



IMPERATIVE EXECUTION

August 18, 2023

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

Re: Alternative Display Facility New Entrant (SR-FINRA-2022-032)

Dear Ms. Countryman:

Imperative Execution is writing to respond to additional comments filed since our previous letter on the FINRA proposed rule change to add the IntelligentCross ATS (“IntelligentCross”)¹ as a new entrant to the Alternative Display Facility (“ADF”).² As most of the issues raised in the two comment letters filed since our most recent letter³ reiterate the same arguments we already addressed in our previous letters,⁴ we refer back to our prior letters which describe how IntelligentCross operates and why the proposed rule change is consistent with both the spirit of, and applicable requirements under, Regulation NMS.

Significantly, as discussed in those letters, we continue to believe that: (1) the IntelligentCross ASPEN Fee/Fee quotations displayed on the ADF would meet the definition of an “automated quotation” under Regulation NMS and therefore should be considered a “protected quote”; (2) the IntelligentCross matching mechanism utilizes a matching process that provides fair and efficient access to its quotations and any delay in the IntelligentCross matching process also is *de minimis*, *i.e.*, so short as to not frustrate the purposes of Regulation NMS by impairing fair and efficient access to the IntelligentCross quotation; and (3) access to IntelligentCross’ displayed liquidity through the ADF is consistent with that of the other existing quotations displayed through exchanges, *i.e.*, the proposed rule change is consistent with the Exchange Act’s goals of fair competition among markets and the equal regulation of markets.

¹ IntelligentCross is a SEC-registered US equities Alternative Trading System (“ATS”). Imperative Execution is a financial technology company that is the parent company of IntelligentCross. For further information on Imperative Execution and IntelligentCross, see <https://www.imperativex.com/intelligentcross>.

² See SEC Release No. 34-96550 (December 20, 2022), 87 FR 79401 (December 27, 2022); see also Order Instituting Proceedings to Determine Whether to Approve or Disapprove a Proposed Rule Change Relating to Alternative Display Facility New Entrant, SEC Release No. 34-97195 (March 24, 2023), 88 FR 19173 (March 30, 2023) and Notice of Designation of Longer Period for Commission Action on Proceedings To Determine Whether To Approve or Disapprove a Proposed Rule Change Relating to Alternative Display Facility New Entrant, SEC Release No. 34-97784 (June 21, 2023), 88 FR 41710 (June 27, 2023).

³ Letter from Stephen John Berger, Managing Director, Global Head of Government & Regulatory Policy, Citadel Securities, to Vanessa A. Countryman, Secretary, Securities and Exchange Commission, dated August 3, 2023 (“Citadel Letter III”) and Letter from John Ramsay, Chief Market Policy Officer, IEX, to Vanessa Countryman, Secretary, Securities and Exchange Commission, dated August 4, 2023 (“IEX Letter II”).

⁴ See Letter from Ari Burstein, General Counsel, Imperative Execution, to Brendan Loonam, Senior Director, FINRA, dated December 15, 2022, Letter from Ari Burstein, General Counsel, Imperative Execution, to Vanessa Countryman, Secretary, Securities and Exchange Commission, dated February 16, 2023, and Letter from Ari Burstein, General Counsel, Imperative Execution, to Vanessa Countryman, Secretary, Securities and Exchange Commission, dated July 14, 2023.

We also continue to believe that the addition of IntelligentCross' displayed liquidity to the public quote through the ADF will improve market efficiency, transparency, and execution quality. We disagree with one of the commenter's claims that the fact that many market participants are currently missing or effectively "ignoring" the better prices available on IntelligentCross is at odds with the continued growth of our market share or the fact that IntelligentCross is already widely used by most major US broker-dealers and electronic trading firms.⁵ This is frankly an illogical claim, as it suggests that the broad marketplace consists of our existing subscriber base, and no benefit to other market participants or investors will be had by disseminating our quotations more broadly. Our growth has been due to our execution quality and better prices available. Disseminating the orders already displayed on IntelligentCross over the SIP would only further benefit all investors, particularly those investors who do not currently have access to our displayed liquidity.⁶

We also reject the other commenter's claim that the addition of IntelligentCross' displayed liquidity in the public quote through the ADF would result in "perverse incentives that would undermine the goal of fair and efficient markets" and "run counter to the goals of the national market system."⁷ Allowing for innovation and the introduction of competition in the displayed markets, as well as increasing access to displayed liquidity and better priced quotes to the benefit of all market participants, is what the national market system was designed to facilitate and provide. The goal of our national market system was not to protect the economic interests of one group of market participants or the current exchange status quo.

