**Rule Self-Certification**

May 11, 2017

Christopher J. Kirkpatrick

Office of the Secretariat

Commodity Futures Trading Commission

Three Lafayette Center

1155 21st Street, NW

Washington, DC 20581

Re: **Implementation of Modifications to the NFX Trading System**

**Reference File: SR-NFX-2017-18**

Dear Mr. Kirkpatrick:

Pursuant to Section 5c(c)(1) of the Commodity Exchange Act, as amended (“Act”), and Section 40.6(a) of the regulations promulgated by the Commodity Futures Trading Commission (“CFTC” or the “Commission”) under the Act, NASDAQ Futures, Inc. (“NFX” or “Exchange”) amends its Rules at Chapter I, Chapter IV, the General Reference Guide, the Mass Quote Protection & Self-Match Prevention Reference Guide and Combination & Implied Orders Technical Reference Document. The amendments address updated functionality of the NFX trading system’s functionality with respect to Implied Orders and Self-Match Prevention; clarification of certain language in the rulebook and reference guides; and removal of language no longer needed in light of changed functionality. This rule change will be implemented on May 28, 2017 for trade date May 29, 2017. The text of the amended rulebook is set forth in the attached Exhibit A. The text of the Reference Guides is set forth in Exhibit B.

**Updated Functionality**

**Chapter IV: Trading System**

**Implied Out Orders**

NFX is amending the process for generating Implied Out Orders to allow for the generation of Implied Out Orders across a range of prices during the trading session. Under the existing NFX Trading System, Implied Out Orders are generated based on the best prices for the underlying instruments. The resulting Implied Out Order is only generated and submitted into the Order Book in the event it prices at or improves the Best Bid or Offer (“BBO”). Under the new mechanism, Implied Out Orders still generate based on the respective prices for the underlying instrument. However, Implied Out Orders will now generate as long as their price is within pre-set Order Price Limits pursuant to the Rules in Chapter IV, Section 5. Under the existing NFX Trading System, market participants are unable to see the depth of book of Implied Orders because the NFX Trading System only generates Implied Out Orders that are at or improve the BBO. This new Implied Out Order handling methodology will allow market participants to see all Implied Out Orders within the Order Book across a pre-set pricing window.

**Self-Match Prevention**

NFX is adopting the industry standard and removing self-match prevention (“SMP”) from Implied Orders. Currently, NFX allows market participants to elect a self-match prevention functionality which will prevent Orders and Quotes on the other side of the book with the same Market Participant Identification (MPID). Currently, NFX offers SMP for Implied Orders. NFX has decided to remove this functionality from Implied Orders in order to align itself with industry practice. NFX anticipates that self-match of Implied Orders will be unintentional as there is no way for a market participant to intentionally self-match an Implied Order. After the rule change, NFX Regulatory Surveillance will review Implied Orders to determine to what extent, if any, participants’ Implied Orders result in self-match.

**Clarifying Amendments**

NFX is amending the Combined & Implied Orders Technical Reference Document (Combo & Implied Order Ref Doc) to clarify that Combination Orders may only list combinations comprised of futures exclusively or options exclusively, not combinations of futures and options. This certification also removes both Conversion and Reversal Order types which had erroneously been included in the list of order types that could be used for Combination Orders. Both order types use futures and options within one combination and as a result, would not be supported by the trading system.

NFX is amending the Combination & Implied Orders Technical Reference Document to remove the term “Aggregated” when referencing Implied Orders. As discussed above, NFX has dis-aggregated Implied Out Orders such that all Implied Out Orders which generate within Pre-Set Order Price Limits are displayed in the Order Book. Under the present operation of the NFX Trading System, Implied Out Orders only generate when they price at or better than the BBO. NFX is also removing illustrative examples from the NASDAQ Futures, Inc. (NFX) Mass Quote Protection & Self-Match Prevention Reference Guide which had previously detailed the operation of the Exchange’s legacy SMP functionality (Skip Internal) and Aggregated Implied Orders.

Finally, NFX is removing all references to Cross-Orders from all reference guides. On May 2, 2017, NFX certified a rule change removing Cross-Orders from the Exchange’s rulebook. The amendment in this filing conforms the reference guides to the rulebook.[[1]](#footnote-1)

There were no opposing views among the Exchange’s Board of Directors, members or market participants. The Exchange hereby certifies that the amendments to Chapter I, Chapter IV and the Reference Guides comply with the Commodity Exchange Act and regulations thereunder. The Exchange also certifies that a notice of pending certification with the Commission and a copy of this submission have been concurrently posted on the Exchange’s website at [business.nasdaq.com/futures](http://business.nasdaq.com/futures).

