submitted to the SEC as a request for an amendment to the Plan initiated by the Commission under Rule 608 of Regulation NMS.

IV. Policies and Procedures

Consistent with the compliance undertakings set out in Section II(B), all Participants and members of Participants will be required to establish, maintain, and enforce written policies and

procedures that are reasonably designed to comply with applicable quoting and trading requirements specified in Section VI for the Pilot Securities.

Each Participant, as applicable, will develop appropriate policies and procedures that provide for collecting and reporting to the SEC the data described in Appendix B. In addition, each Participant that is the Designated Examining Authority of a member of a Participant operating a trading center will require such member to develop appropriate policies and procedures for collecting and reporting the data described in Items I and II of Appendix B, as applicable, to the Designated Examining Authority. Each Participant that is the Designated Examining Authority of a member of a Participant operating a trading center will develop appropriate policies and procedures, as applicable, that provide for collecting and reporting such data to the SEC. The data collection and reporting obligations are described below in Section VII.

Each Participant that is the Designated Examining Authority of a Market Maker will require such Market Maker to develop policies and procedures for collecting the data set out in Appendix C and reporting it to the Designated Examining Authority. Each Participant that is the Designated Examining Authority of a Market Maker will develop appropriate policies and procedures that provide for collecting and reporting such data to the SEC on an aggregated basis. The Designated Examining Authority will also develop policies and procedures reasonably designed to ensure the confidentiality of the non-aggregated data it receives from Market Makers. The data collection and reporting obligations are described below in Section VII.

V. Identification of Pilot Securities

(A) Criteria for Selection of Pilot Securities

Pilot Securities will consist of those NMS common stocks that satisfy the following criteria:

- (1) A market capitalization of \$5 billion or less on the last day of the Measurement Period, where market capitalization is calculated by multiplying the total number of shares outstanding on such day by the Closing Price of the security on such day;
- (2) A Closing Price of at least \$2.00 on the last day of the Measurement Period;
- (3) A Closing Price on every U.S. trading day during the Measurement Period that is not less than \$1.50;
- (4) A Consolidated Average Daily Volume ("CADY") during the Measurement Period of one million shares or less, where the CADY is calculated by adding the single-counted share volume of all reported transactions in the Pilot Security during the Measurement Period and dividing by the total number of U.S. trading days during the Measurement Period; and
- (5) A Measurement Period Volume-Weighted Average Price ("Measurement Period VWAP") of at least \$2.00, where the Measurement Period VWAP is determined by calculating the VWAP for each U.S. trading day during the Measurement Period, summing the daily VWAP across the Measurement Period, and dividing by the total number of U.S. trading days during the Measurement Period.

For purposes of the CADY and Measurement Period VWAP calculations described in Sections V(A)(4) and V(A)(5), U.S. trading days during the Measurement Period with early

closes will be excluded. An NMS common stock that had its initial public offering within six months of the start of the Pilot Period will not be eligible to be a Pilot Security.

(B) Grouping of Pilot Securities

The Operating Committee will oversee the Pilot Security grouping process in accordance with the methodology and criteria set out in this subsection. Once the population of Pilot Securities has been determined based on the criteria in Section V(A), the Operating Committee will select the Pilot Securities to be placed into three Test Groups by means of a stratified random sampling process. To effect this sampling, each of the Pilot Securities will be categorized as having (1) a low, medium, or high share price based on the Measurement Period VWAP, (2) low, medium, or high market capitalization based on the last day of the Measurement Period, and (3) low, medium, or high trading volume based on the CADY during the Measurement Period, yielding 27 possible categories. Low, medium, and high subcategories will be established by dividing the categories into three parts, each containing a third of the population.

Pilot Securities will be randomly selected from each of the 27 categories for inclusion into the Test Groups. If, however, a single category of Pilot Securities contains fewer than 10 securities, it will be combined with another of the 27 categories that contains at least 10 securities. If two or more categories of Pilot Securities contain fewer than 10 securities, those categories will be combined, provided the combined category contains at least 10 securities. If the combined category contains fewer than 10 securities, then the category will be combined with another of the 27 categories that contains at least 10 securities.