I. IntelligentCross Matching Process and Use of AI/Machine Learning

One commenter reiterates questions regarding the transparency surrounding the IntelligentCross matching process.⁸ Our previous letters on the proposed rule change provided information on numerous aspects of the matching process, and we therefore refer back to those letters, as well as information available, among other places, in our publicly posted ATS-N⁹ and on our website. With that said, the commenter now claims that because of IntelligentCross' utilization of machine learning/AI in its calculation of our matching schedules using our overnight optimization process, further information should be provided around the use of such technology.¹⁰

It is important to clarify the use of machine learning/AI in the overall IntelligentCross matching process, particularly given that it appears that the commenter misunderstands (or has seemingly chosen to ignore the facts around) such use. As we stated in our previous letters, our matching schedules are calculated using an overnight optimization process that uses, among other things, a number of historical performance measurements from prior days' matches. The optimization process uses an AI learning process, *i.e.*, our system is presented with historical data and outcomes and iteratively computes the optimal time bands that are designed to maximize price stability after trades. The calculation of our matching schedules using the

⁵ Citadel Letter III.

⁶ As we previously stated, ASPEN Fee/Fee publishes displayed prices from round lot or larger orders in over 6,625 securities daily and improves the NBBO over 4.73 million times per day (for orders of round-lot size or larger on arrival). During the first six months of 2023, approximately 86 million shares, valued at \$5.7 billion per day, were printed to the SIP at prices worse than those displayed by ASPEN Fee/Fee (as a round lot size or larger) at that time and IntelligentCross quotes were "traded-through" 453 thousand times per day on average, meaning those trades missed the best displayed prices that were available.

⁷ IEX Letter II.

⁸ *Id.*

⁹ See <https://www.sec.gov/cgi-bin/browse-edgar?action=getcompany&filenum=013-0016&owner=include&count=40>.

¹⁰ On a preliminary note, the commenter states that IntelligentCross in its most recent letter "for the first time describes the matching process as one that uses an AI learning process." It is well known in the securities industry that IntelligentCross utilizes machine learning/AI for the narrow purpose, discussed below, of calculating our matching schedules using the overnight optimization process.

overnight optimization process is the sole use of machine learning/AI in the IntelligentCross trade matching process.

The commenter points to a recent proposal by The Nasdaq Stock Market to amend the holding period for its Midpoint Extended Order Type (“M-ELO”) as a comparison to the current proposed rule change.¹¹ The Nasdaq proposal, however, utilizes machine learning differently than IntelligentCross. The Nasdaq proposal would replace the static holding period requirements for M-ELO with “dynamic” holding periods that vary on a continuous basis based on “machine learning technology” throughout the trading day. Specifically, according to the proposal, the Dynamic M-ELO system will evaluate and, as it deems necessary, adjust the length of the applicable holding periods for each symbol every 30 seconds throughout (and during) market hours, *i.e.*, the machine learning technology utilized by the M-ELO system is continually reactive to changes in the markets in real time. Unlike the Nasdaq proposal, no changes occur to the IntelligentCross matching process during the trading day due to “machine learning technology” or AI, and as we have stated previously, our matching process is not reactive to changing market conditions like other exchange order types or matching processes, *i.e.*, our trade matching process is not “driven” by AI as characterized by the commenter.

The commenter then points to a recent Commission proposal to address conflicts of interests related to the use of certain types of AI by broker-dealers and investment advisers.¹² The Commission’s proposal, however, is not focused on the type of use of machine learning/AI as utilized by IntelligentCross and that is the subject of the proposed rule change. Specifically, the proposal is focused on the use of predictive data analytics (“PDA”) by broker-dealers and investment advisers that optimize their own interests in a manner that places these interests ahead of investor interests, *i.e.*, conflicts of interest that broker-dealers may have with their clients and during investor interactions. IntelligentCross appreciates the Commission’s desire to examine the use of PDA-like technologies in such cases, and to help ensure that firms are appropriately addressing conflicts of interests associated with the use of PDA-like technologies. However, contrary to the commenter’s views, to the extent that IntelligentCross utilizes AI, it is in the direct interests of investors to achieve better quality executions, not in conflict with those interests. The application of machine learning/AI related to the IntelligentCross matching process therefore does not raise the concerns posed when using PDA as identified in the Commission proposal.