If you require any additional information regarding the submission, please contact Aravind Menon at +1-301-978-8416 or via e-mail at [aravind.menon@nasdaq.com](mailto:aravind.menon@nasdaq.com). Please reference SR-NFX-2017-18 in any related correspondence.

Regards,

Daniel R. Carrigan

President

cc: National Futures Association

**Exhibit A to SR-NFX-2017-18**

New language is underlined; deleted language is ~~stricken~~.

**NASDAQ Futures Rules**

### Chapter I Definitions and Governance of the Exchange

#### Section 1 Definitions

#### \* \* \* \* \*

**Implied Order**. The term "Implied Order" means a derived Limit Order that is automatically generated by the Trading System from a derived price. An "Implied Out Order" derives its price and quantity from resting Combination Strategy Orders and the aggregate of the respective legs which are at the best price for a Contract, as long as the best price is within the pre-set Order Price Limits. An "Implied In Order" derives it price and quantity from the net differential from the best prices as between two contract months for a Contract. If an Implied Out Order is automatically generated by the Trading System which seeks to establish a derived Limit Order more aggressive than the Order Price Limits, the derived Limit Order will re-price at prices at pre-set standard limits "price limit bands" pursuant to the Rules in Chapter IV, Section 8. If a potential Implied Out Order attempts to establish a derived Limit Order inferior to the price limit bands, the derived Limit Order will not be generated. Implied Out Orders do not impact derivation of the Order Price Limit Protection reference price. Implied Out Orders are not generated for Inter-Commodity Spreads or Combination Orders whereby the ratio of any one leg to another is not equal to one. Implied Out Orders will not generate for any Combination Order that is originated by a Futures Participant or its Authorized Traders or Authorized Customers (Tailor Made Combination Order or TMC). Quotes can be used as reference markets for Implied Orders. An Implied Order cannot be an FOK or IOC.

#### \* \* \* \* \*

**ITCH Market Data Protocol.** The term "ITCH Market Data Protocol" or "ITCH" refers to the two Exchange market data messaging protocols: (i) Auxiliary Market Data: reference data, trade reporting activity, cancel trades, RFQs, ~~RFCs,~~ post-trade and administration information; and (ii) ITCH Market Data: anonymous Orders quantity and price at all price levels, matched trades and pre-trade information.

#### \* \* \* \* \*

**Quote.** The term "Quote" means a bid and/or offer. A Quote may be entered as a single Quote or as part of a mass Quote with multiple Instruments. If Quotes are entered as a mass Quote into single-leg Order Books, the number of one-sided or two-sided Quotes is limited to twenty-nine (29) Instruments, not including Combination Orders. ~~Mass Quotes will be accepted into the Combination Order Books as long as the number of one-sided or two-sided Quotes is limited to one (1) Instrument.~~

#### \* \* \* \* \*

**~~Request for Cross.~~** ~~The term "Request for Cross" or "RFC" means an indication of interest submitted by a single party for a two-sided Order at the same price and quantity. A Request for Cross is not an Order. A Request for Cross is a type of a Request for Quote.~~

#### \* \* \* \* \*

**Chapter IV Trading System**

#### Section 4 Acceptable Orders

#### \* \* \* \* \*

(ix) Implied Orders.

(i) Implied Orders will be traded in the Trading System pursuant to the Rules in Chapter IV, Section 5. Implied Out Orders will only be generated if those Limit Orders are at or inside pre-set Order Price Limits ~~improve the BBO~~ of the respective legs at the minimum increment of the respective Contract pursuant to the Rules in Chapter IV, Section 5. The Exchange will disseminate Implied Out Orders through ITCH ~~and FIX~~ protocol~~s~~, except for Inter-Commodity Spreads. Implied In Orders will not be disseminated. Implied Out Orders are not generated for Inter-Commodity Spreads or Combination Orders whereby the ratio of any one leg to another is not equal to one.

#### \* \* \* \* \*

#### Section 5 Execution of Orders

(a) A trade is executed in the Trading System when: (i) one Order is a bid and the other is an offer; (ii) the two Orders are for the same Contract and delivery or Expiry, if an Option Order, the same strike and Option type, if available; and (iii) the price of the bid (offer) equals or is greater (less) than the price of the offer (bid). All Orders entered into the Trading System, once received, are queued by time of entry or amendment and matched as specified by the execution algorithm designated by the Exchange. All Orders are broadcast via FIX to all Futures Participants. ~~Futures Participants may enter Requests for Quotes (RFQs) into the Trading System.~~ RFQs will be anonymous. ~~Futures Participants may enter a Request for Cross (RFC) into the Trading System. RFCs will be anonymous. RFCs are subject to Chapter V, Section 11.~~