Pilot Securities will be randomly selected from each category for inclusion in the three Test Groups based on the percentage of Pilot Securities comprised of that category. As a result,

each category will be represented in the three Test Groups based on its relative proportion to the population of Pilot Securities. Further, a primary listing market's securities will be selected from each category and included in the three Test Groups in the same proportion as that primary listing market's securities comprise each category of Pilot Securities. Each Test Group will consist of 400 Pilot Securities. Those Pilot Securities not placed into the three Test Groups will constitute the Control Group.

(C) Publication of Pilot Securities and Groups

Each primary listing exchange will make publicly available for free on its website a list of those Pilot Securities listed on that exchange and included in the Control Group and each Test Group, adjusting for ticker symbol changes and relevant corporate actions. The list of Pilot Securities will contain the data specified in Appendix A.

VI. Pilot Test Groups

As described in Section V(B), the Pilot Securities will be divided into four groups: a Control Group and three Test Groups. Each Test Group will consist of 400 Pilot Securities. The Control Group will consist of the Pilot Securities not placed into a Test Group.

(A) Control Group

Pilot Securities in the Control Group may be quoted and traded at any price increment that is currently permitted.

(B) Test Group One

Pilot Securities in Test Group One will be quoted in \$0.05 minimum increments, but may continue to trade at any price increment that is currently permitted. Participants will adopt rules prohibiting Participants or any member of a Participant from displaying, ranking, or accepting from any person any displayable or non-displayable bids or offers, orders, or indications of

interest in any Pilot Security in Test Group One in price increments other than \$0.05. However, orders priced to execute at the midpoint and orders entered in a Participant-operated retail liquidity program may be ranked and accepted in increments of less than \$0.05.

(C) Test Group Two

Pilot Securities in Test Group Two will be subject to the same quoting requirements as Test Group One, along with the applicable quoting exceptions. In addition, Pilot Securities in Test Group Two may only be traded in \$0.05 minimum increments. Participants will adopt rules prohibiting trading centers operated by Participants and members of Participants from executing orders in any Pilot Security in Test Group Two in price increments other than \$0.05. The \$0.05 minimum trading increment applies to brokered cross trades. Pilot Securities in Test Group Two may trade in increments less than \$0.05, however, under the following circumstances:

- (1) Trading may occur at the midpoint between the National Best Bid and the National Best Offer or the midpoint between the best protected bid and the best protected offer;
- (2) Retail Investor Orders may be provided with price improvement that is at least \$0.005 better than the best protected bid or the best protected offer; and
- (3) Negotiated Trades may trade in increments less than \$0.05.

(D) Test Group Three

Pilot Securities in Test Group Three will be subject to the same quoting and trading requirements as Test Group Two, along with the applicable quoting and trading exceptions. In addition, Pilot Securities in Test Group Three will be subject to a trade-at prohibition.

Trade-at Prohibition. Under the trade-at prohibition, the Plan will (1) prevent a trading center that was not quoting from price-matching protected quotations and (2) permit a trading

center that was quoting at a protected quotation to execute orders at that level, but only up to the amount of its displayed size.

In accordance with the trade-at prohibition, Participants will adopt rules prohibiting trading centers operated by Participants and members of Participants from executing a sell order for a Pilot Security at the price of a protected bid or from executing a buy order for a Pilot Security at the price of a protected offer unless such executions fall within an exception set forth below.

Trade-at Prohibition Exceptions. Trading centers will be permitted to execute an order for a Pilot Security at a price equal to a protected bid or protected offer under the following circumstances:

- (1) The order is executed by a trading center that is displaying a quotation, via either a processor or an SRO quotation feed, at a price equal to the traded-at protected quotation but only up to the trading center's full displayed size. Where the quotation is displayed through a national securities exchange, the execution at the size of the order must occur against the displayed size on that national securities exchange. Where the quotation is displayed through the Alternative Display Facility or another facility approved by the Commission that does not provide execution functionality, the execution at the size of the order must occur against the displayed size in accordance with the rules of the Alternative Display Facility or such approved facility;
- (2) The order is of Block Size;
- (3) The order is a Retail Investor Order executed with at least \$0.005 price improvement;

