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April 14, 2023

Ms. Vanessa Countryman
Secretary
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-1090

Re: FINRA Proposed Rule Change Relating to Alternative Display Facility New Entrant; File No. SR-FINRA-2022-032

Dear Ms. Countryman:

Investors Exchange LLC ("IEX") is pleased to provide comments on the proposed rule change ("Proposal") by the Financial Industry Regulatory Authority ("FINRA") to allow IntelligentCross ATS ("IntelligentCross") to become a new entrant on FINRA's Alternative Display Facility ("ADF"), which would allow IntelligentCross to display orders on the ADF that would be treated as "protected quotes" under Rule 611 of Regulation NMS.[1] The Commission recently instituted proceedings to determine whether to approve or disapproval the Proposal.[2]

Introduction

IEX commends IntelligentCross for creating an innovative model that has offered market participants a positive alternative in their trading of NMS securities. At the same time, its Proposal needs to be subject to careful review to determine whether treating IntelligentCross displayed orders as protected quotations meets the standards for approval under the Securities Exchange Act of 1934 ("Exchange Act"). As detailed below in this letter, we believe the following issues and concerns are relevant in this regard:

- The need for additional transparency about certain aspects of IntelligentCross's system design.
- How different types of participants could be impacted by the unique aspects of the delay used by IntelligentCross in matching transactions.
- The impact of including IntelligentCross quotes on the usefulness of consolidated market data, both before and after the implementation of the Commission's Market Data Infrastructure Rule ("MDIR").
- The potential impact on incentives for entities to operate as registered exchanges, rather than alternative trading systems ("ATS").

As described in the Proposal, IntelligentCross ASPEN operates three separate limit order books. It is seeking to display limit orders through the ADF and gain protected quote status for its best bid and offer prices for one of these, labeled as the "ASPEN Fee/Fee book" (the "Order Book"). The Order Book currently accepts limit orders (which can be displayed in IntelligentCross's direct market data feed), immediate or cancel ("IOC") orders, and pegged

[1] Securities Exchange Act Release No. 96550, 87 FR 79401 (December 27, 2022) ("FINRA Filing").
[2] Securities Exchange Act Release No. 97195, 88 FR 19173 (March 30, 2023).

orders. Once orders become displayed on the ADF, intermarket sweep orders ("ISOs") will also be allowed.

According to IntelligentCross, the Order Book employs a matching schedule using an "overnight optimization process that uses historical performance measurements from prior days' matches across all three ASPEN books." Match schedules are defined by minimum/maximum time bands for each security, which vary on a daily basis, and these bands can have a minimum time of 150 microseconds and a maximum time of 900 microseconds. Executions occur during randomized time intervals, defined as "match events", within each of these time bands during the trading day.

IntelligentCross states that "match events are scheduled continuously while the book is in a 'matchable state' (i.e., there is an order on each side eligible to match)". Based on its description, our understanding is that, if there are no contra-side orders that are priced and eligible to match, no match event is scheduled. Upon the arrival of the first contra-side order that is eligible to match with a resting order, the Order Book enters a matchable state, and a match event will be scheduled to occur, at a time determined by a randomized delay within the time bands that apply to that security on that particular day.[3]

While the Order Book is in a matchable state, IntelligentCross will continue to accept orders on both sides of the market and will process those that arrive prior to the match event time on a price/time priority basis. Further, while the Order Book is in a matchable state, orders that have been posted may be canceled if the cancelation is received before the match event time. IntelligentCross further explains that a match may not occur at match event time either because of order cancelations or changes in the national best bid and offer ("NBBO") before the match event time. With respect to market price changes, an incoming order may not match against a resting order at the match event time if:

- The NBBO moves between the time an order is received and the next match event takes place, making either the incoming order or the resting order non-marketable; or
- The NBBO moves before the next match event and pegged orders are repriced to the new NBBO, making the incoming order or the resting pegged order non-marketable.[4]

Discussion

Transparency About the Order Matching Process

IEX believes that IntelligentCross should provide additional transparency around how the matching process described above operates. In particular, we believe IntelligentCross should provide information for participants to understand how the time bands are established for each security. This should include detail on the specific inputs and the formula(s) applied that is sufficient to allow participants to verify how specific time bands are determined and allocated on a daily basis to specific securities. As a secondary matter, additional transparency should be

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[3] See Letter from Ari Burstein, General Counsel, Imperative Execution, to Brendan K. Loonam, FINRA, dated December 15, 2022, at 3-5.
[4] Id.

provided about the technology or methods used to apply the randomized delay within the time bands.