#### \* \* \* \* \*

#### Section 10 Self-Match Prevention

(a) \* \* \* \* \*

(b) If Self-Match is engaged, the Trading System will remove certain Orders or Quotes that would otherwise match with Orders or Quotes of Authorized Traders using the same Group MPID. Self-Match Prevention will not apply in the case of Implied Orders. ~~In the case of Implied Orders, an Order or Quote that would result in a self-match will not be removed. Instead, the Implied Order will skip to the next marketable Order or Quote in the Order Book that will not result in a self-match. In the event there is no other marketable Order or Quote in the Order Book, the incoming Order or Quote will be removed, except Incoming Implied Orders may be generated in the Order Book at one minimum trading increment away from the best bid or offer.~~

\* \* \* \* \*

**Exhibit B to SR-NFX-2017-18**

**NASDAQ Futures, Inc. (NFX)   
 General Reference Guide**

Version1.0~~5~~6 **|** 201~~6~~7-~~12~~5-~~1~~29

**NasDAQ Futures (NFX) General REFERENCE GUIDE ~~DECEMBER 12, 2016~~MAY 29, 2017**

\* \* \* \* \*

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\* \* \* \* \*

2 OVERVIEW OF THE MARKET

2.1 Market Structure

\* \* \* \* \*

Trading starts with a Pre-Open Session prior to automatic trade matching or continuous trading in the Open Session. During the Pre-Open Session, price information disseminated includes an indicative Equilibrium Price (price at which the most quantity will execute with the lowest imbalance) when such a price can be established based on existing Order Book information. When an Equilibrium Price can be established, this price and the cumulative volume eligible for matching at that price will be shown on the first price level on both sides of the Order Book. During the Pre-Open Trade Session, pre-existing GTC and GTD Orders may be modified or canceled. Market Orders ~~and Cross Orders~~ will not be accepted during the Pre-Open Session. Any Order with a Time in Force Condition of FOK would be rejected during the Pre-Open Session.

\* \* \* \* \*

2.1.1 Order Book (”On-Exchange Trades”)

\* \* \* \* \*

* + ~~Request for Cross (RFC)—an indication of interest submitted by a single party for a two-sided Limit Order at the same price and quantity. Crossing Order functionality provides customers submitting Cross Orders the best available price with optimal market transparency.~~

\* \* \* \* \*

3TRADING ON THE EXCHANGE

\* \* \* \* \*

3.1 Pre-Open Session

To commence the Pre-Open Session, a market message is sent out to all Participants subscribed to Market Data indicating the start of the Pre-Open Session.

During the Pre-Open Session, Authorized Traders may enter Orders (including Quotes) which may be modified and canceled during the session. Orders will be time-stamped and queued until the end of the Pre-Open Session. During the Pre-Open Session, pre-existing Good-till-Cancelled (GTC) and Good-for-Day (DAY) Orders may be modified or canceled. Market Orders ~~and Cross Orders~~ will not be accepted during the Pre-Open Session. Any Order with a Time in Force Condition of FOK or IOC would also be rejected during the Pre-Open Session. See Chapter IV, Section 3 of the Rulebook for Order types and Time in Force Conditions.

\* \* \* \* \*

3.2 The Uncross

\* \* \* \* \*

~~Any Cross Order matched at the Equilibrium Price will sets the open price in the Open Session.~~ The Order Book ~~then~~ moves from no-matching during the Pre-Open Session to automated matching during the Open Session.

\* \* \* \* \*

~~3.9 Pre-Negotiated / Cross Transactions~~ Reserved

~~The execution of pre-negotiated cross transactions is supported for all NFX Products. Participants and Users can submit pre-negotiated, two-sided Cross Orders to the Exchange for execution. However, prior to execution, the Cross Order transaction must interact with any available liquidity in the Order Book prior to any volume being crossed. A Request for Cross (RFC) which is an RFQ must be entered before the Cross Order can be submitted.~~

~~All Cross Order transactions must follow the following rules and procedures prior to execution:~~

* ~~Cross Orders can contain only a two-sided buy Order at the same price and quantity. Multi-legged transactions will be rejected (i.e. buy 50, buy 50 and sell 100).~~
* ~~The Cross Order will interact will all existing Order types at the Cross Order price (i.e. crossing price) prior to any volume being crossed (including Implied and Iceberg Orders). If the crossing price is at or outside the best bid and/or offer (BBO) in the Order Book, it shall trade against existing Orders in the Order Book.~~
* ~~If the quantity in the crossing transaction is larger than the aggregated Order quantity in the Order Book at the crossing price, then the crossing transaction will trade partially with the Order Book, and the residual crossing quantity will trade against itself (remaining volume that was not crossed will be cancelled from the Order Book).~~
* ~~If no Order exist in the Order Book (i.e. there is no BBO), then the crossing transaction will trade fully against itself.~~
* ~~The crossing transaction will interact with all Order types in their entirety prior to any volume being crossed according to the execution algorithm (e.g., price then time). If the crossing transaction interacts with hidden or non-displayed volume, such as an Iceberg,the non-displayed portion of the Order which becomes displayed after the original portion is executed will be equal to the original displayed quantity. Only if the volume is reduced for an Iceberg Order will it retain its position in the time-priority queue.~~
* ~~Prior to a Cross Order being entered into the Trading System, an RFQ must have FIX tag field 54 populated with the number “8.”~~
* ~~RFQs must be sent in advance of a Cross Order by at least five seconds for Futures and Options pursuant to NFX Rules.~~