- (4) The order is executed when the trading center displaying the protected quotation that was traded at was experiencing a failure, material delay, or malfunction of its systems or equipment;
- (5) The order is executed as part of a transaction that was not a "regular way" contract;
- (6) The order is executed as part of a single-priced opening, reopening, or closing transaction by the trading center;
- (7) The order is executed when a protected bid was priced higher than a protected offer in the Pilot Security;
- (8) The order is identified as an Intermarket Sweep Order;
- (9) The order is executed by a trading center that simultaneously routed Trade-at Intermarket Sweep Orders to execute against the full displayed size of the protected quotation that was traded at;
- (10) The order is executed as part of a Negotiated Trade;
- (11) The order is executed when the trading center displaying the protected quotation that was traded at had displayed, within one second prior to execution of the transaction that constituted the trade-at, a best bid or best offer, as applicable, for the Pilot Security with a price that was inferior to the price of the trade-at transaction.
- (12) The order is executed by a trading center which, at the time of order receipt, the trading center had guaranteed an execution at no worse than a specified price (a "stopped order"), where:
  - a. The stopped order was for the account of a customer;

- b. The customer agreed to the specified price on an order-by-order basis; and
  - c. The price of the trade-at transaction was, for a stopped buy order, equal to the national best bid in the Pilot Security at the time of execution or, for a stopped sell order, equal to the national best offer in the Pilot Security at the time of execution; or
- (13) The order is for a fractional share of a Pilot Security, provided that such fractional share order was not the result of breaking an order for one or more whole shares of a Pilot Security into orders for fractional shares or was not otherwise effected to evade the requirements of the trade-at prohibition or any other provisions of the Plan.

The following examples illustrate the basic operation of the trade-at prohibition:

Example 1

The NBBO for Pilot Security ABC is \$20.00 x \$20.10. Trading Center 1 is displaying a 100-share protected bid at \$20.00. Trading Center 2 is displaying a 100-share protected bid at \$19.95. There are no other protected bids. Trading Center 3 is not displaying any shares in Pilot Security ABC but has 100 shares hidden at \$20.00 and has 100 shares hidden at \$19.95. Trading Center 3 receives an incoming order to sell for 400 shares. To execute the 100 shares hidden at \$20.00, Trading Center 3 must respect the protected bid on Trading Center 1 at \$20.00. Trading Center 3 must route a Trade-at Intermarket Sweep Order to Trading Center 1 to execute against the full displayed size of the protected bid, at which point Trading Center 3 is permitted to execute against the 100 shares hidden at \$20.00. To execute the 100 shares hidden at \$19.95, Trading Center 3 must respect the protected bid on Trading Center 2 at \$19.95. Trading Center 3 must route a Trade-at Intermarket Sweep Order to Trading Center 2 to execute against the full

displayed size of the protected bid, at which point Trading Center 3 is permitted to execute against the 100 shares hidden at \$19.95.

Example 2

The NBBO for Pilot Security ABC is \$20.00 x \$20.10. Trading Center 1 is displaying a 100-share protected bid at \$20.00. Trading Center 2 is displaying a 100-share protected bid at \$20.00. Trading Center 2 also has 300 shares hidden at \$20.00 and has 300 shares hidden at \$19.95. Trading Center 3 is displaying a 100-share protected bid at \$19.95. There are no other protected bids. Trading Center 2 receives an incoming order to sell for 900 shares. Trading Center 2 may execute 100 shares against its full displayed size at the protected bid at \$20.00. To execute the 300 shares hidden at \$20.00, Trading Center 2 must respect the protected bid on Trading Center 1 at \$20.00. Trading Center 2 must route a Trade-at Intermarket Sweep Order to Trading Center 1 to execute against the full displayed size of Trading Center 1's protected bid, at which point Trading Center 2 is permitted to execute against the 300 shares hidden at \$20.00. To execute the 300 shares hidden at \$19.95, Trading Center 2 must respect the protected bid on Trading Center 3 at \$19.95. Trading Center 2 must route a Trade-at Intermarket Sweep Order to Trading Center 3 to execute against the full displayed size of Trading Center 3's protected bid, at which point Trading Center 2 is permitted to execute against the 300 shares hidden at \$19.95.

