



August 4, 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 providing additional 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 quotations” under Rule 611 of Regulation NMS. IEX submitted previous comments on the Proposal,¹ and IntelligentCross recently has submitted a letter responding to comments from IEX and others.² This letter provides additional comments and summarizes our views on the Proposal, having considered that response. Unless otherwise defined, capitalized terms in this letter have the same meanings assigned to them in our First Comment Letter.

Summary

IEX believes that FINRA and IntelligentCross have not established that the Proposal meets the standards required for approval, in light of the concerns raised by commenters. We believe that including Intelligent Cross quotes as protected would make the dissemination of and access to protected quotes more complicated and less predictable than is the case today. Finally, we believe adopting the Proposal would effectively apply different requirements to protected quotes published by exchanges compared to ATSS, resulting in perverse incentives that would undermine the goal of fair and efficient markets.

The following summarizes our views on each of what we view to be the most salient concerns raised by the Proposal.

Intelligent Cross Matching Process

There are meaningful differences between the matching process proposed to be used by IntelligentCross and the processes used by all other markets with protected quotes today. IntelligentCross does not deny that the differences exist but suggests that they are not material to deciding whether the quotes should be treated as protected. We disagree.

¹ Letter from John Ramsay, Chief Market Policy Officer, IEX, to Vanessa Countryman, Secretary, SEC, dated April 14, 2023 (“First Comment Letter”).

² Letter from Ari Burstein, General Counsel, Imperative Execution, to Vanessa Countryman, Secretary, SEC, dated July 14, 2023, avail. at <https://www.sec.gov/comments/sr-finra-2022-032/srfinra2022032-224439-469862.pdf> (“Response Letter”).

IEX believes the matching process that would be used for the Order Book is relatively opaque and unpredictable compared to other markets with protected quotes. In the case of all other markets, when IOCs are sent to access protected quotes, they will execute against any displayed quotes or other matchable resting orders that exist on the order book at the time the IOCs are received and accepted by the venue's systems. This is equally true of IEX's displayed D-Limit orders, which can be repriced in discrete moments based on a system-generated Signal that uses a fully-disclosed algorithm detailed in IEX's rules. Any IOCs execute against any matching D-Limit or other resting orders on the order book when the IOCs arrive.

As described by IntelligentCross, upon the arrival of the first contra-side order (including an IOC) that is eligible to match with a displayed 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 that occurs within the time band that applies to that security on that particular day. Time bands, which can range from 150 to 900 microseconds, are set on a daily basis for each security based on an "overnight optimization process" using "historical performance measurements." During the delay, orders for each security will continue to be accepted and will be executed on a price/time priority basis. Orders that are otherwise matchable may not execute if there are certain changes in the NBBO that occur during the delay, or if either displayed or taking orders are canceled before execution.

To summarize, on all markets with protected quotes today, an "immediate or cancel" order sent to access a protected quote will execute against any matching trading interest that is resting on the order book at the moment the order arrives. The same order, if sent to access an IntelligentCross protected quote, will not execute "immediately" and may not execute at all, depending on market price movements or cancelations that occur during a variable and unpredictable delay. Next, we address concerns about how that delay is determined.

Transparency and the Use of Artificial Intelligence

IEX commented that it believes IntelligentCross should provide greater transparency about this process, including the inputs and formula(s) that would determine the time bands to be applied. In response, IntelligentCross for the first time describes the matching process as one that uses "an AI learning process". It argues that, given the nature of the process, there are no formulas or weights for individual factors to disclose. It further states that this process "implicitly" takes into account various market factors, which "are adjusted overnight after enough data points have been accumulated to warrant an adjustment."³

IEX believes this response is not adequate. We believe that any trade matching or other computerized process, including one that is driven by artificial intelligence, or "AI", can be detailed and explained in terms of the rules, parameters, and inputs that are part of its design. The use of AI by financial intermediaries raises a host of important policy questions.⁴ The

³ Id. at 11.

⁴ See, e.g., Gensler and Bailey, "Deep Learning and Financial Stability" (2020), avail. at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3723132.

Commission has recently proposed rules to address conflicts of interests related to the use of certain types of AI by broker-dealers and investment advisers.⁵ FINRA itself has published a detailed report discussing concerns with the use of AI in the securities industry.⁶

IEX believes the need for careful scrutiny is especially important when AI is used to affect access to protected quotations. For this reason, we think the application of AI to this matching process does not obviate the need for more inquiry and disclosure, but instead demands it.

In this respect, it is worth comparing the proposal by The Nasdaq Stock Market to amend its Midpoint Extended Order Type (“M-ELO”).⁷ The M-ELO order type is a non-displayed order priced at the midpoint of the NBBO and which is eligible for execution only against other eligible M-ELO orders and only after a minimum holding period, measured from the time that Nasdaq’s system accepts the order, has elapsed. Since its inception, this holding period has been periodically adjusted but has always been constant. Nasdaq has proposed to apply specified “machine learning technology” to vary the length of this holding period on a continuous basis.