~~Cross Order transactions that are submitted by Participants and/or Users that are not properly configured for both the RFC and Cross Order functionality will be rejected. Cross Orders will not be accepted during the Pre-Open Session. See NFX Rulebook at Chapter V, Section 11.~~

\* \* \* \* \*

3.11 Implied Orders

The Exchange offers Implied Out and Implied In Order functionality. Whereas Combination Orders specify a quantity and whether they are buying or selling the combination upfront, Implied Orders are automatic derived Limit Orders generated by the Trading System for the purpose of trading various combinations. If an Implied Out Order is automatically generated by the Trading System which seeks to establish a derived Limit Order more aggressive than the Order Price Limits, the derived Limit Order will re-price at prices at pre-set standard limits “price limit bands” pursuant to the Rules in Chapter IV, Section 8. If a potential Implied Out Order attempts to establish a derived Limit Order inferior to the price limit bands, the derived Limit Order will not be generated. Implied Out Orders do not impact derivation of the Order Price Limit Protection reference price. Implied Out Orders are not generated for Inter-Commodity Spreads or Combination Orders whereby the ratio of any one leg to another is not equal to one. Implied Out Orders will not generate for any Tailor Made Combination Order that is originated by a Futures Participant or its Authorized Traders or Authorized Customers. Quotes can be used as reference markets for Implied Orders. An Implied Order cannot be an FOK or IOC.

\* \* \* \* \*

# 4Order types and Time Conditions

\* \* \* \* \*

**9. Implied Orders**

The term “Implied Orders” means Limit Orders that are automatically generated by the Trading System from a derived price. An “Implied Out Order” derives its price and quantity from resting Combination Strategy Orders and the aggregate of the respective legs which are at the best price for a Contract. An “Implied In Order” derives it price and quantity from the net differential from the best prices as between two contract months for a Contract. The Exchange will not disseminate Implied In Orders through the ITCH Market Data Feed; it will disseminate through FIX. Implied Out Orders will not generate for any Tailor Made Combination Order. Quotes can be used as reference markets for Implied Orders. An Implied Order cannot be an FOK or IOC.

\* \* \* \* \*

**NASDAQ Futures, Inc. (NFX)   
 Mass Quote Protection & Self-Match Prevention Reference Guide**

Version1.0~~4~~5 **|** 201~~6~~7-~~11~~5-~~01~~29

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**NasDAQ Futures (NFX) MQP & SMP REFERENCE GUIDE ~~NOVEMBER 1, 2016~~ MAY 29, 2017**

\* \* \* \* \*

# 5 SELF-MATCH PREVENTION (SMP)

Self-Match Prevention (“SMP”) functionality prevents matching between counterparties affiliated with the same Participant or User. A Participant is defined as a Clearing Futures Participant, Futures Participant, or Authorized Customer. A User is defined as an Authorized Trader. Futures Participants (for example, a Futures Commission Merchant “FCM”) may elect that Orders and/or Quotes not execute against Orders and/or Quotes on the opposite side of the market by its Authorized Traders. A Futures Participant’s Authorized Customer (for example, an NFX Designated Market Maker “DMM” or Proprietary Trading Firm “Prop Firms”) may elect that Orders and/or Quotes not be executed against Orders and/or Quotes entered on the opposite side of the market by its Authorized Traders. An Order may be a Market Order, Limit Order, Market-to-Limit Order, Stop Order, Stop Limit Order, Iceberg Order, TAS Order, Combination Order, ~~Implied Order~~ or Linked Order. Self-Match Prevention does not apply to Implied Orders.

Please note Self-Match Prevention is optional for Futures Participants and Authorized Customers.

FCMs can utilize SMP to prevent unauthorized or unintentional self-matches by its Authorized Traders. For example, FCM Authorized Trader A enters a Limit Order into the NFX Trading System to pay $49.30 for 100 June Brent Crude contracts, and then immediately enters a new Limit Order to Sell 27 June Brent Crude contracts at $49.30. If SMP is not engaged, and if these respective Limit Orders are “top-of-book”, the Limit Orders will match. DMMs and Prop Firms can also utilize SMP to prevent unintentional self-matches by its Authorized Traders. For example, DMM Alpha Authorized Trader Bill enters a Limit Order into the NFX Trading System improving the best bid to pay $2.957 for 200 June Henry Hub Nat Gas contracts. Affiliated DMM Alpha Authorized Trader Jerry sees an opportunity and immediately enters a Limit Order to sell 150 June Henry Hub Nat Gas contracts at $2.952. Since DMM Alpha elected SMP for its Authorized Traders grouped under a unique MPID, the two Limit Orders do not match.