Example 3

The NBBO for Pilot Security ABC is \$20.00 x \$20.10. Trading Center 1 is displaying a 100-share protected bid at \$20.00. Trading Center 1 is also displaying 300 shares at \$19.90 on an SRO quotation feed. Trading Center 2 is displaying a 100-share protected bid at \$19.95. Trading Center 2 is also displaying 200 shares at \$19.90 on an SRO quotation feed and has 200 shares hidden at \$19.90. Trading Center 3 is displaying a 100-share protected bid at \$19.90.

There are no other protected bids. Trading Center 2 receives an incoming order to sell for 700 shares. To execute against its protected bid at \$19.95, Trading Center 2 must comply with the trade-through restrictions in Rule 611 of Regulation NMS and route an intermarket sweep order to Trading Center 1 to execute against the full displayed size of Trading Center 1's protected bid at \$20.00. Trading Center 2 is then permitted to execute against its 100-share protected bid at \$19.95. Trading Center 2 may then execute 200 shares against its full displayed size at the price of Trading Center 3's protected bid. To execute the 200 shares hidden at \$19.90, Trading Center 2 must respect the protected bid on Trading Center 3 at \$19.90. Trading Center 2 must route a Trade-at Intermarket Sweep Order to Trading Center 3 to execute against the full displayed size of Trading Center 3's protected bid, at which point Trading Center 2 is permitted to execute against the 200 shares hidden at \$19.90. Trading Center 2 does not have to respect Trading Center 1's displayed size at \$19.90 for trade-at purposes because it is not a protected quotation.

## VII. Collection of Pilot Data

### (A) Collection of Trading Center Pilot Data

Throughout the Pilot Period, the Participants will collect the following data with respect to Pilot Securities (as set forth in Appendix B):

- (1) Daily market quality statistics of orders by security, order type, original order size (as observed by the trading center), hidden status (as applicable), and coverage under Rule 605 of Regulation NMS;
- (2) Specified data regarding market orders and marketable limit orders;
- (3) Daily number of registered Market Makers; and
- (4) Daily Market Maker participation statistics.

Each Participant that is the Designated Examining Authority of a member of a Participant operating a trading center will require such member to collect and provide to the Designated Examining Authority the data described in subparagraphs (1) and (2) above, as applicable, subject to the terms and conditions in Appendix B. The Participants and each member of a Participant operating a trading center will also be required to collect such data for dates starting six months prior to the Pilot Period through six months after the end of the Pilot Period. Each Participant will make available to other Participants a list of members designated as Market Makers on that Participant's trading center.

On a monthly basis, the Participants and the Designated Examining Authority for each member of a Participant operating a trading center will make the data in the applicable subparagraphs specified above publicly available on their websites for free and will report such data to the SEC on a disaggregated basis by trading center. The data made publicly available will not identify the trading center that generated the data.

(B) Collection of Market Maker Profitability Data

Each Participant that is the Designated Examining Authority of a Market Maker will require such Market Maker to provide to the Designated Examining Authority the data specified in Appendix C regarding daily Market Maker trading profits with respect to Pilot Securities on a monthly basis. Each Market Maker will also be required to provide to its Designated Examining Authority such daily data for dates starting six months prior to the Pilot Period through six months after the end of the Pilot Period. On a monthly basis, the Designated Examining Authority will aggregate such data related to Market Makers and make the aggregated data publicly available on its website for free and will report such data to the SEC. The data made publicly available will not identify the Market Makers that generated the data.

