

EXHIBIT 2

Request for Comment Regarding Auctions for IEX-listed Securities
Emailed on November 14, 2016

IEX Market Participants,

To deliver the best possible experience on Investors Exchange ("IEX"), the team believes our market must grow and evolve with the benefit of input from a broad range of participants including current Members, future Members, and constituents outside the broker-dealer community. Therefore, we periodically reach out to IEX Members and market participants to solicit feedback and engage in dialogue regarding IEX Product Enhancement Proposals in what we call "IEX PEP Talks".

Thank you for taking the time to read this IEX PEP Talk regarding our proposed auction design for IEX listed securities.¹ Please note that the proposal described in this IEX PEP Talk is subject to filing with and approval by the Securities and Exchange Commission ("SEC") pursuant Section 19(b) of the Securities Exchange Act of 1934 ("Exchange Act"). Subject to such approval, our targeted release time frame for auction functionality is currently Q1 2017 for test securities and July 2017 for non-test securities, but is subject to change.

Below is a summary of each proposed auction with requests for feedback. Additionally, a draft IEX Auction Specification is attached for participants who like to dive into the details.

We are interested in all feedback, thoughts, and questions. All feedback must be received by Friday, November 18. In accordance with the SEC rule filing process, all written comments will be included in the public rule filing IEX submits to the SEC for attribution as submitted by the commenter. IEX encourages Members to contact their IEX Sales representative to schedule a discussion with the IEX Auction design team. Other market participants may contact 646.343.2100 or subscriber@iextrading.com.

Important note: IEX may revise the proposed auction design described herein in response to comments and feedback received in response to this IEX PEP Talk or otherwise.

Background

IEX received feedback from the industry on background throughout the IEX Auction design phase that encouraged our team to consider incorporating the strengths of other auctions around the world into our auction. The IEX Auction design considered the following:

- Nasdaq: Precise timing of opening and closing auction execution; complete information in the auction imbalance feed

- NYSE: Order entry after cut-offs vis-à-vis D-quotes in the Closing Auction
- Bats: Documented specification; robust contingency procedures for each auction type
- European Exchanges: Uninhibited order entry; continuous feedback via market data feeds

Introduction

As proposed the Investors Exchange (“IEX”) Auction Process would be designed to provide electronic price discovery mechanisms that efficiently match orders in IEX listed securities at a single price using a Double auction. These auctions would enable IEX participants to execute against other opening or closing interest at IEX (Opening Auction and Closing Auction, respectively). They would also allow for participation in IEX corporate IPOs, new issues (e.g., Exchange Traded Products) (collectively, IPO Auction), auctions resulting from security halts (Halt Auction), and auctions resulting from limit up-limit down (“LULD”) trading pauses (Volatility Auction). During the auction process, IEX would calculate and disseminate current price, size, imbalance information, and auction collar information, as described below. The following describes proposed functionality for IEX Auctions.

Scope

Only IEX listed securities would be eligible for IEX Auctions. Listings on IEX would be eligible for the Opening and Closing Auctions either after the IPO Auction on IEX or after the listing has transferred to IEX from another listing exchange. On-open and on-close orders submitted for non-IEX listed securities would be rejected.

In general, orders on the continuous order book and orders queued prior to the auction (collectively, the “IEX Order Book”) would be eligible for the auction match. Orders on the continuous order book and orders queued prior to the auction (“Auction Book”) would be consolidated to calculate the single clearing price for the Opening/Closing Auction. For all other auctions where there is no continuous trading prior to the auction (e.g., Halt Auction), orders queued prior to the auction would be used to calculate the single clearing price for the auction.

Pegged orders would not be eligible for the Opening/IPO/Volatility/Volatility Closing Auction. Non-displayed interest resting on the continuous order book at the time of a halt/pause dissemination would not be eligible for the Halt/Volatility/Volatility Closing Auction. Minimum Quantity orders and orders marked with a TIF of “Fill-or-kill” would not be eligible for any IEX Auction.

Opening and Closing Auction

IEX would accept on-open and on-close order types beginning at 8:00 a.m. which are executable only during the Opening and Closing Auction, respectively. Leading up to the auction, IEX would disseminate information about order imbalances in the IEX Order

Book, with an indicative opening/closing price and collar information. Please see the IEX Auction Specification for more details about the "Opening/Closing Auction Collar".

At 9:30 a.m., the Opening Auction Book and continuous book would be consolidated to create a single IEX opening price. IEX opening prices would be disseminated to the consolidated tape immediately after the Opening Auction.

At 4:00 p.m., the Closing Auction Book and continuous book would be consolidated to create a single IEX closing price. IEX closing prices would be disseminated to the consolidated tape immediately after the Closing Auction.

The Opening Auction would set the IEX Official Opening Price. If an issue does not have an Opening Auction, the IEX Official Opening Price would be determined by the initial (i.e., first) last-sale eligible trade on IEX reported at or after 9:30 a.m., when regular trading hours begins. The Closing Auction would set the IEX Official Closing Price. If an issue does not have a Closing Auction, the IEX Official Closing Price would be determined by the final last-sale eligible trade reported. See the IEX Auction Specification for definitions of initial last-sale eligible trade and final last-sale eligible trade.

Opening and Closing Order Types

Market-On-Open ("MOO") and Limit-On-Open ("LOO") orders would allow market participants to specifically request an execution at the opening price. For the purposes of the Opening Auction, regular-hours orders (TIF of "DAY" or "GTX") entered prior to 9:29:50 a.m. would be treated the same way as on-open orders.

Market-On-Close ("MOC") and Limit-On-Close ("LOC") orders would allow market participants to specifically request an execution at the closing price. On-close orders would be accepted between 8:00 a.m. and 3:50 p.m. (MOC orders) / 3:59:50 p.m. (LOC orders).

Auction Times

- 8:00 a.m. – The IEX Pre-Market Session begins and order acceptance would begin for Opening and Closing Auctions.
- 9:28 a.m. – Dissemination of Opening Auction information would begin. On-open orders would be locked into the Auction Book until the auction match, and new on-open orders priced more aggressively than the Opening Auction collar would be rejected upon receipt (e.g., LOO buy order with a limit price higher than the latest Upper Auction Collar, a MOO order).
- 9:29:50 a.m. – New on-open orders would be locked out of entering the Auction Book (rejected upon receipt). To participate in the auction, orders must be entered on the continuous book.
- 9:30 a.m. – The Opening Auction match would occur and the Regular Market Session would begin.

- 3:50 p.m. – Dissemination of Closing Auction information would begin. On-close orders would be locked into the Auction Book until the auction match, and new on-close orders priced more aggressively than the Closing Auction collar would be rejected upon receipt (e.g., LOC buy order with a limit price higher than the latest Upper Auction Collar, a MOC order).
- 3:59:50 p.m. – New on-close orders are locked out of entering the Auction Book (rejected upon receipt). To participate in the auction, orders must be entered on the continuous book.
- 4:00 p.m. – The Closing Auction match would occur, or dissemination of the IEX Official Closing Price in the event of no Closing Auction, and the Post-Market Session would begin.
- 5:00 p.m. – The IEX Post-Market Session ends.

IEX Auction Information

The IEX Auctions are designed to provide transparency of order imbalances, indicative clearing prices, and applicable collars via IEX Auction information. The data feed, to be called the Auction Information Message ("AIMM"), would be disseminated as a separate feed, via the IEX Top of Book and Last Sale Feed ("TOPS"), and on the IEX website. IEX anticipates that AIMM data would also be disseminated by numerous market data distributors, and service bureaus.

AIMM would include the following data elements:

- Reference Price: A price within the NBBO at which paired shares from orders on the continuous order book and orders on the Auction Book (collectively, the "IEX Order Book") are maximized, the imbalance is minimized, and the distance from the midpoint of the NBBO is minimized, in that order.
- Paired Shares: The number of shares on the IEX Order Book that IEX is able to pair off at the Reference Price.
- Imbalance Shares: The number of shares on the IEX Order Book that would remain unexecuted at the Reference Price.
- Imbalance Side: The side of the imbalance (B = buy-side imbalance; S = sell-side imbalance; N = no imbalance).
- Indicative Clearing Price: The price at which orders on the IEX Order Book would clear against each other. This price is calculated at or within the applicable auction collar for the Opening/Closing Auction.
- Auction Book Clearing Price: The price at which orders on the Auction Book would clear against each other.
- Collar Reference Price: The price from which the applicable collar for an auction was calculated.
- Lower Auction Collar: The price of the latest lower threshold of the applicable collar for an auction.
- Upper Auction Collar: The price of the latest upper threshold of the applicable collar for an auction.

The information would be disseminated every one second between 9:28 a.m. and the Opening Auction match for the Opening Auction, and 3:50 p.m. and the Closing Auction match for the Closing Auction.

IPO and Halt Auction

IEX IPO and Halt Auctions are designed to provide fair executions for market participants through an open and transparent process that creates a single price for halt resumptions and IPOs based on supply and demand.

The IEX IPO and Halt Auctions are designed to:

- Provide fair executions at a single price that maximize volume and are reflective of supply and demand in the market.
- Promote transparency for halt resumptions and IPOs by disseminating timely imbalance information to investors.
- Create an open process in which all investors have the ability to enter orders and participate in price discovery.

IEX would accept orders for an IPO auction beginning at the start of the Pre-Market Session and for Halt Auctions beginning 5 minutes prior to the Halt Auction match (the "Order Acceptance Period"). Orders would be able to be canceled at any time. No executions would occur before the halt resumption.

All orders eligible for an auction would contribute to the IEX Auction information. Dissemination of IEX Auction information would begin 30 minutes prior to an IPO Auction and 5 minutes prior to a Halt Auction. Clearing price and imbalance information would be disseminated, however no collars would be used for either the IPO Auction or the Halt Auction.

IEX would extend the Order Acceptance Period, if necessary. Volatility during the Order Acceptance Period would result in a 5-minute (IPO) or 1-minute (Halt) automatic extension of the Order Acceptance Period. Specifically, an extension would be triggered by a market order imbalance or a movement of 5% or \$0.50 (whichever is greater) based on the price immediately prior to the auction and any of the last fifteen price disseminations.

Volatility Auction

Pursuant to Amendment 12 of the LULD Plan and the recent filings from NYSE Arca, the Nasdaq Stock Market, and Bats BZX Exchange, IEX would also support a unified auction design to resume trading after an LULD trading pause. The Volatility Auction contains the same mechanisms of a Halt Auction with the following features:

- A Volatility Auction Collar would be established based on the LULD Price Bands at the time of the pause (please read the specification for more details on the

- "Volatility Auction Collar").
- Extensions could also occur if the clearing price is at an Impermissible Price (either an Indicative Clearing Price outside the Volatility Auction Collar or unmatched market order shares at the time of the auction match).
 - The Volatility Auction Collar would be adjusted at the start of any Order Acceptance Period extension by the greater of 5% or \$0.15 in the direction of the Impermissible Price.
 - Extensions would be 5-minutes in duration and continue until a clearing price is determined within the collar.