NFX offers two electable versions of SMP functionality to allow Participants to choose how Orders and/or Quotes are handled in the event of a self-match situation in both the single-leg Order Book and Combination Order Book: 1.) Cancel Newest, and 2.) Cancel Oldest. ~~However, neither of these SMP versions apply to Implied Orders. Rather, the Trading System will use Skip Internal SMP to evaluate all Implied Orders (Implied Out or Implied In) generated by Authorized traders grouped under a unique MPID.~~

~~An Implied Out Order derives its price and quantity from resting Combination Strategy Orders and the aggregate of the respective legs which are at the best price for a Contract. An Implied In Order derives its price and quantity from the net differential from the best prices as between two contract months for a Contract. If SMP is elected, Skip Internal functionality will automatically apply to Implied Orders. The Trading System will aggregate all Implied Orders (only one Implied Order will be displayed to the market per leg Order Book and side, with all aggregated implied quantity at best price). However, even if the Trading Algorithm is price-time priority order execution, the aggregated Implied Orders are always ranked last amongst the Orders on the best price, and the ranking of the aggregated Implied Orders does therefore not reflect how the Implied Order will be matched. Further, an Implied Order may either be filled at or better than the implied price if contra side interest exists. However, if the last Implied Order which is entered on the opposite side of the market is at a price which is at or better than the affiliated Authorized Trader's (grouped under a unique MPID) bid or offer, it will be ineligible to execute against that Order and will skip to the next resting Order. (See NFX Reference Guide, Sections 1.2.6 and 1.2.6.1.10, Combination & Implied Orders Technical Reference Document).~~

The configuration for all two electable SMP versions applies in continuous matching Trading Sessions only (the Open Session). Therefore, two Orders submitted by the same Participant might match in an uncross (Pre-Open Session). Additionally, off-Exchange trade reports (Block Trades and EFRPs for Futures) ~~and Crossing Transactions~~ are not subject to Self-Match Prevention functionality.

\* \* \* \* \*

~~6.3 SKIP INTERNAL~~

~~The Trading System uses Skip Internal SMP to evaluate all Implied Orders (Implied Out or Implied In) generated by an Authorized trader under a unique MPID. If SMP is elected, Skip Internal SMP functionality will apply to all Implied Orders. This means that an Order or Quote that would result in a self-match will not be removed. Instead, the Implied Order will skip to the next marketable Order or Quote in the Order Book that will not result in a self-match. In the event there is no other marketable Order or Quote in the Order Book, the incoming Order or Quote will be removed, except Incoming Implied Orders may be generated in the Order Book at one minimum trading increment away from the best bid or offer.~~

~~The Trading System will aggregate all Implied Orders (only one Implied Order will be displayed to the market per leg Order Book and side, with all aggregated implied quantity at best price). However, if the Trading Algorithm is price-time priority order execution, the aggregated Implied Orders are always ranked last amongst the Orders on the best price, and the ranking of the aggregated Implied Orders does therefore not reflect how the Implied Order will be matched.~~

**~~Example 1: Order and/or Quotes of Varied Size and Price~~**

~~Assume that Participant has chosen to engage one of the two SMP versions for Authorized Traders under MPID1:~~

~~Trading System evaluates all Implied Orders with SKIP INTERNAL SMP for Authorized Traders grouped under MPID1. Skip Internal SMP is engaged for any implied order generated by an MPID with any version of SMP active. Because the version of SMP engaged does not impact the outcome for implied orders generated by MPIDs with SMP engaged, the SMP version is not specified in this example.~~

~~Assume that three individual Orders and one Quote are stored in the Order Book:~~

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ~~Bid~~ | | | ~~Offer~~ | | |
| ~~Order No~~ | ~~Quantity~~ | ~~Price~~ | ~~Price~~ | ~~Quantity~~ | ~~Order No~~ |
|  |  |  | ~~101.00~~ | ~~10~~ | ~~MPID4 Order~~ |
| ~~MPID2 Order~~ | ~~10~~ | ~~100.00~~ |  |  |  |
| ~~MPID1 Implied Order~~ | ~~10~~ | ~~100.00~~ |  |  |  |
| ~~MPID3 Quote~~ | ~~20~~ | ~~99.00~~ |  |  |  |