### VIII. Assessment of Pilot

No later than six months after the end of the Pilot Period, the Participants will provide to the Commission and make publicly available a joint assessment of the impact of the Pilot. The assessment will include:

- (1) An assessment of the statistical and economic impact of an increase in the quoting increment on market quality;
- (2) An assessment of the statistical and economic impact of an increase in the quoting increment on the number of Market Makers;
- (3) An assessment of the statistical and economic impact of an increase in the quoting increment on Market Maker participation;
- (4) An assessment of the statistical and economic impact of an increase in the quoting increment on market transparency;
- (5) An evaluation whether any market capitalization, daily trading volume, or other thresholds can differentiate the results of the above assessments across stocks (*e.g.*, does the quoting increment impact differently those stocks with daily trading volume below a certain threshold);
- (6) An assessment of the statistical and economic impact of the above assessments for the incremental impact of a trading increment and for the joint effect of an increase in a quoting increment with the addition of a trading increment;
- (7) An assessment of the statistical and economic impact of the above assessments for the incremental impact of a trade-at prohibition and for the joint effect of an increase in a quoting increment with the addition of a trading increment and a trade-at prohibition; and

- (8) An assessment of any other economic issues that the Participants believe the SEC should consider in any rulemaking that may follow the Pilot.

Participants may individually submit to the SEC and make publicly available additional supplemental assessments of the impact of the Pilot.

IX. Implementation

The Tick Size Pilot Program will be implemented on a one-year pilot basis. The Tick Size Pilot Program will be applicable during and outside of Regular Trading Hours.

X. Withdrawal from Plan

If a Participant obtains SEC approval to withdraw from the Plan, such Participant may withdraw from the Plan at any time on not less than 30 days' prior written notice to each of the other Participants. At such time, the withdrawing Participant will have no further rights or obligations under the Plan.

XL Counterparts and Signatures

The Plan may be executed in any number of counterparts, no one of which need contain all signatures of all Participants, and as many of such counterparts as will together contain all such signatures will constitute one and the same instrument.

IN WITNESS THEREOF, this Plan has been executed as of the \_\_\_ day of \_\_\_\_\_ 2014 by each of the parties hereto.

BATS EXCHANGE, INC.

BY: \_\_\_\_\_

CHICAGO STOCK EXCHANGE, INC.

BY: \_\_\_\_\_

EDGX EXCHANGE, INC.

BY: \_\_\_\_\_

NASDAQ OMX BX, INC.

BY: \_\_\_\_\_

THE NASDAQ STOCK MARKET LLC

BY: \_\_\_\_\_

NYSE MKT LLC

BY: \_\_\_\_\_

BATS Y-EXCHANGE, INC.

BY: \_\_\_\_\_

EDGA EXCHANGE, INC.

BY: \_\_\_\_\_

FINANCIAL INDUSTRY REGULATORY  
AUTHORITY, INC.

BY: \_\_\_\_\_

NASDAQ OMX PHLX LLC

BY: \_\_\_\_\_

NEW YORK STOCK EXCHANGE LLC

BY: \_\_\_\_\_

NYSE ARCA, INC.

BY: \_\_\_\_\_

## **Appendix A – Publication of Pilot Securities**

The following data will be made publicly available in a pipe delimited format regarding the list of Pilot Securities included in the Control Group and each Test Group. Each primary listing exchange will be responsible for making publicly available for free on its website the following data with respect to the Pilot Securities listed on that exchange and included in the Control Group and each Test Group.

### **I. Identification of Pilot Securities**

- a. Ticker Symbol
- b. Security Name
- c. Listing Exchange
- d. Date
- e. Tick Size Pilot Program Group-character value of
  - i. "C" for Pilot Securities in the Control Group
  - ii. "G1" for Pilot Securities in Test Group One
  - iii. "G2" for Pilot Securities in Test Group Two
  - iv. "G3" for Pilot Securities in Test Group Three

### **II. Change in Pilot Securities' Ticker Symbols**

- a. Ticker Symbol
- b. Security Name
- c. Listing Exchange
- d. Effective Date
- e. Deleted Date
- f. Tick Size Pilot Program Group – character value of

- i. "C" for Pilot Securities in the Control Group
  - ii. "G1" for Pilot Securities in Test Group One
  - iii. "G2" for Pilot Securities in Test Group Two
  - iv. "G3" for Pilot Securities in Test Group Three
- g. Old Ticker Symbol(s)
- h. Reason for the change