Volatility Closing Auction

If an LULD trading pause exists at or after 3:50 p.m. and before the Closing Auction, the Closing Auction would be converted into a Volatility Closing Auction and would be conducted at 4:00 p.m. At the later of 3:50 p.m. or the pause dissemination, all pegged orders and non-displayed DAY orders on the continuous book would be canceled, as they are ineligible for the Volatility Closing Auction.

- A Volatility Auction Collar would either be established based on the LULD Price Bands at the time of the pause (pause initiated at or after 3:50 p.m.) or the existing Volatility Auction Collar from the preceding Volatility Auction would be used (pause initiated prior to 3:50 p.m.).
- On-close orders would be locked into the Auction Book until the auction match, and new market orders would be rejected upon receipt (e.g., MOC, market IOC).
- The Volatility Auction Collar would be adjusted at the start of any Order Acceptance Period extension by the greater of 5% or \$0.15 in the direction of the Impermissible Price.
- Extensions would be 5-minutes in duration and continue until a clearing price is determined within the collar.

The Volatility Closing Auction would set the IEX Official Closing Price. If an issue does not have a Volatility Closing Auction (e.g., there is insufficient interest to conduct an opening auction), the IEX Official Closing Price would be determined by the final last-sale eligible trade reported.

Contingency Procedures

IEX believes that a listing market should have transparent and robust procedures which describe what the exchange will do in the unfortunate circumstance that its system cannot conduct an auction. Accordingly, IEX has developed proposed contingency procedures, as described below.

Overview

In the event of systemic issues, IEX would utilize either the Primary or Secondary

Contingency Procedures, as described below. The determination to use the Primary or Secondary Contingency Procedures will be made by the President of IEX or any Senior Vice President designated by the President. IEX would publicly announce at the earliest possible time the initiation of the Primary or Secondary Contingency Procedures via a System Status, Trading Alert, and email notification to Members and other market participants.

IEX would utilize the Primary Contingency Procedures if at all possible, and would utilize the Secondary Contingency Procedures only if it determines that both the standard closing procedures and the Primary Contingency Procedures are unavailable.

If IEX utilizes the Primary Contingency Procedures for the Opening Auction, the Regular Market Session would begin either as scheduled at 9:30 a.m. or upon resolution of the disruption that triggered IEX to operate under the contingency procedures.

If IEX utilizes the Primary or Secondary Contingency Procedures for the Closing Auction, the Post-Market Session would begin either as scheduled at 4:00 p.m. or upon resolution of the disruption that triggered IEX to operate under the contingency procedures.

If IEX utilizes the Contingency Procedures for the Halt/Volatility Auction, trading for the security would begin upon resolution of the disruption that triggered IEX to operate under the contingency procedures. If/when the SIP supports functionality to publish LULD Price Bands upon instruction from the primary listing exchanges, then IEX would instruct the SIP to do so and trading would resume when the SIP publishes LULD Price Bands for the affected security.

If IEX utilizes the Contingency Procedures for the IPO Auction, trading for the security would begin upon resolution of the disruption that triggered IEX to operate under the contingency procedures.

Primary Contingency Procedures

In the event of systemic issues at IEX at the time of an Opening/Closing/IPO/Halt/Volatility Auction, IEX would reserve the right to utilize the following Primary Contingency Procedures.

Opening Auction

IEX would publicly announce that no Opening Auction will occur. The price of the initial last-sale eligible trade on IEX would be used for the IEX Official Opening Price, if such price is generated in the first minute of the regular market hours. The IEX Official Opening Price would be published to the Consolidated Tape. IEX would execute orders on the Auction Book at the IEX Official Opening Price, in accordance with the Opening Auction execution priority. Any unmatched shares (e.g., due to passive limits or unpaired interest) would be canceled at the conclusion of the contingency process. IEX

would report the resulting execution to the Consolidated Tape and deliver execution reports to participants.

If a security's IEX Official Opening Price cannot be determined based on this procedure (e.g., because no orders on the Auction Book are executable at that price), IEX would not publish an Official Opening Price for the security and would cancel all on-open orders on the Auction Book.

Closing/Volatility Closing Auction

IEX would publicly announce that no Closing Auction will occur. The price of the final last-sale eligible trade would be used for the IEX Official Closing Price. The IEX Official Closing Price would be published to the Consolidated Tape. IEX would execute orders on the Auction Book at the IEX Official Closing Price, in accordance with the Closing Auction execution priority. Any unmatched shares (e.g., due to passive limits or unpaired interest) would be canceled at the conclusion of the contingency process. IEX would report the resulting execution to the Consolidated Tape and deliver execution reports to participants.

If a security's IEX Official Closing Price cannot be determined based on this procedure (e.g., because no orders on the Auction Book are executable at that price), IEX would not publish an Official Closing Price for the security and cancel all on-close orders on the Auction Book.

Halt/Volatility Auction

IEX would publicly announce that no Halt/Volatility Auction would occur and IEX would open the security for trading without an auction.

If/when the SIP supports functionality to publish LULD Price Bands upon instruction from the primary listing exchanges, then IEX would immediately instruct the SIP of the issue and the SIP would subsequently publish LULD Price Bands via the Consolidated Quote System ("CQS") and the Consolidated Tape, so alternative execution venues may resume trading. IEX would cancel all orders on the IEX Order Book at the conclusion of the contingency process.

IPO Auction

IEX would publicly announce that the Order Acceptance Period for the IPO Auction will reset for the subject security. At that point, IEX would cancel all orders on the IEX Order Book and disseminate a new scheduled time for the Order Acceptance Period and auction match.

Closing/Volatility Closing Auction Secondary Contingency Procedures

If IEX publicly announces at or before 3:00 p.m. that it will employ the Closing Auction

Secondary Contingency Procedures for one or more securities, it would designate a back-up exchange for those securities, cancel all open interest designated for the IEX Closing Auction residing on the IEX Order Book in order to give participants the opportunity to route their orders to alternative execution venues, and the IEX Official Closing Price for each security would be determined based on the following hierarchy:

1. The IEX Official Closing Price would be the official closing price established for the security under the rules of the designated back-up exchange. IEX anticipates that the Nasdaq Stock Market would be the default back-up exchange for IEX.
2. If there is no official closing price in a security on the designated back-up exchange, the IEX Official Closing Price would be the VWAP of the last-sale eligible trades reported to the Consolidated Tape during the last five minutes of the Regular Market Session on that trading day, including any closing transactions on an exchange and any trade breaks or corrections up to the time the VWAP is processed.
3. If there are no last-sale eligible trades reported to the Consolidated Tape during the last five minutes of the Regular Market Session, the IEX Official Closing Price of such security would be the final last-sale eligible trade for the security on that trading day.
4. If there were no last-sale eligible trades reported to the Consolidated Tape on that trading day, the IEX Official Closing Price would be the prior day's official closing price.

If IEX publicly announces after 3:00 p.m. that it would employ the Secondary Contingency Procedures for one or more securities, it would cancel all open interest designated for the IEX Closing Auction residing on the IEX Order Book in order to give participants the opportunity to route their orders to alternative execution venues, and the IEX Official Closing Price for each security would be determined based on the following hierarchy:

1. The IEX Official Closing Price would be the VWAP of the last-sale-eligible trades reported to the Consolidated Tape during the last five minutes of the Regular Market Session on that trading day, including any closing transactions on an exchange and any trade breaks or corrections up to the time the VWAP is processed.
 2. If there are no last-sale eligible trades reported to the Consolidated Tape during the last five minutes of the Regular Market Session, the IEX Official Closing Price of such security would be the final last-sale eligible trade for the security on that trading day.
 3. If there were no last-sale eligible trades reported to the Consolidated Tap on that trading day, the IEX Official Closing Price would be the prior day's official closing price.
1. If a security's IEX Official Closing Price cannot be determined based on these hierarchies, IEX would not publish an Official Closing Price for the security.

Topics for Feedback

- Should IEX allow the collar threshold percentage (currently 10% above/below the NBO/NBB) for the Opening or Closing Auction to be adjusted to allow for greater price discovery during the auction on large imbalance days?
 - When conducting a Volatility Closing Auction, IEX is planning on locking in on-close interest after 3:50 p.m. If IEX offers the ability to extend the Volatility Closing Auction due to the automatic extension criteria described above, should IEX offer the ability to cancel on-close interest prior to the auction match?
 - Between 3:50 and 3:55 p.m., on-close orders can be canceled and/or modified only if the participant requests that IEX correct a legitimate error in the order (e.g., side, size, symbol, or price, or duplication of an order). On-close orders cannot be canceled or modified at or after 3:55 p.m. for any reason. If there is a legitimate error and the auction clearing price and/or imbalance would change dramatically after IEX addresses such error, should IEX reserve the right to extend the close in the affected security with the correct notification to participants?
 - On the first day of trading a new issue (e.g., non-transfers, new right, warrant, or preferred security), should IEX issue a regulatory halt for the new issue on the first day of trading (if IEX has the latitude to do so) and only begin trading after a Halt Auction at 9:30 a.m., or should IEX allow the security to trade freely in the pre-market and conduct an Opening Auction at 9:30 a.m.?
 - All contingency procedures, specifically for the Opening, Volatility, and Halt Auctions.
 - If IEX cannot conduct an Opening Auction due to a systemic issue, would participants prefer that IEX use the price of the initial last-sale eligible trade on IEX, if such trade occurs within 1-minute, or should IEX use the price of the initial last-sale eligible trade on any market, or should IEX simply not publish an IEX Official Opening Price?
 - If IEX cannot conduct a Volatility Auction due to a systemic issue, and the SIP does not currently support functionality to publish LULD Price Bands without a print from the primary, should IEX abandon the auction and open the market to resolve any queued interest or should IEX resolve the issue and only resume trading with a Volatility Auction?
 - If IEX cannot conduct a Halt Auction due to a systemic issue, would participants prefer that IEX instruct the SIP to publish LULD Price Bands (assuming they support this functionality) so trading may resume, or should IEX abandon the auction and open the market to resolve any queued interest?
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¹ IEX launch of a listing market is subject to certain SEC rule filings and approvals, including but not limited to a filing to adopt rules governing auction functionality.

EXHIBIT 2



INVESTORS EXCHANGE AUCTION PROCESS

Version 1.00

DRAFT

Updated: November 14, 2016

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INTRODUCTION

Overview

The Investors Exchange (“IEX”) Auction Process provides electronic price discovery mechanisms that efficiently match orders in IEX listed securities at a single price using a Double auction. These auctions enable IEX participants to execute against on-open and on-close interest at IEX. They also allow for participation in IEX corporate IPOs, new issues (e.g., Exchange Traded Products), auctions resulting from security halts, and auctions resulting from LULD trading pauses. During the auction process, IEX will calculate and disseminate current price, size, imbalance information, and auction collar information, as described below.

Securities Eligible

Only IEX listed securities are eligible for IEX Auctions. Listings on IEX will be added to the Opening and Closing Auctions either after the IPO Auction or after the listing has transferred to IEX from another listing exchange. On-open and on-close orders submitted for non-IEX listed securities will be rejected.