II. Non-Discriminatory Application of the IntelligentCross Matching Process

As we discussed in our most recent letter, to further the goal of fair and efficient access to quotations, the Commission adopted Rule 610 under Regulation NMS (the “Access Rule”). Among other things, the Rule requires that each trading center that displays quotations in an NMS stock through an SRO display-only facility (such as the ADF) ensure that it does not impose unfairly discriminatory terms that prevent or inhibit any person from obtaining efficient access to such quotations. We refer to our previous letter which discusses why IntelligentCross does not impose unfairly discriminatory terms in relation to the display of the IntelligentCross ASPEN Fee/Fee quotations on the ADF.

The two most recent commenters, however, continue to incorrectly claim that the IntelligentCross matching schedule benefits or favors a particular type of market participant. To be clear, the calculation and application of the IntelligentCross matching schedules using the overnight optimization process is objective and unbiased as to the participant executing orders in our system and does not discriminate in favor of any particular market participant or any category of participant. No IntelligentCross subscribers (or non-subscribers accessing IntelligentCross through a subscriber) are given any type of priority through the

¹¹ Securities Exchange Act Release No. 96600, 88 FR 1438 (January 10, 2023).

¹² Securities Exchange Act Release No. 97990, 88 FR 53960 (July 26, 2023).

matching process, and the matching process is blind to the identity of the subscriber (or non-subscriber accessing IntelligentCross through a subscriber).

Despite continued claims by one commenter to the contrary,¹³ IntelligentCross' matching process also is symmetric, *i.e.*, the match times within IntelligentCross are not chosen to favor a particular side of the trade, and the IntelligentCross ATS is designed as a market that gives both sides of the trade the same opportunity to manage their orders. Both sides of the trade – both the taker and the maker – are on equal footing for the next scheduled match while maintaining full control of their orders, and both sides can cancel or update their orders at any time prior to the match.¹⁴

In addition, as we have discussed in depth in our previous letters, IntelligentCross' ASPEN Fee/Fee's matching engine operates near-continuously and matches orders at scheduled times ("match events"). 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). Any order for a security that arrives prior to a match event for that security will be eligible to participate in the next match event by interacting with existing orders in the order book within the time band for that security. A point that either has been misunderstood by commenters or effectively ignored in comments is that a market participant who sends an order to IntelligentCross does not know how much time remains before a match event may occur, and therefore how long they have – whether they are a maker or taker – to cancel or amend their order. For example, a market participant may be entering an order with 10 microseconds or 550 microseconds remaining before a match event takes place, if the stock has a time band of 525-575 microseconds for that day. This feature contributes to the non-discriminatory nature of the IntelligentCross matching process as no information is provided to any market participant regarding the status (or existence) of the matchable state or the match event.

Similarly, one commenter continues to question the randomization of the IntelligentCross matching process, and claims that such randomization would make the dissemination of protected quotes less predictable.¹⁵ The IntelligentCross matching process does not involve simplistic predictability, which is what the commenter seems to be demanding. The absence of complete predictability, and the randomization of the matching process within the match event band throughout the course of the trading day, is what contributes to our matching process not discriminating in favor of a particular market participant or category of participants, and also makes any would-be manipulation of the matching process difficult by reducing the potential for "systematical gaming." To reiterate what we have stated in our prior letters, there is nothing requiring that market participants be able to account for IntelligentCross' randomized delay in the same way they can account for other delays and we again reject the commenter's arguments that any challenges posed by the randomized delay rise to the level of impeding fair and efficient access to quotations.

Finally, it is important to note that IntelligentCross has policies and procedures in place to oversee and to review the calculation and application of our matching schedules. Among other things, IntelligentCross performs reviews on a daily basis to ensure that our matching schedule parameters are within the correct time bands and that there are no anomalies outside a tolerance time band before those matching schedules

¹³ Citadel Letter III.

¹⁴ The same commenter reiterates claims around what they consider to be the "inaccessibility" of quotes in the unlikely scenario posed by the commenter when IntelligentCross is addressing a locked market. Citadel Letter III. The commenter states that it would expect "price sliding" and the scenario they set forth to occur far more often if the proposed rule change is approved. There is no proof, however, that any change in trading activity on IntelligentCross would result in such an outcome. In addition, there is no guarantee that the commenter's scenario will play out as it states, *i.e.*, that the bid and offer on IntelligentCross will end-up matched together at the end of the next match event, as one side may cancel before the match event occurs. Conversely, there is no guarantee that an order attempting to access the displayed quote will not be filled.