~~Assume that Authorized Trader under MPID1 enters one Order: Sell 30@99.00.~~

~~The MPID1 Sell Order 30@99.00 is matched against the MPID2 Order (10@100.0) (total of 10 contracts).~~

~~The remaining incoming MPID1 Sell Order 20@99.00 is ineligible to execute against the MPID1 Buy Implied Order 10@100.00.~~

~~The remaining incoming MPID1 Sell Order 20@99.00 is matched against the MPID3 Quote (20@99.00) (total of 20 contracts).~~

~~The Order Book, after SMP has been effected, looks like:~~

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ~~Bid~~ | | | ~~Offer~~ | | |
| ~~Order No~~ | ~~Quantity~~ | ~~Price~~ | ~~Price~~ | ~~Quantity~~ | ~~Order No~~ |
|  |  |  | ~~101.00~~ | ~~10~~ | ~~MPID4 Order~~ |
| ~~MPID1 Implied Order~~ | ~~10~~ | ~~100.00~~ |  |  |  |

\* \* \* \* \*

**NASDAQ Futures (NFX)   
 Combination & Implied Orders**

**Technical Reference Document**

Version1.0~~0~~1 **|** 201~~5~~7-5-~~01~~29

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# 1. Combination Strategies

~~The Trading System supports the trading of Strategies also referred to as Combination Orders, which will trade in a separate Combination Order Book. The Exchange may list Futures and/or Options combinations for trading, and users may create their own custom or tailor made combination (TMC) for Futures and/or Options combinations not already defined in the Trading System. Market participants may submit Day Order Combination Orders that, if matched, will simultaneously trade the referenced single leg Instruments according to the specified strategy without execution risk. Once created intraday, the TMC Orders will be visible in the Combination Order Book to the entire market and lives throughout the trading day.~~

The Trading System supports the trading of Strategies also referred to as Combination Orders, which will trade in a separate Order Book. The Exchange may list Combination Orders comprised of either Futures or Options, but not both Futures and Options, and users may create their own tailor made combinations (TMC) for Futures or Options combinations not already defined in the Trading System. Combination Orders consisting solely of Call or Put Options of the same underlying and Expiry but with different strikes must include at least one buy and one sell leg. Market participants may submit Combination Orders that, if matched, will simultaneously trade the referenced single leg Instruments according to the specified strategy without execution risk. Combination Orders will first execute against respective legs of Orders before executing against other Combination Orders within the Combination Order Book. Once implemented, a TMC Order Book is visible to the entire market and lives throughout its defined lifetime from one to ten days (or less, if a single leg expires). ~~Quotes and~~ Orders are permitted in Combination Order Books.

\* \* \* \* \*

|  |  |
| --- | --- |
| **Implied-Out Orders** | Implied-out Orders are automatically generated by the Trading System~~.~~ except for Tailor Made Combination Orders.  ~~When a TMC Order is entered into the Trading System, it will match against existing Orders for that combination as well as against the respective leg Order Book.~~  ~~For each respective leg Order Book, where possible, the Trading System utilized the market prices of all other included instruments to calculate the TMC Order with a theoretical price needed to trade at in order to execute the entire Combination Order at the net price. This TMC Order will be placed into the Order Book as an Implied-Out Order. If the Implied-Out Order is traded, the Trading System will simultaneously trade against Orders in all other instruments., Implied-out Orders are calculated by the Trading System, but will only be published for Instruments where the ratio is 1 (excluding Inter-Commodity Spreads).~~ |

## 1.1 Introduction to Combination Strategies

~~When trading financial instruments, there are numerous strategies where a Combination Order comprised of different Options or Futures contracts, gives the buyer or seller a certainposition. Examples of these include:~~