Orders Eligible

In general, orders on the continuous order book and orders queued prior to the auction (collectively, the “IEX Order Book”) are eligible for the auction match. Orders on the continuous order book and orders queued prior to the auction are consolidated to calculate the single clearing price for the Opening/Closing Auction. For all other auctions, orders queued prior to the auction are used to calculate the single clearing price for the auction.

Ineligible Orders

Pegged orders are not eligible for the Opening/IPO/Volatility Auction. Non-displayed interest resting on the continuous order book at the time of a halt/pause dissemination are not eligible for the Halt/Volatility Auction. Minimum Quantity orders and orders marked with a TIF of FOK are not eligible for any IEX Auction.

Time Zone

Note that all times referenced within this document are Eastern Time (“ET”).

Time-in-Force Values

The time-in-force (“TIF”) determines the periods of time during which an order is available for execution and includes:

- IOC - immediate-or-cancel
- FOK - an IOC order where the entire size must be filled, else the order will be canceled
- DAY - available for trading during the Regular Market Session

- GTX – available for trading during the Regular Market Session and Post-Market Session, and expires at the end of the Post-Market Session
- SYS – available for trading during System Hours, and expires at the end of the Post-Market Session
- GTT – expires at the earlier of specified expire time or end of the Post-Market Session
- On-open – available for trading only when determining the opening price
- On-close – available for trading only when determining the closing price

Definitions

References to terms defined in this section will be italicized and underlined within the document.

Auction Book: The specified orders queued prior to the auction match.

- Opening Auction
 - On-open orders.
 - Limit orders marked DAY or GTX.
 - Market orders marked DAY.
- Closing Auction
 - On-close orders.
- IPO Auction
 - On-open orders.
 - Limit orders marked DAY, GTX, GTT, SYS, or IOC.
 - Market orders marked IOC or DAY.
- Halt Auction
 - On-open orders, if the security has not traded during the Regular Market Session on that trading day.
 - Limit orders received during the Order Acceptance Period marked DAY, GTX, GTT, SYS, or IOC.¹
 - Market orders received during the Order Acceptance Period marked IOC or DAY.²
 - Displayed portions of limit orders on the Continuous Book at the time of the halt dissemination.
- Volatility Auction
 - On-close orders, if the auction is scheduled at or after the conclusion of the Regular Market Session.
 - Limit orders received during the Order Acceptance Period marked DAY, GTX, GTT, SYS, or IOC.
 - Market orders received during the Order Acceptance Period marked IOC or DAY.
 - Displayed portions of limit orders on the Continuous Book at the time of the pause dissemination.

Auction Ineligible Orders: The specified orders that are not eligible for an auction. These orders **are neither** used to calculate IEX Auction information **nor** to determine the clearing price of the auction match. TIF permitting, Auction Ineligible Orders are released to the Continuous Book at the conclusion of the auction match, otherwise they are canceled. Specifically, auction ineligibility is determined as follows:

- Opening Auction
 - Pegged orders.

¹ Limit orders marked DAY are eligible only in Halt Auctions occurring during the Regular Market Session (if a Halt Auction receives an automatic extension which causes the Halt Auction to occur in the Post-Market Session, limit orders marked DAY which were submitted during the Order Acceptance Period within regular market hours are included). Limit orders marked GTX are eligible only in Halt Auctions occurring during the Regular Market Session or Post-Market Session.

² Market orders are eligible only in Halt Auctions occurring during the Regular Market Session (if a Halt Auction receives an automatic extension which causes the Halt Auction to occur in the Post-Market Session, market orders which were submitted during the Order Acceptance Period within regular market hours are included).

- Minimum Quantity orders.
- Closing Auction
 - Minimum Quantity orders.
- IPO Auction
 - Pegged orders.
 - Minimum Quantity orders.
- Halt Auction
 - Pegged orders.
 - Minimum Quantity orders.
 - Non-displayed interest on the Continuous Book at the time of the halt.
- Volatility Auction
 - Pegged orders.
 - Minimum Quantity orders.
 - Non-displayed interest on the Continuous Book at the time of the pause.

Continuous Book: All orders resting on the IEX Order Book that are not on the Auction Book. Orders marked IOC or FOK do not rest on the Continuous Book. During the Pre-Market Session, Auction Ineligible Orders queued for the Regular Market Session are not on the Continuous Book, e.g., pegged orders and Minimum Quantity orders marked DAY are not on the Continuous Book during the Pre-Market Session. There is no Continuous Book when a security is halted or paused.

Eligible Auction Orders: All orders on the Auction Book and Continuous Book (i.e., the IEX Order Book) that are not Auction Ineligible Orders. Orders must be on the Auction Book prior to their applicable cut-off or on the Continuous Book prior to the auction match for the Opening/Closing Auction. Orders must be on the Auction Book prior to the auction match for the IPO/Halt/Volatility Auction. These orders are used by the System to calculate IEX Auction information and to determine the clearing price of the auction match.

Final Last Sale Eligible Trade: The last trade during regular market hours (i.e., 9:30 a.m. – 4:00 p.m.) on IEX if the trade was executed within the last one second prior to either the Closing Auction or trading in the security being halted/paused. Otherwise, IEX will use the last trade during regular market hours prior to either the Closing Auction or trading in the security being halted/paused that is last sale eligible, reported to the Consolidated Tape System (“Consolidated Tape”), and received by IEX. If there is no qualifying Final Last Sale Eligible Trade for the current day, the previous official closing price will be used. In the case of an IPO or launch of a new issue, the issue price will be used.

Initial Last Sale Eligible Trade: The first trade during regular market hours on IEX, including the resulting trade from either a Halt Auction during regular market hours or the Closing Auction.

Hyper-aggressive Auction Orders: Market, MOO, and MOC orders. In an Opening or Closing Auction, limit, LOO, and LOC orders priced more aggressively than the Opening/Closing Auction Collar, calculated upon order receipt.

Lock-in Time: The time when orders are locked onto the Auction Book and cannot be canceled by participants prior to the auction match. Additionally, the time when IEX begins to reject any new Hyper-aggressive Auction Orders upon receipt. Lastly, the time when IEX begins to disseminate IEX Auction information. The Lock-in Time for each auction is below; IPO/Halt/Volatility Auctions do not have a Lock-in Time.

- Opening Auction: 9:28 a.m. (2 minutes prior to the auction match)
- Closing Auction: 3:50 p.m. (10 minutes prior to the auction match)

Lock-out Time: The time when any new order is locked out of entering the Auction Book and is rejected upon receipt.

Orders are still eligible for the Continuous Book at this time. Orders must be on the Auction Book prior to the Lock-out Time to guarantee eligibility for the auction. The Lock-out Time occurs 10 seconds prior to the auction match. The Lock-out Time for each auction is below; IPO/Halt/Volatility Auctions do not have a Lock-out Time.

- Opening Auction: 9:29:50 a.m. (10 seconds prior to the auction match)
- Closing Auction: 3:59:50 p.m. (10 seconds prior to the auction match)

Maximum Percentage: The Maximum Percentage will vary depending on the value of the midpoint of the NBBO (“Midpoint Price”). Maximum Percentage is one of the factors used to determine if the Midpoint Price may be used as the Volume Based Tie Breaker.

Midpoint Price	<u>Maximum Percentage</u>
Less than or equal to \$25.00	5%
Greater than \$25.00 but less than or equal to \$50.00	2.5%
Greater than \$50.00	1.5%

Opening/Closing Auction Collar Reference Price: The Volume Based Tie Breaker.

Opening/Closing Auction Collar: IEX applies a default threshold percentage of 10% to the Opening/Closing Auction Collar Reference Price, and adds the greater of \$0.50 or the resulting threshold value to the National Best Offer (“NBO”) and subtracts the greater of \$0.50 or the resulting threshold value from the National Best Bid (“NBB”) to establish the upper and lower threshold of the Opening/Closing Auction Collar.

For example, if the NBBO is \$10.00 x \$11.00, then the Opening/Closing Auction Collar Reference Price equals \$10.50 and the threshold percentage is 10%, resulting in a threshold value of \$1.05 (10% of \$10.50 = \$1.05). This threshold value is then added to the NBO and subtracted from the NBB to obtain the auction’s Opening/Closing Auction Collar. In this example, it would result in a lower threshold of \$8.95 (\$10.00 - \$1.05 = \$8.95) and an upper threshold of \$12.05 (\$11.00 + \$1.05 = \$12.05), thus creating a range of \$8.95 to \$12.05, within which the auction can occur. This means \$8.95 is the lowest price at which the auction can occur and \$12.05 is the highest price at which it can occur. The Opening/Closing Auction Collar is dynamic; as the NBBO changes, the Opening/Closing Auction Collar updates to reflect such changes.

Volatility Auction Collar Reference Price: The Volatility Auction Collar Reference Price is equal the price of the Upper or Lower Price Band that triggered the LULD trading pause.

Volatility Auction Collar: If the Volatility Auction Collar Reference Price is the Lower (Upper) Price Band, the initial lower (upper) threshold of the Volatility Auction Collar is 5% less (greater) than the Volatility Auction Collar Reference Price, rounded to the nearest less aggressive minimum price variation (“MPV”) and the upper (lower) threshold of the Volatility Auction Collar is the Upper (Lower) Price Band. For securities with a Volatility Auction Collar Reference Price of \$3.00 or less, the initial lower (upper) threshold of the Volatility Auction Collar is \$0.15 less (greater) than the Volatility Auction Collar Reference Price, rounded to the nearest less aggressive MPV and the upper (lower) threshold of the Volatility Auction Collar is the Upper (Lower) Price Band.

For example, if the Lower and Upper Price Bands are \$10.00 and \$11.00, respectively, and a pause is triggered following a Limit State at the Lower Price Band, the Volatility Auction Collar Reference Price would be equal to the Lower Price Band, \$10.00. The lower threshold of the Volatility Auction Collar (“lower Volatility Auction Collar”) would be calculated by subtracting 5% of the Volatility Auction Collar Reference Price, or \$0.50 (5% of \$10.00 = \$0.50), from the Volatility Auction Collar Reference Price. The upper threshold of the Volatility Auction Collar (“upper Volatility Auction Collar”)

would be equal to the Upper Price Band. In this example, it would result in a lower Volatility Auction Collar of \$9.50 ($\$10.00 - \$0.50 = \9.50) and an upper Volatility Auction Collar of \$11.00, thus creating a range of \$9.50 to \$11.00, within which the Volatility Auction can occur. This means \$9.50 is the lowest price at which the Volatility Auction can occur and \$11.00 is the highest price at which it can occur.

At the beginning of a Volatility Auction Order Acceptance Period extension caused by an Impermissible Price, the upper (lower) threshold of the Volatility Auction Collar will be increased (decreased) by 5% in the direction of the market order imbalance or Indicative Clearing Price outside the Volatility Auction Collar (in either case, an “Impermissible Price”), rounded to the nearest less aggressive MPV. For securities with a Volatility Auction Collar Reference Price of \$3.00 or less, the upper (lower) threshold of the Volatility Auction Collar will be increased (decreased) in \$0.15 increments in the direction of the Impermissible Price.