¹⁵ IEX Letter II.

are utilized during the trading day; a principal signs off that such review was performed. IntelligentCross also, on a weekly basis, reviews system performance to ensure that it is accomplishing its objectives and to ensure that the matching process does not act in a discriminatory manner in favor of or against any participant or category of participants.

III. No “Regulatory Arbitrage” Would Occur with an IntelligentCross Protected Quote

One commenter again raises questions surrounding the process in connection with potential changes to IntelligentCross’ operations and fees associated with displaying protected quotations on the ADF, as well as what they characterize as the potential for “regulatory arbitrage.”¹⁶ We are not going to repeat our comments surrounding any review process, as we have stated several times that IntelligentCross does not object to a review process on par with other venues currently providing a protected quote (*i.e.*, exchanges) through which the Commission may provide an opportunity for notice and comment.

As far as any “regulatory arbitrage” or “double standard” in the treatment of exchanges compared to ATSS that the same commenter claims may occur upon approval of the proposed rule change, it is important to clarify its observations regarding Regulation SCI. Specifically, IntelligentCross met Regulation SCI thresholds earlier this year, and therefore became subject to Regulation SCI. As of August 1, 2023, IntelligentCross has been required to comply with the requirements of Regulation SCI including obligations related to capacity, integrity, resiliency, availability, and security of our systems, as well as operational capability.

IV. Ability of Participants to Adapt to and Account for the IntelligentCross Matching Process

One commenter continues to “move the goalposts” in their argument surrounding the ability for market participants to adapt to certain aspects of the IntelligentCross matching process. In their first letter, the commenter argued that “[i]t is not clear the extent to which participants could alter their routing strategies to account for IntelligentCross’ randomized delay in the same way they can account for static and geographic delays.”¹⁷ We noted in our most recent letter that our matching process would not prevent participants from utilizing strategies to account for an IntelligentCross protected quote and given routing tools that are available, participants should not have difficulty in adapting to the IntelligentCross matching process (to the extent they are not utilizing the process already). We also noted that, significantly, there is nothing requiring that market participants be able to alter their routing strategies to account for IntelligentCross’ randomized delay in the same way they can account for other delays.

The commenter now states that “the question is not whether participants are presently able to adapt to timing differences on various markets, but whether the variability of the IntelligentCross delay would pose unique challenges in doing so.”¹⁸ We disagree with the commenter. The relevant question is, in fact, whether market participants can adapt to the IntelligentCross matching process and whether IntelligentCross is providing fair and non-discriminatory access to our quotations. The answer is yes.

The commenter adds that the ability of different participants to react to market price movements in deciding whether to cancel an order on IntelligentCross is “a challenge that market participants do not face in managing the orders that they send to other markets with a protected quote.” The commenter then again compares its “Signal” (*i.e.*, the “Crumbing Quote Indicator”) to the IntelligentCross matching process to

¹⁶ IEX Letter II.

¹⁷ Letter from John Ramsay, Chief Market Policy Officer, IEX, to Vanessa Countryman, Secretary, Securities and Exchange Commission, dated April 14, 2023 (“IEX Letter I”).

¹⁸ IEX Letter II.

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attempt to support its comment regarding the ability to route and cancel an order on IntelligentCross. This is not an apples-to-apples comparison. The operation and behavior of the commenter's Signal is not the same as the IntelligentCross matching schedule, and how orders behave around the Signal is not prima facie evidence on how orders will behave with an IntelligentCross protected quote. We therefore do not agree that it is "reasonable to conclude" how market participants will interact with an IntelligentCross protected quote based on experience with the commenter's Signal. More importantly, the fact that market participants may not face the same issues in routing to one venue over another due to differences in those venues is not determinative of whether fair and non-discriminatory access is being provided to a protected quote.

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IntelligentCross continues to believe that adding its displayed liquidity to the markets as a protected quotation would not only be beneficial to the markets but is consistent with, and would satisfy, the applicable requirements under Regulation NMS. Please do not hesitate to contact the undersigned at ari.burstein@imperativex.com should you have any additional questions regarding this matter.

Sincerely,



Ari Burstein
General Counsel
Imperative Execution

cc: The Honorable Gary Gensler, Chair
The Honorable Hester M. Peirce, Commissioner
The Honorable Caroline A. Crenshaw, Commissioner
The Honorable Mark T. Uyeda, Commissioner
The Honorable Jaime Lizárraga, Commissioner
Haoxiang Zhu, Director, Division of Trading and Markets