In response to public comment,⁸ Nasdaq has provided various additional information about how this technology would operate, including identification of 142 different factors and how they are incorporated and has published a detailed White Paper that provides further explanation. Still, the proposal has drawn critical comment arguing for the need for further transparency and raising concerns about, among other things, the potential use of firm-specific data to inform the results, the potential for bias and unfairness as applied to specific counterparties or types of counterparties, and whether the exchange is using inappropriate discretion to set the terms under which individual orders may execute.⁹

In contrast, the concern with the IntelligentCross Proposal is not that it has provided insufficient transparency about how it would use AI, but that it has provided none. Nasdaq, as an exchange, is required to detail its matching process in its rules, and as we have previously commented, any ATS seeking a protected quote should be subject to an equivalent standard of transparency. The other relevant distinction is that M-ELO is a dark order type. IEX believes that the need for full transparency and close scrutiny is more pronounced, not less, when the question concerns the use of AI to determine whether and when market participants may execute against protected quotes, which also necessarily affects how the NBBO is determined.

⁵ Securities Exchange Act Release No. 97990 (July 26, 2023), avail. at <https://www.sec.gov/files/rules/proposed/2023/34-97990.pdf>.

⁶ FINRA, “Artificial Intelligence in the Securities Industry” (June 2020), avail. at <https://www.finra.org/sites/default/files/2020-06/ai-report-061020.pdf>.

⁷ See Securities Exchange Act Release No. 96600, 88 FR 1438 (January 10, 2023).

⁸ See comment file at <https://www.sec.gov/comments/sr-nasdaq-2022-079/srnasdaq2022079.htm>.

⁹ See Letter from R.T. Leuchtkafer to Vanessa Countryman, Secretary, SEC, dated May 30, 2023, avail. at <https://www.sec.gov/comments/sr-nasdaq-2022-079/srnasdaq2022079-196599-391082.pdf>. In terms of bias, for example, the commenter notes that the use of “machine reinforcement learning” can result in changes that reflect a bias in favor of or against particular participants, depending on how it is designed and how that participant’s activity is reflected in the AI learning process. *Id.* at 2-3, 7-8 (citing Gensler and Bailey, footnote 4, *supra*).

In sum, we think that market participants need enough detail and information so that those who wish to do so can replicate how the mechanism will affect results in various market conditions, as they can today for other protected quotes. Further, we believe that IntelligentCross should need to explain why its proposed application of AI in displaying and accessing protected quotes does not raise the general concerns posed by the use of AI identified above, or else how it mitigates those concerns.

Ability of Participants to Account for and Use the Delay

IEX also raised related concerns about the potential for uncertainty in routing by market participants to multiple markets and the relative ability of market participants to cancel their orders before the expiration of the randomized delay.

On the first point, IntelligentCross asserts that the matching process would not prevent participants from “staggering” their routing to obtain liquidity on multiple markets at a certain price level, and given routing tools that are available, a participant “should not have difficulty” in adapting, noting that market participants already use methods to manage order routing on the scale of hundreds of microseconds.

We believe 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. In this case, the maximum delay is 900 microseconds and the minimum is 150 microseconds. If a firm routing to multiple markets sends a “child order” to IntelligentCross 900 microseconds before sending to other markets, and the actual delay is closer to the minimum part of the range, the execution of the order risks leaking information to other participants, who may adjust their quotes on other markets in response. If the firm instead sends the order 150 microseconds sooner than it sends to other markets and the actual delay is closer to the maximum end of the range, the order will fail to execute if, among other things, the displayed quote is canceled during the delay period.

In response to the concern about the relative ability of different types of participants to take advantage of the delay to cancel their orders, IntelligentCross reiterates that non-match events occur in a minority of cases, the protected quote regime does not guarantee an execution, and both makers and takers have the ability to cancel their orders during the delay.

While it is true that routing to a protected quote does not guarantee an execution, we think the relevant question is the relative ability of different participants to react to market price movements in deciding whether to cancel, after their orders have been accepted by IntelligentCross’s systems and during the delay before execution. This is a challenge that market participants do not face in managing the orders that they send to other markets with a protected quote.

In considering both of these concerns – the impact on the ability to route and on the ability to cancel – it is useful to compare the 750-microsecond spread between the lower and upper limits of the variable delay to the time required for the fastest participants to react to price changes affecting the NBBO across all markets. IEX has designed the Signal to “fire” based on

predictions of price changes occurring over two milliseconds. In supporting use of its D-Limit order type, IEX provided data showing that, of the “aggressively” priced orders arriving within two milliseconds of the Signal “firing”, the overwhelming proportion arrived within 500 microseconds after the Signal fired, and of these, the peak of this activity occurred within 200-250 microseconds. Further, the data showed that only a small number of firms demonstrated the ability to react to pending price changes on this sub-millisecond time scale.¹⁰

We believe this data helps to show that, while some participants can anticipate changes in the NBBO on this timescale and cancel orders in reaction, most cannot. Thus, we think it is reasonable to conclude that some, but not most, participants could use their superior ability to track price changes on other markets within the variable delay period to determine whether to cancel their orders.