The Volatility Auction Collar is static during the Order Acceptance Period and only updates at the beginning of each Volatility Auction Order Acceptance Period extension caused by an Impermissible Price. In this example, if the pause was triggered at 12:00 p.m., the above calculated Volatility Auction Collar would be in effect from 12:00 until 12:05 p.m. To continue the example, if the Indicative Clearing Price was above the upper Volatility Auction Collar at the time of the scheduled auction match, 12:05 p.m., then the Volatility Auction would receive an extension of 5 minutes and the upper Volatility Auction Collar would be updated by adding 5% of the upper Volatility Auction Collar, or \$0.55 (5% of \$11.00 = \$0.55), to the upper Volatility Auction Collar. The lower Volatility Auction Collar remains unchanged. In this example, it would result in an upper Volatility Auction Collar of \$11.55 ($\$11.00 + \$0.55 = \11.55) and a lower Volatility Auction Collar of \$9.50, thus creating a range of \$9.50 to \$11.55, within which the Volatility Auction can now occur. This means \$9.50 is the lowest price at which the Volatility Auction can occur and \$11.55 is the highest price at which it can now occur at the next scheduled auction match 5 minutes from now, at 12:10 p.m.

Reference Price Range: The prices between and including the NBB and NBO. In the event that there is no NBBO in an Opening/Closing Auction, this will be the price of the Final Last Sale Eligible Trade. In an IPO/Halt/Volatility Auction the Reference Price Range is equal to the Indicative Clearing Price. The Reference Price Range is used only for the purposes of calculating the Reference Price and will not be disseminated as part of the IEX Auction information.

Volume Based Tie Breaker: The Midpoint Price, if the NBBO is valid. The NBBO is valid when,

1. there is both an NBB and NBO for the security, and
2. the NBBO is not crossed, and
3. the Midpoint Price is less than the Maximum Percentage away from both the NBB and NBO.

In the event the NBBO is not valid, the midpoint of the IEX best bid and best offer (“IEX BBO”) is used.

In the event the midpoint of the IEX BBO is greater than the Maximum Percentage away from either the IEX best bid or IEX best offer, or there is not both an IEX best bid and IEX best offer for the security, the price of the Final Last Sale Eligible Trade is used.

For IPO Auctions, the issue price is used.

IEX AUCTION INFORMATION

IEX disseminates IEX Auction information every **one second** between the Lock-in Time and the auction match for the Opening and Closing Auctions, and during the Display Only Period of the Order Acceptance Period for IPO/Halt/Volatility Auctions. IEX Auction information is available to subscribers of the IEX Top of Book Quote and Last

Sale Feed (“TOPS”) and the IEX Auction Information Message Feed (“AIMM”) and is also made available to other market participants by various market data vendors.

IEX Auction information is also available on the [IEX public website](#).

Order Acceptance Period

No orders will be accepted for an IPO/Halt Auction until the start of the Order Acceptance Period. Orders entered during the Order Acceptance Period can be canceled until the auction match begins. No executions in the subject security will occur until the auction has completed.

The default Order Acceptance Period for each applicable auction is specified below:

- IPO Auction: 8:00 a.m., but is subject to change based on underwriter request.
- Halt Auction: 5 minutes prior to the scheduled auction match.
- Volatility Auction: immediately after the pause dissemination.³

The Order Acceptance Period will end when the auction match begins.

Situations that can result in the Order Acceptance Period being extended include, but are not limited to:

- Unmatched Market Order Shares: automatic 5 minute (IPO) or 1 minute (Halt) extension.
- Impermissible Price: automatic 5 minute (Volatility) extension for an *Indicative Clearing Price* outside the *Volatility Auction Collar* or unmatched market order shares at the time of the auction match.
- Volatility Closing Auction: automatic extension to the end of the Regular Market Session (i.e., 4:00 p.m.) (Volatility), if the auction will be in an Order Acceptance Period at or after the Closing Auction *Lock-in Time*.
- Legitimate Underwriter Request: manual extension (IPO only).
- Volatility: automatic 5 minute (IPO/Volatility) or 1 minute (Halt) extension for an *Indicative Clearing Price* movement that is greater than 5% or 50 cents from any of the previous fifteen *Indicative Clearing Price* disseminations at the scheduled auction match.

Display Only Period

IEX will disseminate IEX Auction information in the subject security during the Display Only Period for an upcoming auction. IEX will also disseminate a trading status message in the symbol to the Consolidated Tape that contains a *Halt Reason* = ‘D’ (“News Dissemination”) at the start of the Display Only Period. The default Display Only Period for each applicable auction is specified below:

- IPO Auction: 30 minutes prior to the scheduled auction match.
- Halt Auction: the start of the Order Acceptance Period.
- Volatility Auction: the start of the Order Acceptance Period.

Messages

IEX Auction information to be disseminated during an IEX Auction is as follows:

- **Timestamp:** Time of the update event.

³ IEX will reject market orders and IOC limit orders for the first second after a security is paused (i.e., IEX will continue to accept orders without interruption when a security is paused with the exception of market orders and IOC limit orders for the first second of the LULD trading pause).

- **Security:** Symbol of the subject security.
- **Auction Type:** Opening Auction (O); Closing Auction (C); IPO Auction (I); Halt Auction (H); Volatility Auction (V).
- **Reference Price:** The Reference Price is based only upon orders on the Auction Book. The price is calculated at or within the Reference Price Range for the security. The Reference Price is set to the price that maximizes the number of the shares from orders on the Auction Book to be executed in the auction. If more than one price exists, the Reference Price is set to the price at which shares will remain unexecuted in the auction. If more than one price exists, the Reference Price is set to the price that minimizes the distance from the Volume Based Tie Breaker at the time of dissemination. Shares of orders on the Auction Book may be unmatched at the Reference Price. The Reference Price has no bearing on the auction match; it is simply a price that is used in the Auction information dissemination to provide reference for several of the below data points.
- **Paired Shares:** The number of shares from orders on the Auction Book that can be matched at the Reference Price.
- **Imbalance Shares:** The number of shares from orders on the Auction Book that would remain unexecuted at the Reference Price against other orders on the Auction Book.
- **Imbalance Side:** The side of the imbalance: buy-side imbalance (B); sell-side imbalance (S); no imbalance (N).
- **Indicative Clearing Price:** The price at which the auction would match using Eligible Auction Orders. In the event the Indicative Clearing Price is below the Lower Auction Collar or above the Upper Auction Collar in the Opening/Closing Auction, the value will be the nearest valid price at or within the collar. In the event there is no price at which Eligible Auction Orders would match, the value will be zero.
- **Auction Book Clearing Price:** The price at which the auction would match using **only** orders on the Auction Book. In the event of a market order imbalance using **only** orders on the Auction Book, the value will be zero (in this case, the Imbalance Side will indicate the side of the order imbalance). In the event there is no price at which Auction Book would match, the value will be zero (in this case, the Imbalance Side will indicate no imbalance).
- **Collar Reference Price:** Opening/Closing Auction Collar Reference Price for the Opening/Closing Auction. Volatility Auction Collar Reference Price for the Volatility Auction. The value will be zero for IPO/Halt Auctions.
- **Lower Auction Collar:** The lower threshold of the Opening/Closing Auction Collar for the Opening/Closing Auction. The lower threshold of the Volatility Auction Collar for the Volatility Auction. The value will be zero for IPO/Halt Auctions.
- **Upper Auction Collar:** The upper threshold of the Opening/Closing Auction Collar for the Opening/Closing Auction. The upper threshold of the Volatility Auction Collar for the Volatility Auction. The value will be zero for IPO/Halt Auctions.

Note that the Reference Price for an IPO/Halt/Volatility Auction will does not take the NBBO into account. Additionally, the Reference Price, Indicative Clearing Price, and Auction Book Clearing Price will show the same value during an IPO/Halt/Volatility Auction since there is no Continuous Book. Lastly, if there is a market order imbalance in an IPO/Halt/Volatility Auction, the Imbalance Shares will show the number of shares from market orders that would remain unexecuted, the Reference Price, Indicative Clearing Price, and Auction Book Clearing Price will all have a value of zero, indicating that an auction match price cannot be calculated, and the Imbalance Side will indicate the side of the order imbalance.

IEEX AUCTION PRIORITY

Eligible Auction Orders on the IEX Order Book are ranked and maintained in the auction based on the following priority:

- Price. The best priced Eligible Auction Order (the highest priced resting order to buy or the lowest priced resting order to sell) has priority over all other orders to buy (or orders to sell) in all cases.
 - Orders on the Auction Book are ranked by their limit price, however displayed portions of limit orders on the Continuous Book at the time of a halt/pause dissemination are ranked by the price at which they were resting on the IEX Order Book at the time of the halt/pause (“Resting Price”). Market orders have precedence over limit orders
 - Orders on the Continuous Book are ranked by Resting Price at the time of the Opening/Closing Auction match.
- Display. Equally priced Eligible Auction Orders are ranked by display priority.
 - Orders on the Auction Book and displayed interest on the Continuous Book have precedence over non-displayed interest on the Continuous Book at a given price.
- Time. Equally priced Eligible Auction Orders with the same display are ranked in time priority.
 - Where orders to buy (or sell) are ranked at the same price with the same display, the oldest order at such price and display shall have precedence at that price and display. Orders are ranked by the time at which they are posted to the IEX Order Book at a given price, the first to be posted at a given price being the oldest. Orders maintain their time priority once booked until one of the following occur, at which time the order will receive a new timestamp:
 - Eligible Auction Order is incremented by the participant by means of a Cancel/Replace.
 - Eligible Auction Order is re-priced by the participant by means of a Cancel/Replace.
 - Any one of the events specified in IEX Rule 11.220(a)(1)(C) occurs to a Continuous Book order.

OPENING/CLOSING AUCTION

The IEX Opening/Closing Auction has been designed to efficiently maximize the number of shares executed at a single price for securities during the Regular Market Session open/close, respectively. In the event of a volume based tie at multiple price levels, the auction price will be determined by the price at which shares will remain unexecuted in the auction. In the event of a tie at multiple price levels, the auction price will be determined by the price closest to the Volume Based Tie Breaker. Additionally, Opening/Closing Auction prices will be collared such that the auction match occurs at or within the Opening/Closing Auction Collar, as measured immediately prior to the initiation of the auction.

At the Opening and Closing Auction Lock-in Time, IEX beings disseminating IEX Auction information to market participants via TOPS and AIMM. IEX Auction information contains valuable details about opening and closing orders as well as relevant pricing information for a security and its collars.

When the Opening (Closing) Auction takes place, the Continuous Book is consolidated with the opening (closing) Auction Book to create a single opening (closing) price for each security. Once the auction is complete, any on-open (on-close) orders that are unable to participate in the auction will be canceled as will unexecuted DAY orders in the Closing Auction. All other unexecuted orders will be released to the Continuous Book for normal processing.