* **~~Buy and Write (a.k.a. Covered Call)~~** ~~– Buy a Futures Contract, and write call Options.~~
* **~~Call (Put) Spreads~~** ~~– Buy and sell two call (put) Options of the same underlying and expiration but with different strikes.~~
* **~~Calendar (Horizontal) Spreads, Time Spreads~~** ~~- Buy and sell two call (put) Options of the same underlying and strike, but with different expirations.~~
* **~~Straddles~~** ~~– Buy a call Option and a put Option of the same underlying, expiration and strike.~~
* **~~Strangles~~** ~~– Buy a call Option and a put Option of the same underlying and expiration, but with different strikes.~~
* **~~Conversion~~** ~~– Sell a call Option and Buy a put Option of the same underlying, expiration and strike at the same time as buying the underlying, or an underlying Future.~~
* **~~Reversal~~** ~~- Buy a call Option and sell a put Option of the same underlying, expiration and strike at the same time as selling the underlying short, or selling an underlying Future.~~
* **~~Butterfly Spread~~** ~~– A Contract strategy consisting of three legs either for Futures or Options. Butterfly Option Spreads consist of three put and/or call Contracts. Butterfly Futures Spreads consist of three Contracts.~~
* **~~Condor and Iron Condor Spreads~~** ~~– A Contract strategy consisting of four legs. Condor Options Spreads consist of four Options Contracts (all put or all call Contracts). Condor Futures Spreads consist of four Futures Contracts. Iron Condor Options Spreads consist of four Options Contracts (two put and two call Contracts).~~
* **~~Intra-Commodity (Time) Spread~~** ~~– Combinations may be formed by buying and selling two Futures of the same underlying, but with different expirations. Combinations may be formed by two different Future Expiries (NFX WTI Crude Oil Financial Futures, March versus June contract).~~ 
  + ~~The price ratio for the underlying legs will be configured to an integer of one. There will be no change to the trading tick size.~~
* **~~Inter-Commodity Spread~~** ~~– Combinations may be formed of two or three different underlying Futures Contracts (NFX WTI Crude Oil Financial Futures versus NFX RBOB Gasoline Financial Futures versus NFX Heating Oil Financial Futures ”Crack Spread”).~~ 
  + ~~The price ratio for the underlying legs will be configured to an integer of less than one, but rounded to four decimal places to the right from an initial calculation of fourteen places. Accordingly, the minimum price interval for a respective leg price is one hundredth of a cent ($0.0001) versus its outright leg trading tick which may be 0.01.~~

Representative types of Combination Orders accepted by the Trading System, which may be comprised of a minimum of two, but no more than four, legs are as follows:

* **Call (Put) Spreads** – Buy and sell two call (put) Options of the same underlying and expiration but with different strikes.
* **Calendar (Horizontal) Spreads** – Buy and sell two call (put) Options of the same underlying and strike, but with different expirations.
* **Straddles** – Buy a call Option and a put Option of the same underlying, expiration and strike.
* **Strangles** – Buy a call Option and a put Option of the same underlying and expiration, but with different strikes.
* **Butterfly Spread** – A Contract strategy consisting of three legs either for Futures or Options. Butterfly Option Spreads consist of three put and/or call Contracts. Butterfly Futures Spreads consist of three Contracts.
* **Condor and Iron Condor Spreads** – A Contract strategy consisting of four legs. Condor Options Spreads consist of four Options Contracts (all put or all call-Contracts). Condor Futures Spreads consist of four Futures Contracts. Iron Condor Options Spreads consist of four Options Contracts (two put and two call Contracts).
* **Intra-Commodity (Time) Spread** – Combinations may be formed by buying and selling two Futures of the same underlying, but with different expirations. Combinations may be formed by two different Future Expiries (NFX WTI Crude Oil Penultimate Financial Futures, March versus June contract).
  + The price ratio for the underlying legs will be configured to an integer of one. There will be no change to the trading tick size.
* **Inter-Commodity Spread** – Combinations may be formed of two or three different underlying Futures Contracts (NFX WTI Crude Oil Penultimate Financial Futures versus NFX RBOB Gasoline Financial Futures versus NFX Heating Oil Penultimate Financial Futures ”Crack Spread”).
  + The price ratio for the underlying legs will be configured to an integer of less than one, but rounded to four decimal places to the right from an initial calculation of fourteen places. Accordingly, the minimum price interval for a respective leg price is one hundredth of a cent ($0.0001) versus its outright leg trading tick which may be 0.01.

\* \* \* \* \*

### 1.2.6 Implied Generation

~~Aggregated~~ Implieds can be configured to:

1. Be generated or

2. Not be generated.

When used, ~~aggregated~~ Implied Orders are checked every time:

* When an Order is stored, updated or deleted in the Combination Order Book.
* The best price in any of the single Order Books is changed, either improved by a new Order, or worsened by an Order execution or Order cancel.
* The available quantity on best price in any of the single Order Books is changed, either increased -by a new Order at best price, or decreased by an Order execution or Order cancel.

When ~~aggregated~~ Implied Orders are used, ~~only one~~ each Implied Order will be displayed to the market per leg Order Book and side, with ~~all (aggregated)~~ implied quantity at ~~best~~ respective prices. ~~Note that when aggregated Implied Orders are used, the individual Implied Orders will not be displayed to the market.~~

~~Aggregated~~ Implied Out Orders will only be generated if they are at or inside pre-set Order Price Limits ~~improve the BBO~~ ~~(this is not configurable for aggregated Implied Orders)~~

~~The aggregated Implied Orders are always ranked last amongst the Orders on the best price, and the ranking of the aggregated Implied Orders does therefore not reflect how the Implied Order will be matched. However, when Orders are matched, the Implied Orders will be matched according to the ranking of the individual Implied Orders, which is according to price for the Implied Order and time for the Combination Order for which the individual Implied Order is derived. Note that the individual Implied Orders (when using aggregated Implied Orders) are only calculated internally within the Trading SystemTrading System, and are not displayed to the market.~~

Trading System. There are a number of restrictions related to Implied Order generation, and the manner in which Implied Orders are matched in the Trading System, as noted below. Trading System

1. Implied Orders are never generated from other Implied Orders. Implied Orders are created from the Orders in the single Order Book and the Combination Order Book.