Updating IntelligentCross Quotes in Consolidated Data

In its earlier letter, IEX raised the concern that IntelligentCross quotes would be slow to be updated on the SIP data feeds, taking into account both the IntelligentCross delay and the time to communicate updates to the ADF and for FINRA to relay the same information to the SIPs. We suggested that IntelligentCross and/or FINRA should provide additional information on the time required to reflect updated quotes, and we noted that the MDIR reforms contemplate the ability of competing consolidators to obtain data as quickly as possible, directly from market centers.¹¹

In response, IntelligentCross reiterates that it has committed to providing quote updates to the ADF no later than when they are disseminated via its proprietary data feed. It also references FINRA’s previous statement that it believes any processing latencies “will generally be in line with exchange processing latencies.”

We continue to think more transparency is needed. Market participants care about how efficiently quote updates will be provided to the SIPs and become visible on the tape, rather than when IntelligentCross sends updates to the ADF. For its part, FINRA has said that it “continues to test” with IC and “will aim to address” any resulting issues prior to IntelligentCross becoming an ADF participant.¹² Respectfully, we think that response does not sufficiently answer the question.

¹⁰ See Letter from John Ramsay, Chief Market Policy Officer, IEX, to Vanessa Countryman, Secretary, SEC, dated May 10, 2020, at 12-14, avail. at <https://www.sec.gov/comments/sr-iex-2019-15/sriex201915-7169827-216633.pdf>.

¹¹ In our earlier letter, IEX also noted that the Commission’s Automated Quotation Interpretation did not address the impact of delays in updating quotes in consolidated data on the ability of a quote to qualify as an automated quotation under Rule 600(b)(6) of Regulation NMS. First Comment Letter, at 9-10. IntelligentCross did not address this issue in its Response Letter.

¹² Letter from Faisal Sheikh, Assistant General Counsel, FINRA, to Vanessa Countryman, Secretary, SEC, dated March 13, 2023, avail. at <https://www.sec.gov/comments/sr-finra-2022-032/srfinra2022032-20159587-327597.pdf>.

Operational and Fee Changes

Exchanges are required to make filings with the SEC with respect to every change to their operations and their fees, which are then subject to public notice and comment. IEX and other commenters have argued that changes to IntelligentCross operations and fees should similarly be subject to filing, notice and review, potentially through rule filings made by FINRA.¹³

In response, IntelligentCross said it “agrees that this is one of the methods” by which review of “material” changes could be accomplished. It does not, however, offer suggestions about how the filing and review process would work or suggest any other methods that could be used. More important, relying on FINRA for this purpose would require some commitment by FINRA, but there is nothing in the record to indicate whether FINRA would be willing to undertake this obligation, and if so, how it would define the scope of the obligation, including how it would determine which changes were material, when filings would be triggered, and how the obligation would be enforced. For these reasons, this issue remains unresolved.

In terms of operational standards, we also note that, unlike other markets with protected quotes, IntelligentCross will be subject to Regulation SCI only to the extent its share volume exceeds thresholds identified in that set of rules. IntelligentCross has stated that it does not object to being subject to Regulation SCI, but every other market with a protected quote is subject to those standards regardless of its share volume.¹⁴

Regulatory Arbitrage

In our earlier letter, we commented that approval of the Proposal on the terms proposed would result in a double standard in treatment of exchanges compared to ATSS that have protected quotes. This concern ties back to all the other concerns identified above – transparency around the matching process, the ability to cancel orders that are matchable and have been accepted by the system, the efficiency with which quotes are updated on the SIPs, and the lack of a process to review changes to operations and fees. Though IntelligentCross did not address this

¹³ As one example of why such review is needed, IntelligentCross states in its Response Letter that it “does not tier or discriminate among subscribers.” At the same time, it reveals in the same letter that it allows subscribers to pay lower transaction fees based on a “Total Composite Volume (TCV) Incentive”, based on volume by a subscriber in relation to total volume in all NMS Stocks reported to the consolidated tape. This type of tiered pricing is highly controversial (IEX among others have raised concerns about the anticompetitive impact of tiered pricing), and the Commission recently has indicated it is considering rulemaking to limit its use.

¹⁴ See 17 CFR 1000 (Definition of “SCI alternative trading system”).

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point specifically, we think it bears repeating. As Chair Gensler has emphasized in various contexts, a guiding principle for regulation is to “treat like functions alike”.¹⁵ IEX believes that approving the Proposal on the terms proposed would violate that principle, set a bad precedent, and run counter to the goals of the national market system.

Sincerely,



John Ramsay
Chief Market Policy Officer, IEX

¹⁵ See, e.g., “The Beatles and the Treasury Market: Remarks Before the Treasury Market Conference”, December 9, 2021, avail. at <https://www.sec.gov/news/speech/gensler-speech-treasury-market-conference-111622>.