If a halt is disseminated in a security prior to the Opening Auction, all orders on the Auction Book will remain open. Participants may continue to submit new on-open orders or other Eligible Auction Orders for the halted security. Participants may cancel open Eligible Auction Orders during the halt. If the halt exists at the start of the Regular Market Session (i.e., 9:30 a.m.), the security will open for trading after the Halt Auction.

If a halt/pause is disseminated in a security prior to the Closing Auction, all orders on the Auction Book will remain open. Participants may continue to submit new on-close orders or other Eligible Auction Orders for the halted/paused security. Participants may cancel open Eligible Auction Orders during the halt/pause. If a halt persists through the end of the Regular Market Session, all live on-open and on-close orders will be canceled at the conclusion of the Regular Market Session. If a pause exists at or after the Closing Auction Lock-in Time, on-close orders are added to the Volatility Auction and such auction will be used to arrive at the single closing price for the subject security at the conclusion of regular market hours (i.e. 4:00 p.m.).

IEX Official Opening Price

Upon completion of the IEX Opening Auction for IEX listed securities (or the IEX Halt Auction for IEX listed securities that have not traded during the Regular Market Session on that trading day), the IEX Official Opening Price for the security will be disseminated to the Consolidated Tape along with a bulk execution. The IEX Official Opening Price will be the price of the auction.

The IEX Official Opening Price will be represented by a sale condition code of 'Q' (Market Center Official Open) in Category 4. The bulk execution will be represented by a sale condition code of 'O' (Market Center Opening Trade) in Category 2 and a sale condition code of 'X' (Cross Trade) in Category 4. If the auction match results in an odd lot execution, the bulk execution will be represented by a sale condition code of 'O' (Market Center Opening Trade) in Category 2 and a sale condition code of 'I' (Odd Lot Trade) in Category 4.

If a security does not have an Opening Auction (e.g., there is insufficient interest to conduct an opening auction), the Regular Market Session begins by canceling all on-open orders and transferring any queued orders eligible for the Regular Market Session to the Continuous Book; the IEX Official Opening Price will be the price of the Initial Last Sale Eligible Trade and will be represented by a sale condition code of 'Q' (Market Center Official Open) in Category 4. The execution will be represented by a sale condition code of 'O' (Market Center Opening Trade) in Category 2.

IEX Official Closing Price

Upon completion of the IEX Closing Auction for IEX listed securities (or the IEX Volatility Auction for IEX listed securities where an LULD trading pause exists at or after the Closing Auction Lock-in Time), the IEX Official Closing Price for the security will be disseminated to the Consolidated Tape along with a bulk execution. The IEX Official Closing Price will be the price of the auction.

The IEX Official Closing Price will be represented by a sale condition code of 'M' (Market Center Official Close) in Category 4. The bulk execution will be represented by a sale condition code of '6' (Market Center Closing Trade) in Category 2 and a sale condition code of 'X' (Cross Trade) in Category 4. If the auction match results in an odd lot execution, the bulk execution will be represented by a sale condition code of '6' (Market Center Closing Trade) in Category 2 and a sale condition code of 'I' (Odd Lot Trade) in Category 4.

If a security does not have a Closing Auction (e.g., there is insufficient interest to conduct a closing auction), the IEX Official Closing Price will be the price of the Final Last Sale Eligible Trade and will be represented by a sale condition code of 'M' (Market Center Official Close) in Category 4.

IEX Opening and Closing Auction Times

Opening Auction

Closing Auction

8:00 a.m. – The IEX Pre-Market Session begins and order acceptance begins for Opening and Closing Auctions.	3:50 p.m. – Dissemination of Closing Auction information begins. Orders are locked into the <u>Auction Book</u> until the auction match, and <u>Hyper-aggressive Auction Orders</u> are rejected upon receipt.
9:28 a.m. – Dissemination of Opening Auction information begins. Orders are locked into the <u>Auction Book</u> until the auction match, and <u>Hyper-aggressive Auction Orders</u> are rejected upon receipt.	3:59:50 p.m. – New orders are locked out of entering the <u>Auction Book</u> (rejected upon receipt).
9:29:50 a.m. – New orders are locked out of entering the <u>Auction Book</u> (rejected upon receipt).	4:00 p.m. – The Closing Auction match occurs.
9:30 a.m. – The Opening Auction match occurs.	5:00 p.m. – The IEX Post-Market Session ends.

Opening/Closing Order Types

At the time of the auction match, IEX will not enforce the Anti-Internalization attributes on any order, but will enforce the attribute for any unfilled shares remaining after an auction which are released to the Continuous Book.

Limit Orders

Limit orders are executable from 8:00 a.m. to 5:00 p.m.; includes DAY (executable from 9:30 a.m. to 4:00 p.m.), GTX (executable from 9:30 a.m. to 5:00 p.m.), SYS, GTT, IOC, and FOK orders. All limit orders, with the exception of orders marked IOC or FOK, are included during the Opening/Closing Auction.

DAY and GTX limit orders are accepted between 8:00 a.m. and 4:00 p.m. (DAY orders) / 5:00 p.m. (GTX orders), except between the Opening Auction Lock-out Time and the Opening Auction match. DAY and GTX limit orders cannot be canceled between the Opening Auction Lock-in Time and the Opening Auction match.

Unfilled limit order shares remaining after participation in the Opening Auction will be released to the Continuous Book. Unfilled limit order shares on the Continuous Book at the Closing Auction will participate in the Closing Auction. Unfilled DAY limit order shares remaining at the conclusion of the Closing Auction will be canceled. Unfilled shares from all other limit orders remaining at the conclusion of the Closing Auction will be released to the Continuous Book.

An imbalance only order is not an available order type, and imbalance only orders are not accepted or executed by IEX.

Market Orders

Executable from 9:30 a.m. to 4:00 p.m., includes DAY, IOC, and FOK. DAY market orders are included in the Opening Auction and treated as MOO orders, while all other market orders are **excluded** from the Opening/Closing Auction and rejected upon receipt outside of the Regular Market Session.

DAY market orders are accepted between 8:00 a.m. and 4:00 p.m., except between the Opening Auction Lock-in Time and the Opening Auction match. DAY market orders cannot be canceled between the Opening Auction Lock-in Time and the Opening Auction match.

Unfilled DAY market order shares remaining at the conclusion of the Opening Auction will be canceled.

Pegged Orders

Pegged orders are executable from 9:30 a.m. to 4:00 p.m.; includes DAY, GTX, SYS, GTT, IOC, and FOK. All pegged

orders are **ineligible** for the Opening Auction. Unfilled pegged order shares on the Continuous Book at the Closing Auction will participate in the Closing Auction using their Resting Price for ranking purposes; IOC and FOK pegged orders do not participate in the Closing Auction.

Pegged DAY orders are accepted between 8:00 and 4:00 p.m., but do not participate in the Opening Auction. Finally, pegged DAY orders **can** be canceled between the Opening Auction Lock-in Time and the Opening Auction match.

Routable Orders

Limit or market orders may be marked as routable. At the conclusion of an Opening Auction, any remaining shares from a routable DAY or GTX limit order becomes part of the Continuous Book. A routable limit order will be routed when an away market locks or crosses the order's limit price, per Re-sweep specifications.

On-Open Orders

Specifically request an execution at the opening price. Executable only in the Opening Auction (or the IEX Halt Auction for securities that have not traded during the Regular Market Session on that trading day). Can be Limit-On-Open ("LOO") or Market-On-Open ("MOO").

MOO orders must be received prior to the Opening Auction Lock-in Time to guarantee eligibility for participation in the Opening Auction. MOO orders and Hyper-aggressive Auction Orders received after the Opening Auction Lock-in Time are rejected. LOO orders must be received prior to the Opening Auction Lock-out Time to guarantee eligibility for participation in the Opening Auction. LOO orders received after the Opening Auction Lock-out Time are rejected. On-open orders cannot be canceled between the Opening Auction Lock-in Time and the Opening Auction match.

On-Close Orders

Specifically request an execution at the closing price. Executable only in the Closing Auction (or Volatility Auction for securities where an LULD trading pause exists at or after the Closing Auction Lock-in Time). Can be Limit-On-Close ("LOC") or Market-On-Close ("MOC").

MOC orders must be received prior to the Closing Auction Lock-in Time to guarantee eligibility for participation in the Closing Auction. MOC orders and Hyper-aggressive Auction Orders received after the Closing Auction Lock-in Time are rejected. LOC orders must be received prior to the Closing Auction Lock-out Time to guarantee eligibility for participation in the Closing Auction. LOC orders received after the Closing Auction Lock-out Time are rejected. Between the Closing Auction Lock-in Time and immediately prior to 3:55 p.m. (i.e., five minutes before the Closing Auction match), on-close orders can be canceled and/or modified only if the participant requests that IEX correct a legitimate error in the order (e.g., side, size, symbol, price, or duplication of an order). On-close orders cannot be canceled or modified at or after 3:55 p.m. (i.e., five minutes before the Closing Auction match) for any reason.

Order Entry Reference for the Auction Book

Order Type	IEX FIX Specification Field (FIX Tag)	
Market-On-Open (MOO)	OrdType(40) = 1 (Market)	TimeInForce(59) = 2 (On-open)
Market-On-Close (MOC)	ExecInst(18) = i (IEX Only)	TimeInForce(59) = 7 (On-close)
Limit-On-Open (LOO)	OrdType(40) = 2 (Limit)	TimeInForce(59) = 2 (On-open)

Limit-On-Close (LOC)	ExecInst(18) = i (IEX Only) Price(44) = [price]	TimeInForce(59) = 7 (On-close)
DAY	TimeInForce(59) = 0 (DAY)	
GTX	TimeInForce(59) = 5 (GTX)	

Note that the above is not a complete list of all FIX tag combinations eligible for auctions on Investors Exchange. Refer to this specification and the [IEX FIX Specification](#) for details about order eligibility in each IEX auction type and their FIX implementation.

Any on-open or on-close order with a non-zero MinQty(110) will be rejected upon receipt. In addition, on-open or on-close orders with OrdType(40) = P will be rejected. Any on-open or on-close order with a MaxFloor(111) or Anti-Internalization Group ID(7928) value will be accepted, however these instructions will not be enforced during the auction match.

Cancel On Disconnect

IEX offers participants 3 options for canceling orders as a result of a session disconnect:

1. Cancel orders on the *Continuous Book* only (default)
2. Cancel all open orders (*Continuous Book* and *Auction Book*) *
3. Do not cancel any open orders

* If disconnect occurs between the *Lock-in Time* and the auction match, orders on the *Auction Book* that are to participate in the auction will not be canceled. Prior to the Opening Auction, DAY and GTX limit orders will convert to LOO orders and receive a pending cancel via FIX.

To change the Cancel on Disconnect setting for any order entry sessions, contact IEX Market Operations.