In considering other novel order matching methods, including the use of system delays, the Commission has required that markets seeking to have their quotes treated as protected quotes provide a high level of relevant transparency and detail. In seeking approval of its "speed bump" and its "Signal", which affects the pricing of specific order types in response to changes in market prices on other venues, IEX has made rule filings, as required, disclosing in detail the technology and the algorithmic formula used to create the Signal, including all the relevant inputs to the formula.[5] Each change in the Signal has required a separate filing. IEX has also provided full transparency, and data, describing the use of its D-Limit order type, which can be used to post protected quotes.[6] These rule filings have all been subject to notice and comment and review by the Commission. Other exchanges have been subject to equivalent scrutiny and review of their proposals involving novel order matching methods or system delays, including proposals that do not implicate the use of protected quotes.[7] Very recently, the Commission instituted proceedings to determine whether to approve or disapprove a rule filing, in response to comments that the exchange had provided insufficient information about the factors and formulas used in imposing a formulaic delay in the context of a particular order type.[8]

We understand that ATSs are subject to a substantially different form of regulation and less oversight than registered exchanges. But we believe that, at the least, all markets seeking a protected quote should be subject to an equivalent level of transparency and review with respect to matters *directly affecting how their quotes may be accessed and displayed and how executions involving those quotes may occur*. This is vital for two reasons. First, because of the unique function that protected quotes play in equity markets, it is important for participants to be able to evaluate how well the means used to display and access protected quotes meet the stated purposes of individual markets, and whether those means promote fair and orderly markets. Second, as discussed more fully below, equivalent transparency and review is important to avoid creating new incentives for markets seeking protected quote status to avoid registering as an exchange.

Apart from this additional level of transparency, it is equally important that there be a clear expectation that material changes to methods affecting quote display and access also be subject to appropriate review. This might be accomplished, for example, by a requirement to include material changes in FINRA rule filings, subject to Commission approval after notice and comment.

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[5] See, e.g., Securities Exchange Act Release No. 96416, 87 FR 75099 (December 7, 2022); Securities Exchange Act Release No. 83408, 83 FR 17467 (April 19, 2018).
[6] See Securities Exchange Act Release No. 89686, 85 FR 54438 (September 1, 2020) ("D-Limit Approval Order"). .
[7] See, e.g., Securities Exchange Act Release No. 94123, 86 17230 (April 1, 2021) (batch auction proposal); Securities Exchange Act Release No. 89007, 85 FR 35454 (June 10, 2020) (mid-point discretionary orders with optional offset)
[8] See Securities Exchange Act Release No. 97263, 88 FR 22498, 22505 (April 13, 2023).

The Application of the IntelligentCross Delay

IEX Background

In considering the potential impact of how IntelligentCross applies its randomized delay, it is helpful to compare the delay that is used by IEX. In doing so, it is important to stress that we are not suggesting that other types of delays cannot be imposed by markets maintaining a protected quote. Instead, because the Commission has previously conducted an in-depth review of the relationship between access delays (intentional and otherwise) and the use of protected quotes in the context of IEX's exchange application, we think this background provides important context.

IEX's imposes a 350-microsecond "speed bump" on all order messages sent to the exchange. Each order message (including cancelations or amendments to orders) must traverse the speed bump, which exists outside the exchange's matching systems, before it may enter and be accepted by those systems. The length of the delay is determined by a defined length of coiled optical fiber, coupled with a defined physical distance between IEX's "point of presence", where are orders are first received, and the location of IEX's trading system. IEX does not presently impose a speed bump delay on messages from the exchange back to market participants or on market data feeds, and it has never imposed any delay on the delivery of market data to the securities information processors ("SIPs") that are responsible for generating consolidated market data received from all the exchanges.