## **Appendix B – Data Collected by Participants and Trading Centers**

Each Participant, as applicable, will collect and transmit the data described in Items I-IV with respect to Pilot Securities to the SEC in a pipe delimited format on a monthly basis. In addition, each Participant that is the Designated Examining Authority of a member of a Participant operating a trading center will require such member, as applicable, to collect and transmit the data described in Items I and II with respect to Pilot Securities to the Designated Examining Authority in a pipe delimited format on a monthly basis. Each Designated Examining Authority will transmit the data on a disaggregated basis to the SEC, *i.e.*, by trading center. The data will be provided to the SEC within 30 calendar days following month end. All trading centers, including Participants, will report the data described in Items I.a(28) and I.b with respect to only those orders executed, in whole or part, on that trading center. All trading centers will report the remaining data described in Item I.a with respect to any order received by that trading center. The data described in Item I will only be collected for orders received during Regular Trading Hours. All trading centers, including Participants, will report the data described in Item II with respect to any market or marketable limit orders received by that trading center. The data described in Item II will be collected for orders received during and outside of Regular Trading Hours. Orders entered while a trading halt is in effect will be excluded from the data. The data will be provided for dates starting six months prior to the Pilot Period through six months after the end of the Pilot Period.

- I. Market Quality Statistics** - Daily market quality statistics categorized by security, order type, original order size, hidden status, and coverage under Rule 605, including the following columns of information:

a. For regular hours orders which are market orders (10), marketable limit orders (11), inside-the-quote resting limit orders (12), at-the-quote resting limit orders (13), near-the-quote resting limit orders (within .10 from the NBBO) (14), resting intermarket sweep orders (15), retail liquidity providing orders (16), and midpoint passive liquidity orders (17) executed on the trading center:

- (1) Exchange code or trading center identifier;
- (2) Ticker Symbol;
- (3) Order Type, as defined in the Plan or in I.a of this Appendix;
- (4) Original Order size with the following modified categories from Rule 605 reports:
  - a. Less than 100 shares;
  - b. 100 to 499 shares;
  - c. 500 to 1999 shares;
  - d. 2000 to 4999 shares;
  - e. 5000 to 9999 shares; and
  - f. 10000 or more shares;
- (5) Hidden Status Category- indicates whether the orders fall into the following categories:
  - a. Entirely Displayable;
  - b. Partially Displayable; and
  - c. Not Displayable;
- (6) Rule 605 Coverage- indicates whether the orders are covered in Rule 605 (YIN);

- (7) The cumulative number of orders;
- (8) The cumulative number of shares of orders;
- (9) The cumulative number of shares of orders canceled;
- (10) The cumulative number of shares of orders executed on the receiving trading center;
- (11) The cumulative number of orders with special handling instructions (for example, slide, discretion, eligible counterparty, minimum quantity) excluded from price improvement and effective spread statistics;
- (12) The cumulative number of shares of orders with special handling instructions (for example slide, discretion, eligible counterparty, minimum quantity) excluded from price improvement and effective spread statistics;
- (13) The cumulative number of shares of orders executed at any other trading center;
- (14) The cumulative number of shares of orders executed from 0 to less than 100 microseconds after the time of order receipt;
- (15) The cumulative number of shares of orders executed from 100 microseconds to less than 100 milliseconds after the time of order receipt;
- (16) The cumulative number of shares of orders executed from 100 milliseconds to less than 1 second after the time of order receipt;
- (17) The cumulative number of shares of orders executed from 1 second to less than 30 seconds after the time of order receipt;
- (18) The cumulative number of shares of orders executed from 30 seconds to less than 60 seconds after the time of order receipt;

- (19) The cumulative number of shares of orders executed from 60 seconds to less than 5 minutes after the time of order receipt;
- (20) The cumulative number of shares of orders executed from 5 minutes to 30 minutes after the time of order receipt;
- (21) The cumulative number of shares of orders canceled from 0 to less than 100 microseconds after the time of order receipt;
- (22) The cumulative number of shares of orders canceled from 100 microseconds to less than 100 milliseconds after the time of order receipt;
- (23) The cumulative number of shares of orders canceled from 100 milliseconds to less than 1 second after the time of order receipt;
- (24) The cumulative number of shares of orders canceled from 1 second to less than 30 seconds after the time of order receipt;
- (25) The cumulative number of shares of orders canceled from 30 seconds to less than 60 seconds after the time of order receipt;
- (26) The cumulative number of shares of orders canceled from 60 seconds to less than 5 minutes after the time of order receipt;
- (27) The cumulative number of shares of orders canceled from 5 minutes to 30 minutes;
- (28) The share-weighted average realized spread for executions of orders;
- (29) Original Percentage Hidden - the received share-weighted average percentage of shares not displayable as of order receipt;
- (30) Final Percentage Hidden - the received share-weighted average percentage of shares not displayed prior to final order execution or cancellation;