Execution Priority

Orders on the IEX Order Book are ranked and execute in the Opening and Closing Auctions in *Auction Priority*, which can be described simply as price - display - time priority.

Opening/Closing Auction Execution Priority

1. MOO/MOC orders execute in time priority.
2. All other *Eligible Auction Orders* priced more aggressively than the official auction price execute in price - display - time priority.
3. *Eligible Auction Orders* priced equal to the official auction price execute in display - time priority.

Contingency Procedures

In the event of systemic issues, the determination to use the Primary or Secondary Contingency Procedures will be made by the President of IEX or any Senior Vice President designated by the President. IEX will publicly announce at the earliest possible time the initiation of the Primary or Secondary Contingency Procedures via a System Status, Trading Alert, and email notification directories.

IEX will employ the Primary Contingency Procedures if at all possible, and will employ the Secondary Contingency Procedures only if it determines that both the standard closing procedures and the Primary Contingency Procedures are unavailable.

If IEX employs the Primary Contingency Procedures for the Opening Auction, the Regular Market Session will begin either as scheduled at 9:30 a.m. or upon resolution of the disruption that triggered IEX to operate the contingency procedures.

If IEX employs the Primary or Secondary Contingency Procedures for the Closing Auction, the Post-Market Session will begin either as scheduled at 4:00 p.m. or upon resolution of the disruption that triggered IEX to operate the contingency procedures.

Primary Contingency Procedures

In the event of systemic issues at IEX at the time of an Opening/Closing Auction, IEX reserves the right to employ the following Primary Contingency Procedures.

Opening Auction

IEX will publicly announce that no Opening Auction will occur. The price of the Initial Last Sale Eligible Trade will be used for the IEX Official Opening Price, if such price is generated in the first one minute of the regular market hours. The IEX Official Opening Price will be published to the Consolidated Tape. IEX will execute orders on the Auction Book at the IEX Official Opening Price. Any unmatched shares will be canceled at the conclusion of the contingency process. IEX will report the resulting execution to the Consolidated Tape and deliver execution reports to participants.

If a security's IEX Official Opening Price cannot be determined based on this procedure, IEX will not publish an Official Opening Price for the security and cancel all on-open orders on the Auction Book.

Closing Auction

IEX will publicly announce that no Closing Auction will occur. The price of the Final Last Sale Eligible Trade will be used for the IEX Official Closing Price. The IEX Official Closing Price will be published to the Consolidated Tape. IEX will execute orders on the Auction Book at the IEX Official Closing Price. Any unmatched shares will be canceled at the conclusion of the contingency process. IEX will report the resulting execution to the Consolidated Tape and deliver execution reports to participants.

If a security's IEX Official Closing Price cannot be determined based on this procedure, IEX will not publish an Official Closing Price for the security and cancel all on-close orders on the Auction Book.

Closing Auction Secondary Contingency Procedures

If IEX publicly announces at or before 3:00 p.m. that it will employ the Closing Auction Secondary Contingency Procedures for one or more securities, it will designate a back-up exchange for those securities, cancel all open interest designated for the IEX Closing Auction residing on the IEX Order Book in order to give participants the opportunity to route their orders to alternative execution venues, and the IEX Official Closing Price for each security will be determined based on the following hierarchy:

1. The IEX Official Closing Price will be the official closing price established for the security under the rules of the designated back-up exchange. The Nasdaq Stock Market is the default back-up exchange for IEX.
2. If there is no official closing price in a security on the designated back-up exchange, the IEX Official Closing Price will be the volume weighted average price ("VWAP") of the last sale eligible trades reported to the Consolidated Tape during the last five minutes of regular market hours on that trading day, including any closing transactions on an exchange and any trade breaks or corrections up to the time the VWAP is processed.
3. If there are no last sale eligible trades reported to the Consolidated Tape during the last five minutes of regular market hours, the IEX Official Closing Price of such security will be the Final Last Sale Eligible Trade for the

security on that trading day.

4. If there were no last sale eligible trades reported to the Consolidated Tap on that trading day, the IEX Official Closing Price will be the prior day's official closing price.

If IEX publicly announces after 3:00 p.m. that it will employ the Secondary Contingency Procedures for one or more securities, it will cancel all open interest designated for the IEX Closing Auction residing on the IEX Order Book in order to give participants the opportunity to route their orders to alternative execution venues, and the IEX Official Closing Price for each security will be determined based on the following hierarchy:

1. The IEX Official Closing Price will be the VWAP of the last sale eligible trades reported to the Consolidated Tape during the last five minutes of regular market hours on that trading day, including any closing transactions on an exchange and any trade breaks or corrections up to the time the VWAP is processed.
2. If there are no last sale eligible trades reported to the Consolidated Tape during the last five minutes of regular market hours, the IEX Official Closing Price of such security will be the Final Last Sale Eligible Trade for the security on that trading day.
3. If there were no last sale eligible trades reported to the Consolidated Tap on that trading day, the IEX Official Closing Price will be the prior day's official closing price.

If a security's IEX Official Closing Price cannot be determined based on these hierarchies, IEX will not publish an Official Closing Price for the security.

IPO/HALT AUCTION

The IEX IPO/Halt Auction provides a mechanism that has been designed to allow participants to match a maximum number of shares at a single price for new issues and securities coming out of a trading halt based on supply and demand. In the event of a volume based tie at multiple price levels, the IPO/Halt Auction price will be determined by the price at which shares will remain unexecuted in the auction. In the event of a tie at multiple price levels, the IPO/Halt Auction price will be determined by the price closest to the Volume Based Tie Breaker. The IPO Auction is used to launch a new issue on the first day of trading on IEX and for a corporate IPO. The Halt Auction is used to resume trading after a regulatory halt or market wide circuit breaker.

IEX will disseminate a halt for IPOs and new issues at 7:45 a.m. on the morning of the IPO Auction. In addition, an administrative message will be published to the Consolidated Tape on the morning of the IPO Auction for IPOs and new issues. The administrative message will contain information about the issue price and the expected time of the IPO Auction.

During an IPO/Halt Auction, IEX disseminates IEX Auction information to market participants via TOPS and AIMM at the start of the Display Only Period. IEX Auction information contains valuable details about IPO/Halt Auction orders as well as relevant pricing information of new issues and securities coming out of a trading halt.

The default scheduled time of an IPO Auction for a corporate IPO is 10:15 a.m., but is subject to change based on underwriter request. The default scheduled time of an IPO Auction for a new issue is 9:30 a.m., but is subject to change based on underwriter request.

Once the IPO (Halt) Auction is conducted, the IEX Official Opening Price (IEX Reopening Trade) for the security will be disseminated to the Consolidated Tape along with a bulk execution (as a bulk execution). If there is insufficient trading interest in the IEX System to execute the Halt Auction (i.e., the lack of any bid interest priced to be marketable against any available offer interest), IEX will not conduct the Halt Auction in that security. In that case, IEX will instead use the

Initial Last Sale Eligible Trade as the IEX Reopening Trade in that security.

Note that DAY and IOC market orders and IOC limit orders received during a Halt Auction Order Acceptance Period are accepted and are not canceled until they have been processed in the auction or they have been explicitly canceled by a participant. Such market orders that are not filled in the auction will be canceled at the conclusion of the auction.

IEX Official IPO Opening Price

Upon completion of an IPO Auction, the IEX Official Opening Price for the newly issued security will be disseminated to the Consolidated Tape along with a bulk execution. The IEX Official IPO Opening Price will be the price that resulted from the IPO Auction.

The IEX Official IPO Opening Price will be represented by a sale condition code of 'Q' (Market Center Official Open) in Category 4. The bulk execution will be represented by a sale condition code of 'O' (Market Center Opening Trade) in Category 2 and a sale condition code of 'X' (Cross Trade) in Category 4. If the auction match results in an odd lot execution, the bulk execution will be represented by a sale condition code of 'O' (Market Center Opening Trade) in Category 2 and a sale condition code of 'I' (Odd Lot Trade) in Category 4.

These are the same codes used for the standard IEX Official Opening Price disseminated at market open.

IEX Reopening Trade

Upon completion of a Halt Auction, the IEX Reopening Trade for the security will be disseminated to the Consolidated Tape as a bulk execution. The IEX Reopening Trade will be the execution that resulted from the Halt Auction.

The IEX Reopening Trade will be represented by a sale condition code of '5' (Market Center Reopening Trade) in Category 2 and a sale condition code of 'X' (Cross Trade) in Category 4. If the auction match results in an odd lot execution, the IEX Reopening Trade will be represented by a sale condition code of '5' (Market Center Reopening Trade) in Category 2 and a sale condition code of 'I' (Odd Lot Trade) in Category 4.

If a security does not have a Halt Auction (e.g., there is insufficient interest to conduct an auction), continuous trading begins by canceling all on-auction orders and transferring any queued orders to the Continuous Book; the IEX Reopening Trade will be the Initial Last Sale Eligible Trade and will be represented by a sale condition code of '5' (Market Center Reopening Trade) in Category 2.

IPO/Halt Auction Order Types

At the time of the auction match, IEX will not enforce the Anti-Internalization attributes on any order, but will enforce the attribute for any unfilled shares remaining after an auction which are released to the Continuous Book.

Limit Orders

Limit orders are executable from the IPO/Halt Auction time to 5:00 p.m.; includes DAY (executable from the IPO/Halt Auction time, if after 9:30 a.m., to 4:00 p.m.), GTX (executable from the IPO/Halt Auction time, if after 9:30 a.m., to 5:00 p.m.), SYS, GTT, IOC, and FOK orders. All limit orders with the exception of orders marked FOK participate in the IPO/Halt Auction. IOC limit orders may be used in Halt Auctions to achieve on-auction behavior, similar to an LOO in the IPO Auction (i.e., cancel any unexecuted portions of the limit order at the conclusion of the auction process).

DAY and GTX limit orders are accepted between 8:00 and 4:00 p.m. (DAY orders) / 5:00 p.m. (GTX orders). DAY and GTX limit orders do not participate in Halt Auctions occurring during the Pre-Market Session. DAY limit orders do not

participate in Halt Auctions occurring during the Post-Market Session.

Displayed interest from limit orders on the Continuous Book at the time of the halt dissemination will participate in the auction process using their Resting Price for ranking purposes, and will be reflected in the IEX Auction information published. Non-displayed and non-displayed portions of limit orders on the Continuous Book at the time of the halt dissemination **will not** participate in the Halt Auction. Non-displayed limit orders and reserve limit orders with non-displayed portions are accepted during the Order Acceptance Period and participate in the IPO/Halt Auction ranked at their limit price with display priority for the full order quantity. Unfilled shares from limit orders remaining at the conclusion of the IPO/Halt Auction are released to the Continuous Book, with the exception of IOC limit orders.

An imbalance only order is not an available order type, and imbalance only orders are not accepted or executed by IEX.