Because of its design, the speed bump is "deterministic", meaning that it applies to all orders from all participants in exactly the same way. Because of its design, it is also functionally identical to physical distance between the exchange and its users. In ruling on IEX's exchange application, the Commission considered all the specific aspects of the IEX delay in finding that the use of the speed bump was consistent with the standards of the Exchange Act.[9]

The Commission also specifically found that the use of the speed bump was consistent with IEX's ability to maintain a protected quotation under Rule 611 of Regulation NMS. In conjunction with ruling on IEX's exchange application, the Commission issued an Interpretation Regarding Automated Quotations Under Regulation NMS (the "Interpretation"), discussed further below.[10] The Interpretation determined that the term "immediate" as used in the definition of "automated quotation" under Regulation NMS does not by itself "prohibit a trading center from implementing an intentional access delay that is *de minimis* – i.e., a delay so short as to not frustrate the purposes of Rule 611 by impairing fair and efficient access to an exchange's quotations."[11] The Commission determined that IEX's speed bump was consistent with this standard because it is "well within geographic and technological latencies experienced

[9] Securities Exchange Act Release No. 78101, 81 FR 41142, 41154-60 (June 23, 2016) ("IEX Approval Order").
[10] Securities Exchange Act Release No. 78102, 81 FR 40785 (June 23, 2016) ("Interpretation Order").
[11] Id. at 40792.

today that do not impair fair and efficient access to an exchange's quotations or otherwise frustrate the objectives of Rule 611."[12]

The Commission declined to set a hard limit in terms of the length of a delay that would be considered *de minimis*. However, concurrent with the Interpretation, SEC staff issued guidance indicating that, in its view, based on the current market structure, a delay of less than one millisecond would be consistent with this standard.[13]

Use of the IntelligentCross Delay by Different Types of Market Participants

Based on the above summary of IntelligentCross's matching process, orders to both post and access displayed quotes are subject to a delay of up 900 microseconds, which is imposed after IntelligentCross receives at least two orders that it determines can be matched with each other. During this delay period, the Order Book can continue to receive additional orders (to provide and to take liquidity) before a match takes place, and orders that have been submitted can be canceled before the execution, or "match event", occurs.

Certain commenters on the Proposal object that this ability to cancel orders during the delay provides a "free option" for liquidity providers, giving them an impermissible advantage over liquidity takers. In response, IntelligentCross acknowledges that an option to cancel exists but notes that it is equally available to liquidity makers and takers.[14]

We think the more salient question is not whether this ability to cancel orders after their arrival on the Order Book creates an undue advantage for liquidity makers over takers, but whether it creates unfair discrimination in favor of faster market participants, whether they are seeking to provide or take liquidity. The distinction from other markets that have protected quotes today is that on those markets orders to post and take liquidity are subject to execution with other orders at the moment that they enter each market's matching systems. In this case, the question is whether a participant could send a liquidity providing or taking order to gain access to the Order Book, while potentially being able to cancel the order before the execution occurs, and after a contra order has already arrived, when it is advantageous for the sender do so.

A participant may wish to use this option, for example, if it can use fast market data and connectivity to anticipate imminent changes to the NBBO that have not yet occurred and determine whether or not to cancel its order based on that information. IEX believes it is well-established that most market participants are not able to react to market price signals within the IntelligentCross delay period, which would require aggregating market price changes from distant markets and using that information to cancel within, at most, 900 microseconds. To evaluate the potential that some participants could use this opportunity, consider that the latency distance between the Cartaret and Mahwah data centers is about 320 microseconds,

[12] IEX Approval Order, at 41162.
[13] Staff Guidance on Automated Quotations under Regulation NMS, avail. at https://www.sec.gov/divisions/marketreg/automated-quotations-under-regulation-nms.htm. .
[14] Letter from Ari Burstein, General Counsel, Imperative Execution, to Vanessa Countryman, Secretary, SEC, dated February 16, 2023 ("IntelligentCross Response Letter"), at 6.

using the fastest fiberoptic cable. This latency would be reduced for firms using the fastest wireless technology.[15]

IntelligentCross states that in January 2023 executions did not occur because of a cancelation of a resting displayed order in a small percentage of cases.[16] The potential value of this option lies in being able to determine whether or not to cancel, not just how often the option is exercised. It is difficult to predict how often cancelations might occur if IntelligentCross were to maintain a protected quote, but this is another area where more transparency would be useful.