- (31) Quoted Size at the National Best Bid and National Best Offer –the share-weighted average of the consolidated quoted size at the inside price at the time of order execution;
  - (32) Share-weighted average NBBO Spread at the time of order execution; and
  - (33) Share-weighted average BBO Spread of reporting exchange at the time of order execution.
- b. For market orders and marketable limit orders, except those noted as excluded: (1)
- The share-weighted average effective spread for executions of orders;
  - (2) The cumulative number of shares of orders executed with price improvement; (3) For shares executed with price improvement, the share-weighted average amount per share that prices were improved;
  - (4) For shares executed with price improvement, the share-weighted average period from the time of order receipt to the time of order execution;
  - (5) The cumulative number of shares of orders executed at the quote;
  - (6) For shares executed at the quote, the share-weighted average period from the time of order receipt to the time of order execution;
  - (7) The cumulative number of shares of orders executed outside the quote;
  - (8) For shares executed outside the quote, the share-weighted average amount per share that prices were outside the quote; and
  - (9) For shares executed outside the quote, the share-weighted average period from the time of order receipt to the time of order execution.

**II. Market and Marketable Limit Order Data** – The following columns of information with respect to Market Orders and non-booked portions of Marketable Limit Orders:

- a. Exchange code or trading center identifier;
- b. Ticker Symbol;
- c. Date;
- d. Time of order receipt;
- e. Order Type;
- f. Order Size in Shares;
- g. Order side-"B", "S" (including sell short exempt), "SS";
- h. Order price (if marketable limit);
- i. NBBO quoted price;
- j. NBBO quoted depth in lots;
- k. Receiving market offer for buy or bid for sell (as applicable);
- l. Receiving market depth (offer for buy and bid for sell) (as applicable);
- m. ISO flag (YIN);
- n. Retail Investor Order flag (YIN);
- o. Routable flag (YIN);
- p. IOC (YIN);
- q. Indicator for quote leader-"1" if the receiving market is the first market to post the NBB for a sell or NBO for a buy (as applicable);
- r. Average execution price-share-weighted average that includes only executions on the receiving market;
- s. Average execution time-share-weighted average period that includes only executions on the receiving market;
- t. Executed shares-the number of shares in the order that are executed;

- u. Canceled shares – the number of shares in the order that are canceled;
- v. Routed shares- the number of shares in the order that are routed to another exchange or market;
- w. Routed average execution price-share-weighted average that includes only shares routed away from the receiving market;
- x. Average routed execution time-share-weighted average period that includes only executions on the routed markets; and
- y. Indicator for special handling instructions (for example, slide, discretion, eligible counterparty, minimum quantity)- identifies orders that contain instructions that could result in delayed execution or an execution price other than the quote.

**III. Daily Market Maker Registration Statistics** - Each Participant that is a National Securities Exchange will collect daily Market Maker registration statistics categorized by security, including the following columns of information:

- a. Ticker Symbol;
- b. SRO;
- c. Number of registered market makers; and
- d. Number of other registered liquidity suppliers.