Market Orders

Executable from 9:30 a.m. to 4:00 p.m., includes DAY, IOC, and FOK. All market orders with the exception of orders marked FOK **participate** in IPO/Halt Auctions during the Regular Market Session. Market orders are not included in a Halt Auction scheduled to occur outside of the Regular Market Session. DAY and IOC market orders are accepted during the Order Acceptance Period for an IPO Auction, however FOK market orders are rejected during this time. Unfilled market order shares remaining at the conclusion of the IPO/Halt Auction will be canceled.

Pegged Orders

Pegged orders are executable from the IPO/Halt Auction time to 4:00 p.m.; includes DAY, SYS, GTX, GTT, IOC, and FOK. All pegged orders are **excluded** from an IPO/Halt Auction.

Routable Orders

Limit or market orders may be marked as routable. At the conclusion of an IPO/Halt Auction, a routable DAY (between 9:30 a.m. and 4:00 p.m.), GTX (between 9:30 a.m. and 5:00 p.m.), SYS, or GTT limit order will be released to the Continuous Book. A routable limit order will be routed when an away market locks or crosses the order's limit price, per Re-sweep specifications.

On-Open Orders

Executable in an IPO Auction. Executable in a Halt Auction for securities that have not traded during the Regular Market Session on that trading day. Can be Limit-On-Open ("LOO") or Market-On-Open ("MOO").

LOO and MOO orders may be entered during the Order Acceptance Period for an IPO Auction, or Halt Auctions for securities that have not traded during the Regular Market Session on that trading day. LOO and MOO orders must be received prior to the auction match to guarantee eligibility for participation in the IPO/Halt Auction. Unfilled shares remaining from LOO and MOO orders at the conclusion of the IPO/Halt Auction will be canceled.

On-Close Orders

Executable only in the Closing/Volatility Auction. Can be Limit-On-Close ("LOC") or Market-On-Close ("MOC"). LOC and MOC orders received prior to the start of the IPO Auction Order Acceptance Period will be rejected.

Execution Priority

Orders on the IEX Order Book are ranked and execute in the IPO/Halt Auction in Auction Priority, which can be described simply as price - time priority.

IPO/Halt Auction Execution Priority

1. Market and MOO orders execute in time priority.
2. All other Eligible Auction Orders priced more aggressively than the official auction price execute in price - time priority.
3. Eligible Auction Orders priced equal to the official auction price execute in time priority.

Contingency Procedures

In the event of systemic issues, the determination to use the Primary Contingency Procedures will be made by the President of IEX or any Senior Vice President designated by the President. IEX will publicly announce at the earliest possible time the initiation of the Contingency Procedures via a System Status, Trading Alert, and email notification directories.

If IEX employs the Contingency Procedures for the Halt Auction, trading for the security will begin upon resolution of the disruption that triggered IEX to operate the contingency procedures.

If IEX employs the Contingency Procedures for the IPO Auction, trading for the security will begin upon resolution of the disruption that triggered IEX to operate the contingency procedures.

Contingency Procedures

In the event of systemic issues at IEX at the time of an IPO/Halt Auction, IEX reserves the right to employ the following Contingency Procedures.

Halt Auction

IEX will publicly announce that no Halt Auction will occur and open the security for trading without an auction.

IPO Auction

IEX will publicly announce that the Order Acceptance Period for the IPO Auction will reset for the subject security. At which point, IEX will cancel all orders on the IEX Order Book and disseminate a new scheduled time for the Order Acceptance Period and auction match.

VOLATILITY AUCTION

The Volatility Auction is used to resume trading for a security subject to a LULD trading pause. The IEX Volatility Auction provides a mechanism that has been designed to allow participants to match a maximum number of shares at a single price for securities coming out of an LULD trading pause based on supply and demand. In the event of a volume based tie at multiple price levels, the Volatility Auction price will be determined by the price at which shares will remain unexecuted in the auction. In the event of a tie at multiple price levels, the Volatility Auction price will be determined by the price closest to the Volume Based Tie Breaker.

IEX will delay execution of the Volatility Auction if the clearing price at the time of the auction match is an Impermissible Price. Each time this occurs, the Volatility Auction will be extended in five-minute increments and the Volatility Auction Collar is expanded in the direction of the Impermissible Price. This process of extension and collar expansion continues until such time as sufficient trading interest exists at a clearing price inside the latest Volatility Auction Collar. If an

LULD trading pause exists at or after the Closing Auction Lock-in Time (i.e., 3:50 p.m.) and before the Closing Auction, IEX will not conduct a Closing Auction in the subject security and will instead utilize the Volatility Auction to arrive at the IEX Official Closing Price at the conclusion of the Regular Market Session (i.e., 4:00 p.m.). If IEX continues to delay execution of the Volatility Auction until 5:00 p.m., IEX will not conduct a Volatility Auction in the subject security and will instead use the Final Last Sale Eligible Trade as the IEX Official Closing Price in that security for that trading day. In that event, all orders will be canceled back to the entering firms at 5:00 p.m.

During a Volatility Auction, IEX disseminates IEX Auction information to market participants via TOPS and AIMM at the start of the Display Only Period. IEX Auction information contains valuable details about Volatility Auction orders as well as relevant pricing information of securities coming out of a trading pause.

Once the Volatility Auction is conducted, the IEX Reopening Trade for the security will be disseminated to the Consolidated Tape as a bulk execution. If there is insufficient trading interest in the IEX System to execute the Volatility Auction (i.e., the lack of any bid interest priced to be marketable against any available offer interest), IEX will not conduct the Volatility Auction in that security. In that case, IEX will instead use the price of the Initial Last Sale Eligible Trade as the IEX Reopening Trade in that security.

Note that DAY and IOC market orders and IOC limit orders received during a Volatility Auction Order Acceptance Period are accepted and are not canceled until they have been processed in the auction or they have been explicitly canceled by a participant. Such market orders that are not filled in the auction will be canceled at the conclusion of the auction.

Closing with a Volatility Auction

If an LULD trading pause exists at or after the Closing Auction Lock-in Time (i.e., 3:50 p.m.) and before the Closing Auction, the Volatility Auction will be conducted at 4:00 p.m. with on-close orders and produce the IEX Official Closing Price. Participants may continue to submit LOC and limit orders marked DAY, GTX, GTT, SYS, or IOC, however MOC and market orders are rejected upon submission. Orders will remain open and participants may cancel open orders until the auction match. At the later of the Closing Auction Lock-in Time or the pause dissemination, all on-close orders will be transferred into the Volatility Auction, and non-displayed, DAY limit orders and pegged orders that were on the Continuous Book are canceled in order to allow participants to re-enter such interest as Eligible Auction Orders.⁴ Once the auction is complete, any on-close orders that are unable to participate in the auction will be canceled as will unexecuted DAY and IOC orders. All other unexecuted orders or non-displayed interest that did not participate in the auction will be released to the Continuous Book for normal processing.

If there is insufficient trading interest in the IEX System to execute a Volatility Auction at 4:00 p.m. (i.e., the lack of any bid interest priced to be marketable against any available offer interest), IEX will not conduct a Volatility Auction in that security. In that case, IEX will instead use the Final Last Sale Eligible Trade as the IEX Official Closing Price in that security for that trading day, as it does when there is insufficient trading interest to execute the Closing Auction on a daily basis.

IEX Reopening Trade

Upon completion of a Volatility Auction, the IEX Reopening Trade for the security will be disseminated to the Consolidated Tape as a bulk execution. The IEX Reopening Trade will be the execution that resulted from the Volatility

⁴ Note that non-displayed interest on the Continuous Book at the time of the pause is not eligible for the Volatility Auction, however orders with non-display instructions received during the Order Acceptance Period are Eligible Auction Orders.

Auction.

The IEX Reopening Trade will be represented by a sale condition code of '5' (Market Center Reopening Trade) in Category 2 and a sale condition code of 'X' (Cross Trade) in Category 4. If the auction match results in an odd lot execution, the IEX Reopening Trade will be represented by a sale condition code of '5' (Market Center Reopening Trade) in Category 2 and a sale condition code of 'I' (Odd Lot Trade) in Category 4.

If a security does not have a Volatility Auction (e.g., there is insufficient interest to conduct an auction), continuous trading begins by canceling all on-auction orders and transferring any queued orders to the Continuous Book; the IEX Reopening Trade will be the price of the Initial Last Sale Eligible Trade and will be represented by a sale condition code of '5' (Market Center Reopening Trade) in Category 2.

Volatility Auction Order Types

At the time of the auction match, IEX will not enforce the Anti-Internalization attributes on any order, but will enforce the attribute for any unfilled shares remaining after an auction which are released to the Continuous Book.

Limit Orders

Limit orders are executable from 8:00 a.m. to 5:00 p.m.; includes DAY (executable from 9:30 a.m., to 4:00 p.m.), GTX (executable from 9:30 a.m., to 5:00 p.m.), SYS, GTT, IOC, and FOK orders. All limit orders with the exception of orders marked FOK participate in the Volatility Auction. IOC limit orders may be used in Volatility Auctions to achieve on-auction behavior, similar to an LOO in the Opening Auction (i.e., cancel any unexecuted portions of the limit order at the conclusion of the auction process).

Displayed interest from limit orders on the Continuous Book at the time of the pause dissemination will participate in the auction process using their Resting Price for ranking purposes, and will be reflected in the IEX Auction information published. Non-displayed and non-displayed portions of limit orders on the Continuous Book at the time of the pause dissemination **will not** participate in the Volatility Auction. Non-displayed limit orders and reserve limit orders with non-displayed portions are accepted during the Order Acceptance Period and participate in the Volatility Auction ranked at their limit price with display priority for the full order quantity. Unfilled shares from limit orders remaining at the conclusion of the Volatility Auction will be released to the Continuous Book, with the exception of IOC limit orders.

An imbalance only order is not an available order type, and imbalance only orders are not accepted or executed by IEX.

Market Orders

Executable from 9:30 a.m. to 4:00 p.m., includes DAY, IOC, and FOK. All market orders with the exception of orders marked FOK **participate** in Volatility Auctions. Unfilled market order shares remaining at the conclusion of the Volatility Auction will be canceled.

Pegged Orders

Pegged orders are executable from the Volatility Auction time to 4:00 p.m.; includes DAY, SYS, GTX, GTT, IOC, and FOK. All pegged orders are **excluded** from a Volatility Auction.

Routable Orders

Limit or market orders may be marked as routable. At the conclusion of a Volatility Auction, a routable DAY (prior to 4:00 p.m.), GTX, SYS, or GTT limit order will be released to the Continuous Book. A routable limit order will be routed when an away market locks or crosses the order's limit price, per Re-sweep specifications.

On-Open Orders

Not executable in a Volatility Auction.

On-Close Orders

Executable in a Volatility Auction if the auction is scheduled at or after the conclusion of the Regular Market Session. Can be Limit-On-Close (“LOC”) or Market-On-Close (“MOC”).

MOC orders must be received prior to the Closing Auction Lock-in Time to guarantee eligibility for participation in the Volatility Auction. MOC orders received after the Closing Auction Lock-in Time are rejected from the Volatility Auction. LOC orders must be received prior to the time of the Volatility Auction match to guarantee eligibility for participation in the Volatility Auction.