The Potential Impact of a Randomized Delay on Accessing Liquidity Across Markets

A similar question concerns the ability of participants to route orders to access liquidity on multiple markets. This question involves the routing of large orders, often from institutional investors, in the form of IOCs or ISOs, to access protected quotes on multiple venues. When individual orders arrive earlier to markets that are closer to the sender of the order, firms using speed advantages may be able to observe these executions and cancel or reprice their quotes on more distant markets.

In order to account for these inherent geographic distances, brokers often route components of large orders by "staggering" them so that they are timed to arrive at each market virtually simultaneously. The Commission has stated that the use of these routing strategies is available through the use of "affordable and readily-available technology" and is "commonplace".[17]

It is not clear the extent to which participants could alter their routing strategies to account for IntelligentCross's randomized delay in the same way they can account for static and geographic delays. Specifically, they would not know the amount of time to account for in "staggering" the routing of their orders to IntelligentCross. If they send individual orders to arrive on all markets simultaneously, the order to IntelligentCross will be subject to a maximum delay of 900 microseconds. If the execution of the IntelligentCross order were delayed substantially longer than the minimum time required to receive execution reports from other markets, this could allow fast market participants to cancel resting orders on IntelligentCross before the execution could occur.

This issue could be ameliorated if IntelligentCross provided additional transparency regarding time bands, as proposed above. For example, if a broker knew or could readily ascertain the length of the delay in force for a stock on a particular day, the broker potentially could more readily adjust its routing so that the arrival of its order on IntelligentCross could be timed to take account of the delay.

The Potential Impact on Consolidated Market Data

Another issue warranting consideration involves the manner and time involved in incorporating IntelligentCross quote updates in consolidated market data feeds. This issue is relevant, first, because it is the inclusion of a market's quotes in consolidated data feeds that allows it to be

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[15] See Letter from John Ramsay, Chief Market Policy Officer, IEX, to Vanessa Countryman, Secretary, SEC, dated May 10, 2020, at 14.
[16] IntelligentCross Response Letter, note 30 at page 8.
[17] D-Limit Approval Order, 85 FR 54441-42.

considered a protected quotation. Also, consolidated data provides the most widely-available, common reference data set for determining the NBBO and comparing the best prices available for each stock on each market.

In adopting the MDIR, the Commission acted to strengthen the usefulness of consolidated market data by substantially enhancing the content of "core data" and replacing the existing system of monopoly processors with competing consolidators. These changes were intended in part to address concerns related to the emergence of a "two-tiered" market for data by reducing the disparity in content and latency of proprietary compared to consolidated data, such that the latter could in some contexts serve as an effective substitute for more expensive proprietary data feeds.[18] IEX has long supported efforts to improve the content and timeliness of consolidated market data, and we strongly supported the adoption of the MDIR to help achieve these goals.[19]

To understand how IntelligentCross protected quotes updates would be reflected in consolidated data, it is useful to start with the definition of "automated quotation" under Regulation NMS.[20] That provision defines an automated quotation as one displayed by a trading center that allows an incoming order to be marked as IOC and "immediately and automatically":

(i) Executes the order against the displayed quotation up to its full size;
(ii) Cancels any unexecuted portion of the order without routing the order elsewhere;
(iii) Transmits a response to the sender of the order indicating the action taken; and
(iv) Displays information that updates the displayed quotation to reflect any change to its material terms.

The definition describes in sequence the steps involved in receiving and executing an IOC order, executing it and canceling any unexecuted part, transmitting a response to the sender, and displaying any update to the protected quotation. In the case of IOC orders sent to exchanges to access their protected quotes, once the order is accepted by the exchange's systems, if it is priced to execute against an existing protected quote, the exchange "immediately and automatically" executes the order, or not, and sends a response to the sender. Contemporaneously, the exchange updates its protected quotation on its proprietary data and sends the update to the SIPs. Because these updates to the SIPs and responses to order senders are sent from the same location, there is no additional latency involved in completing that last step. Exchanges are effectively prohibited from sending updates to the SIPs any later than they send out the information on their proprietary data feeds, to avoid unduly preferencing proprietary over consolidated data.[21]