**IV. Daily Market Maker Participation Statistics**- Each Participant will collect daily Market Maker participation statistics with respect to each Market Maker engaging in trading activity on the trading center operated by the Participant. With respect to each Market Maker, the Participant will collect such statistics irrespective of whether the Market Maker is registered with the Participant. The participation statistics will be categorized by security, including the columns of information listed below, except that a

Participant that is a national securities association will not be required to collect such statistics unless a Market Maker registers with its Alternative Display Facility prior to or during the Pilot Period:

- a. Ticker Symbol;
- b. Share participation -the number of shares purchased or sold by Market Makers in a principal trade, not including riskless principal. When aggregating across Market Makers, share participation will be an executed share-weighted average per Market Maker;
- c. Trade participation – the number of purchases and sales by Market Makers in a principal trade, not including riskless principal. When aggregating across Market Makers, trade participation will be a trade-weighted average per Market Maker;
- d. Cross-quote share (trade) participation-the number of shares purchased (the number of purchases) at or above the NBO and the number of shares sold (the number of sales) at or below the NBB at the time of the trade;
- e. Inside-the-quote share (trade) participation-the number of shares purchased (the number of purchases) and the number of shares sold (the number of sales) between the NBBO at the time of the trade;
- f. At-the-quote share (trade) participation-the number of shares purchased (the number of purchases) that are equal to the National Best Bid price and the number of shares sold (the number of sales) that are equal to the National Best Offer price at the time of or immediately before the trade. In the case of a downward moving National Best Bid or Offer, the National Best Bid or National Best Offer price immediately before the trade will be used; and

g. Outside-the-quote share (trade) participation-the number of shares purchased (the number of purchases) that are less than the National Best Bid price and the number of shares sold (the number of sales) that are greater than the National Best Offer price at the time of or immediately before the trade. In the case of a downward moving National Best Bid or Offer, the National Best Bid or National Best Offer price immediately before the trade will be used.

## **Appendix C – Data Collected by Market Makers**

Each Participant that is the Designated Examining Authority of a Market Maker will require such Market Maker to collect the data described in Item I with respect to orders and executions in Pilot Securities on any trading center and to transmit such data in a pipe delimited format to the Designated Examining Authority on a monthly basis, to be provided within 30 calendar days following month end. Data will only be collected with respect to those orders and executions occurring during Regular Trading Hours. The data will be provided for dates starting six months prior to the Pilot Period through six months after the end of the Pilot Period. Each Designated Examining Authority will be responsible for aggregating the data provided by the Market Makers under Item I and providing the data described in Item II in a pipe delimited format to the SEC.

- I. Market Maker Profitability-** Daily Market Maker profitability statistics categorized by security, including the following columns of information:
- a. Total number of shares of orders executed by the Market Maker;
  - b. Raw Market Maker realized trading profits – the difference between the market value of Market Maker sales (shares sold x price) and the market value of Market Maker purchases (shares purchased x price). A LIFO-like method will be used for determining which share prices to use in the calculation;
  - c. Market Maker realized trading profits net of fees and rebates -realized trading profits plus rebates the Market Maker collects from trading on that day minus access fees the Market Maker pays for trading on that day (if estimated before allocation of rebates and fees, use expected rebates and fees); and

- d. Raw Market Maker unrealized trading profits – the difference between the purchase or sale price of the end-of-day inventory position of the Market Maker and the Closing Price. In case of a short position, the Closing Price from the sale will be subtracted. In the case of a long position, the purchase price will be subtracted from the Closing Price.

**II. Aggregated Market Maker Profitability-** Total Daily Market Maker profitability statistics categorized by security, including the following columns of information:

- a. Total Raw Market Maker realized trading profits-the difference between the market value of Market Maker sales (shares sold x price) and the market value of Market Maker purchases (shares purchased x price). A LIFO-like method will be used for determining which share prices to use in the calculation;
- b. Volume-weighted average of Raw Market Maker realized trading profits;
- c. Total Market Maker realized trading profits net of fees and rebates-realized trading profits plus rebates the Market Maker collects from trading on that day minus access fees the Market Maker pays for trading on that day (if estimated before allocation of rebates and fees, use expected rebates and fees);
- d. Volume-weighted average of Market Maker realized trading profits net of fees and rebates;
- e. Total Raw Market Maker unrealized trading profits-the difference between the purchase or sale price of the end-of-day inventory position of the Market Maker and the Closing Price. In case of a short position, the Closing Price from the sale will be subtracted. In the case of a long position, the purchase price will be subtracted from the Closing Price; and

f. Volume-weighted average of Market Maker unrealized trading profits.