Execution Priority

Orders on the IEX Order Book are ranked and execute in a Volatility Auction in Auction Priority, which can be described simply as price – time priority.

Volatility Auction Execution Priority

1. Market and MOC orders execute in time priority.
2. All other Eligible Auction Orders priced more aggressively than the official auction price execute in price – time priority.
3. Eligible Auction Orders priced equal to the official auction price execute in time priority.

Contingency Procedures

In the event of systemic issues, the determination to use the Primary Contingency Procedures will be made by the President of IEX or any Senior Vice President designated by the President. IEX will publicly announce at the earliest possible time the initiation of the Contingency Procedures via a System Status, Trading Alert, and email notification directories.

If IEX employs the Contingency Procedures for the Volatility Auction, trading for the security will begin upon resolution of the disruption that triggered IEX to operate the contingency procedures.

Contingency Procedures

In the event of systemic issues at IEX at the time of a Volatility Auction, IEX reserves the right to employ the following Contingency Procedures.

Note that IEX reserves the right to employ the Closing Auction Contingency Procedures for a Volatility Auction being used to determine the IEX Official Closing Price.

Volatility Auction

IEX will publicly announce that no Volatility Auction will occur and open the security for trading without an auction.

SHORT SALE ORDER HANDLING

Opening/Closing Auction: Short sale orders for covered securities subject to Rule 201 of Regulation SHO that are in an active short sale circuit breaker will only be eligible for execution at a price above the last NBB at the time of the auction match.

Halt/Volatility Auction: Short sale orders for covered securities subject to Rule 201 of Regulation SHO that are in an active short sale circuit breaker will only be eligible for execution at a price above the last NBB prior to the halt/pause.

Note that the auction match may produce a valid price that is higher than the limit price of an auction participating short sale order (for covered securities subject to Rule 201 of Regulation SHO) during an active short sale circuit breaker, because trading through all or portion of a short sale order is possible if the short sale order's participation in the price setting process of the auction would push the auction match price to or below the referenced NBB price.

Execution priority is outlined in more detail below to identify specifically how short sale orders for covered securities subject to Rule 201 of Regulation SHO that are in an active short sale circuit breaker are prioritized in an auction.

Auction Execution Priority with Short Sale Order Handling

1. Market, including MOO and MOC, buy and sell long orders execute in time priority, and any sell short orders that do not push the auction match price to or below the referenced NBB execute in time priority.
2. All other buy and sell long *Eligible Auction Orders* priced more aggressively than the official auction price execute in price - display - time priority (Opening/Closing Auction) or price - time priority (Halt/Volatility Auction), and any sell short orders that do not push the auction match price to or below the referenced NBB execute in price - display - time priority (Opening/Closing Auction) or price - time priority (Halt/Volatility Auction).
3. *Eligible Auction Orders* priced equal to the official auction price execute in display - time priority (Opening/Closing Auction) or time priority (Halt/Volatility Auction), and any sell short orders that do not push the auction match price to or below the referenced NBB execute in display - time priority (Opening/Closing Auction) or time priority (Halt/Volatility Auction).

During the auction match, if the inclusion of a sell short order would push the auction match price to or below the referenced NBB price, then such sell short order and all other sell short orders with lesser priority are excluded from the auction match.

TRANSFERS

Securities that transfer from another listing exchange to IEX will follow normal Opening and Closing Auction schedules on the effective date of the transfer. Pre-Market Session trading prior to the Opening Auction match at 9:30 a.m. will also be available for these securities.

EXAMPLES

To demonstrate the value of the different price indicators used in the IEX auction process for various situations, consider the following examples. Note that IEX Auction information updates are time based and are not disseminated until the *Lock-in Time*. These examples are not indicative of what would be expected in an IEX Auction update.

Market Order Only Auction

Previous closing price is \$10.05.

#	Entry Time	Buy Shares	Sell Shares	Order Type/Price	Reference Price	Imbalance Side	Imbalance Shares	Paired Shares	Indicative Price	Auction Price
1	9:27:00	1,000		MOO						
2	9:27:01		1,000	MOO						
3	9:27:02	1,000		MOO						
4	9:27:05		1,000	MOO						
5	9:28:00				\$10.05	N	0	2,000	\$10.05	\$10.05

At 9:30:00, this auction would execute 2,000 shares at \$10.05.

Limit Order Only Auction

NBBO is \$13.75 x \$14.00 (created by order 1 & 2) until 9:28:59 at which point it becomes \$13.80 x \$14.00 due to the introduction of order 10 on the Continuous Book. Previous closing price is \$10.05.

#	Entry Time	Buy Shares	Sell Shares	Order Type/Price	Reference Price	Imbalance Side	Imbalance Shares	Paired Shares	Indicative Price	Auction Price
1	9:28:30	5,000		Limit/\$13.75	\$10.050	N	0	0	0	0
2	9:28:31		5,000	Limit/\$14.00	\$13.875	N	0	0	0	0
3	9:28:42	2,000		LOO/\$14.00	\$13.875	B	2,000	0	\$14.000	0
4	9:28:43		1,000	LOO/\$13.75	\$13.875	B	1,000	1,000	\$14.000	\$14.000
5	9:28:54		2,000	LOO/\$13.90	\$13.900	S	1,000	2,000	\$13.900	\$13.900
6	9:29:00		4,000	LOO/\$13.00	\$13.750	S	3,000	2,000	\$13.750	\$13.000
7	9:29:06		6,000	LOO/\$12.00	\$13.750	S	9,000	2,000	\$13.000	\$12.000
8	9:29:29	7,000		LOO/\$13.50	\$13.750	S	9,000	2,000	\$13.500	\$13.000
9	9:29:30	9,000		LOO/\$13.75	\$13.750	N	0	11,000	\$13.750	\$13.750
10	9:29:59	1,000		Limit/\$13.80	\$13.800	S	9,000	2,000	\$13.750	\$13.750

At 9:30:00, this auction would execute 11,000 shares at \$13.75.

No Match Occurs in the Auction

The last trade during the Regular Market Session occurred at 15:15 at \$17.25. NBBO becomes \$15.00 x \$18.00 (created by order 2 & 3).

#	Entry Time	Buy Shares	Sell Shares	Order Type/Price	Reference Price	Imbalance Side	Imbalance Shares	Paired Shares	Indicative Price	Auction Price
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#	Entry Time	Buy Shares	Sell Shares	Order Type/Price	Reference Price	Imbalance Side	Imbalance Shares	Paired Shares	Indicative Price	Auction Price
1	15:54:00		4,000	LOC/\$17.00	\$17.250	S	4,000	0	0	0
2	15:55:00	5,000		Limit/\$15.00	\$17.250	S	4,000	0	0	0
3	15:56:00		3,000	Limit/\$18.00	\$16.500	N	0	0	0	0
4	15:58:00		3,000	LOC/\$17.50	\$16.500	N	0	0	0	0

As there is no match on the book at the auction match, the official closing price will be set to \$17.25.

Market/Limit Order Auction

NBBO is \$10.00 x \$10.01 (created by order 1 & 2) until 9:28:59 at which point it becomes \$10.01 x \$10.02. Previous closing price is \$10.05.

#	Entry Time	Buy Shares	Sell Shares	Order Type/Price	Reference Price	Imbalance Side	Imbalance Shares	Paired Shares	Indicative Price	Auction Price
1	9:27:01	10,000		Limit/\$10.00						
2	9:27:01		10,000	Limit/\$10.01						
3	9:27:02		10,000	Limit/\$10.02						
4	9:27:02	100,000		MOO						
5	9:28:03		50,000	MOO	\$10.010	B	50,000	50,000	\$12.006*	\$0.000**
6	9:28:07		20,000	LOO/\$9.90	\$10.010	B	30,000	70,000	\$12.006*	\$0.000**
7	9:28:20		30,000	LOO/\$10.05	\$10.010	B	30,000	70,000	\$10.050	\$10.050
8	9:29:09	20,000		LOO/\$10.10	\$10.010	B	50,000	70,000	\$10.050	\$10.100
9	9:29:20		30,000	Limit/\$10.10	\$10.010	B	50,000	70,000	\$10.050	\$10.100
10	9:29:31		50,000	LOO/\$9.99	\$10.005	N	0	120,000	\$10.005	\$10.005
11	9:29:59	50,000 (40,000 remain after fill against order 2)		Limit/\$10.01	\$10.005	N	0	120,000	\$10.015	\$10.015

At 9:30:00, this auction would execute 120,000 shares at \$10.015.

* Indicative Prices are at the Opening/Closing Auction Collar (10% of the Midpoint Price, \$10.005, above the NBB)

** Auction Book Clearing Prices are zero when there is a market order imbalance.

Limit Order Auction with Non-Displayed Interest

NBBO is \$10.00 x \$10.01 (created by order 1 & 2) until 9:27:59 at which point it becomes \$10.01 x \$10.02. Previous closing price is \$10.05.

#	Entry Time	Buy Shares	Sell Shares	Order Type/Price	Reference Price	Imbalance Side	Imbalance Shares	Paired Shares	Indicative Price	Auction Price
1	9:28:01	10,000		Limit/\$10.00	\$10.050	N	0	0	0	0
2	9:28:01		10,000	Limit/\$10.01	\$10.005	N	0	0	0	0
3	9:28:02		10,000	Limit/\$10.02	\$10.005	N	0	0	0	0
4	9:28:02	100,000		MOO	\$10.010	B	100,000	0	\$12.006*	0
5	9:28:03		50,000	MOO	\$10.010	B	50,000	50,000	\$12.006*	\$11.006
6	9:28:04		20,000	LOO/\$9.90	\$10.010	B	30,000	70,000	\$12.006*	\$11.006
7	9:28:05		30,000	LOO/\$10.05	\$10.010	B	30,000	70,000	\$10.050	\$10.050
8	9:28:06	20,000		LOO/\$10.10	\$10.010	B	50,000	70,000	\$10.050	\$10.100
9	9:28:07		30,000	Limit/\$10.10	\$10.010	B	50,000	70,000	\$10.050	\$10.100
10	9:28:31		50,000	MOO	\$10.005	N	0	120,000	\$10.005	\$10.005
11	9:28:59	50,000 (40,000 remain after fill against order 2)		Limit/\$10.01	\$10.005	N	0	120,000	\$10.015	\$10.015

At 9:30:00, this auction would execute 120,000 shares at \$10.015.

* Indicative Prices are at the Opening/Closing Auction Collar (10% above the Midpoint Price of \$10.005)

REFERENCES

Order Entry

For more information regarding auction specific order types such as LOO, LOC, MOO, and MOC, refer to the order entry specification:

- [IEX FIX Specification](#)

Market Data

For more information regarding IEX Auction information messaging, refer to the appropriate market data specification:

- [IEX TOPS Specification](#)
- IEX AIMM Specification

SUPPORT

Please email questions or comments regarding this document to marketops@iextrading.com

REVISION HISTORY

Version	Date	Change
DRAFT	TBD	Initial document