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[18] See Securities Exchange Act Release No. 90610, 86 FR 18596, 18600, 18751-59. (April 9, 2021)
[19] See Letter from John Ramsay, Chief Market Policy Officer, IEX, to Vanessa Countryman, Secretary, SEC, dated May 28, 2020.
[20] Rule 600 (b)(6).
[21] See In the Matter of New York Stocks Exchange LLC, and NYSE Euronext, Securities Exchange Act Release No. 67857 (September 14, 2012), avail. at https://www.sec.gov/litigation/admin/2012/34-67857.pdf. IntelligentCross has committed to sending its updates to the ADF no later than they are sent

In the case of an IOC sent to access an IntelligentCross protected quotation (assuming it is the first contra-side order sent to access that quote), we understand the sequence of events would be as follows:

(i) The order is received and accepted by IntelligentCross's systems;
(ii) If the order has a price that would match against the protected quote, the Order Book enters a matchable state;
(iii) After the randomized delay (up to 900 microseconds), barring a cancelation of the IOC or resting order or changes in the NBBO that cause either to be nonmarketable, the order will execute against the protected quote;
(iv) IntelligentCross will cancel any unexecuted portion and send a response to the sender; and
(v) IntelligentCross will send an update from its data center to the data center where the ADF is located, the ADF will process it and send the updated information to the SIPs, which upon receipt will in turn process it and include the update on the consolidated feeds.

In considering the overall delay in completing steps (i)-(v), the maximum amount of the randomized delay is known. But there is insufficient information in the record to evaluate the potential length of the additional delay to transmit updates to the ADF and for the ADF to deliver them to the SIPs. In responding to comments, FINRA states that the ADF is now "well-equipped to support use of the ADF by multiple market participants" and that processing latency times are significantly reduced from when the ADF was last operational in 2015. FINRA further states that it has conducted tests with IntelligentCross and that it "believes that any processing latency for the ADF generally will be in line with exchange processing latencies once IntelligentCross begins quoting on the platform."[22]

We think more transparency is necessary. If FINRA has conducted tests with IntelligentCross to ascertain the latency related to transmission from IntelligentCross to the ADF and the time for the ADF to process and publish updates, it would be useful to see a summary of the results of those tests, e.g., the median/maximum latency times. This information would be helpful, for example, in evaluating how the consolidated data feeds would reflect the state of IntelligentCross's Order Book and its protected quotes, compared to how they reflect those of other markets.

This issue is important for various reasons. For one, consolidated data is relied on to generate data disseminated on reports from market centers under Rule 605, which participants use to compare performance of difference markets. Second, it is relied on by retail investors to compare prices and determine the best available price. Finally, it is used by other trading participants to aid in making trading decisions in particular contexts. For example, IEX, like many other participants, relies on SIP data in the case of some markets to construct the NBBO

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through its proprietary data. For the reasons explained below, we think the more relevant question from the standpoint of a user of consolidated data is the point at which it is ultimately delivered to the SIPs.

[22] See Letter from Faisal Sheikh, Assistant General Counsel, FINRA, to Vanessa Countryman, Secretary, SEC, dated March 13, 2023, at 3.

and for use in making routing decisions. [23] The FINRA Filing indicates that IntelligentCross itself uses a combination of SIP and proprietary data feeds to determine the NBBO and protected quotes and to price executions.[24] Given the uncertainties around using consolidated data for IntelligentCross quotes, we expect that we would feel compelled to use proprietary data for these purposes.

Further, when participants do rely on consolidated data to make trading decisions, we believe they rely on it to provide views that are reasonably comparable across different protected quote venues. Given the factors and uncertainties described above, it seems possible that the view of IntelligentCross quotes on consolidated feeds could materially differ from those of other markets.

Further, to the extent that this concern is manifested, it seems certain that it will persist after implementation of the MDIR. As noted above, that rule is intended in part to reduce the differences between consolidated and proprietary data feeds, in terms of both content and latency, by allowing competing consolidators to aggregate and disseminate consolidated data products as efficiently as possible. After the MDIR is implemented, the data received by consolidators will continue to be subject to IntelligentCross's randomized delay as well as the delay in submitting updates through the ADF. Further, under the MDIR, the consolidators must obtain data from FINRA as the self-regulatory organization with responsibility for meeting obligations under the MDIR and the national market system plans, not directly from IntelligentCross.[25] No matter how efficient competing consolidators may be, they will not be able to avoid those limitations.

Observations About the Automated Quotation Interpretation

Various other comments on the Proposal have addressed how the Interpretation applies. An important point to note is that the Interpretation focused specifically on delays related to the two-way communication between a user that is sending an IOC and an exchange. That is, it focused on the time required to complete the first three steps of the definition of "automated quotation" itemized above – the exchange receives an IOC, executes it, and sends a response

[23] IntelligentCross notes that it relies on a combination of SIP and proprietary data in obtaining information about the NBBO.
[24] FINRA Filing, 87 FR note 27, at 79402.
[25] Rule 614(d)(1); Rule 603(b). We note that in commenting on the MDIR, FINRA raised concerns about the expense it could incur under the MDIR because of the lack of quoting participants: "However, while some FINRA members are connected to the ADF for back-up trade reporting purposes, no members use the ADF as their primary trade reporting facility, and there are currently no quoting participants. Under the Proposal, the ADF would be required to connect and provide data to all competing consolidators and self-aggregators. FINRA could potentially incur significant costs to establish and maintain this required connectivity, despite minimal fee revenue from data disseminated from the ADF given the low (currently, no) volume of regularly reported trades and lack of current quoting participants." Letter from Marcia Asquith, Executive Vice President, FINRA, to Vanessa Countryman, Secretary, SEC, dated May 26, 2020, at 4.

to the sender. The Interpretation specifically clarified that it would consider the total time required to complete those three steps in determining whether a delay is “de minimis”.[26]

The last element of the definition, the updating of protected quotes, has a different focus, because it concerns the process to update quotations that are relied on by all participants, not the time required for a user, having observed a protected quote, to access it and receive a response. As noted above, exchanges send updates to consolidated data feeds at the same time, using the same systems, and from the same location where they sent out responses to senders of orders, so there is no additional delay involved in completing that step. We are not expressing a view on how delays in updating an IntelligentCross protected quote (taking account of both the randomized and ADF-related delays), could affect the classification of the quote as an “automated quotation”. We simply note that the Interpretation did not need to, and did not, address that particular question.

<u>Concerns Related to Incentives to Register as an Exchange</u>

Various comments on the Proposal have questioned whether the regulatory provision for ATSs to obtain a protected quote through use of an external display facility is still viable, considering the changes in market structure that have occurred since that provision was adopted. We think these are reasonable questions to raise. We understand that they may go beyond the factors that affect whether the Proposal may be approved. At the same time, we think the Commission should not approve the Proposal unless it can reasonably determine that, based on the relevant facts, the ADF in this case will be substantially useful and used by market participants as a data delivery vehicle, rather than a form of passport to obtain a protected quote.

In addition, we strongly believe that, in considering the Proposal or a proposal from any venue seeking to maintain protected quotes, the Commission should, as much as possible, hold all markets to equivalent obligations on matters that directly concern how those quotes will be displayed, updated, accessed, and traded against. It is presently the case that ATSs are subject to substantially less regulation, review and oversight than registered exchanges. An ATS proposing to have its displayed quotes treated as protected is seeking to have those quotes treated on a par with those of registered exchanges. Subjecting such a proposal to a substantially lower standard of review and transparency risks tilting incentives dangerously against the exchange path. It also seems to us inconsistent with the purpose of ensuring a “level playing field” for markets performing equivalent functions. We believe that allowing a double standard in this regard would not advance the Exchange Act’s goal of promoting fair and orderly markets.

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[26] In responding to questions about which inbound and outbound delays should be considered in determining whether a delay is *de minimis*, the Commission stated: “Specifically, any intentional delay imposed by the exchange in (1) executing an immediate-or-cancel order against its displayed quotation up to its full size, (2) cancelling any unexecuted portion of such order, or (3) transmitting a response to the sender of such order, should be added together in assessing compliance with Rule 611.” Interpretation Order, 81 FR at 40791.

Conclusion

As we noted at the outset of this letter, IEX admires and commends IntelligentCross for its accomplishments in developing innovations that have provided value for market participants. At the same time, in our view the Proposal raises important factual and policy questions and concerns that call for more transparency from IntelligentCross and careful consideration by the Commission.

Sincerely,

John Ramsay
Chief Market Policy Officer, IEX