2. Matching an Implied Order will not impact Implied Orders in the single Order Books. Only Implied Orders, the Combination Orders and single Orders in the Order Books will be matched. Other Implied Orders in single Order Books will be unaffected, even if they have a better price and/or time than other Orders.

3. Implied Orders are only generated and disseminated to the market for the legs of the Combination Order (Implied-Out). Thus, no Implied Orders~~s~~ are generated in the Combination Order Book (Implied-In).

~~4. Implied Orders are normally re-generated after the execution of the Order. For some matching plug-in Implied Orders can be re-generated as part of the matching when an Implied Order has been fully matched.~~

~~5~~. ~~The Trading System Trading System does not regenerate Implied Orders between individual Orders within a mass quotation transaction. This means that one of the Orders can match the leg of an Implied Order (Order Book B for example), and when a second Order matches the Implied Order (Order Book A for example), the Implied Order can not longer be matched.~~ ~~The Trading SystemTrading System will skip the Implied Order.~~

4.6~~. Implied Orders can be generated from the mass~~ Quotes can be used as reference markets for Implied Orders. ~~in the legs of the Combination Order, but only if there exist other Orders in the Combination Order Book (since mass quotations cannot be sent for the Combination Order Book)~~.

\* \* \* \* \*

##### ~~1.2.6.1.4 Example Mass quotation can skip Implied Order~~

~~Mass quote transaction hit Order Books A and B, and removes the leg in B. The Implied In Order in BookA will not be matched when matching the second Order.~~

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | | **~~Buy Order Book C1 = Buy A Sell B~~** | | | |  |  | | | | |  |  | |
|  |  | |  | | **~~Buy~~** | | **~~Sell~~** | |  |  | |  |  |  |  |  | |
|  |  | |  | | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | **~~Qty~~** |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  | ~~1.000~~ | ~~30~~ |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  |  |  |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  |  |  |  |  | |  |  |  |  |  | |
| **~~Order Book A~~** | | | | | |  | **~~Order Book B~~** | | | | |  |  | | | | |
| **~~Buy~~** | | **~~Sell~~** | | | |  | **~~Buy~~** | | **~~Sell~~** | | |  |  | |  | | |
| **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | **~~Qty~~** | |  | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | **~~Qty~~** |  |  |  |  | |  |
|  |  | ~~99.000~~ | | ~~20 (b) from C1~~ | |  |  |  | ~~98.000~~ | | ~~20~~ |  |  |  |  | |  |
|  |  | ~~99.000~~ | | ~~20~~ | |  |  |  |  | |  |  |  |  |  | |  |

~~The Implied Order in Order Book A is 20 @ 99.000, using the Combination C1 and B. The time stamp for the Implied Order is better than the normal Orders in Order Book A, because the normal Order was entered after the Implied was generated.~~

~~Incoming mass quote:~~

~~Buy 10 B @ 98.000,~~

~~Buy 20 A @ 99.000.~~

~~The incoming Order in B is matched and trades 10 contracts of the quantity in Order Book B, leaving 10 contracts in Order Book B.~~

~~The remaining Order Book looks like:~~

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | | **~~Buy Order Book C1 = Buy A Sell B~~** | | | |  |  | | | | |  |  | |
|  |  | |  | | **~~Buy~~** | | **~~Sell~~** | |  |  | |  |  |  |  |  | |
|  |  | |  | | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | **~~Qty~~** |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  | ~~1.000~~ | ~~30~~ |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  |  |  |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  |  |  |  |  | |  |  |  |  |  | |
| **~~Order Book A~~** | | | | | |  | **~~Order Book B~~** | | | | |  |  | | | | |
| **~~Buy~~** | | **~~Sell~~** | | | |  | **~~Buy~~** | | **~~Sell~~** | | |  |  | |  | | |
| **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | **~~Qty~~** | |  | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | **~~Qty~~** |  |  |  |  | |  |
|  |  | ~~99.000~~ | | ~~20 (b) from C1~~ | |  |  |  | ~~98.000~~ | | ~~10~~ |  |  |  |  | |  |
|  |  | ~~99.000~~ | | ~~20~~ | |  |  |  |  | |  |  |  |  |  | |  |

~~The incoming Order in Buy 20 A @ 99.000 is matched. The Trading System will try to allocate 20 contracts to the Implied Order unless there is not enough leg quantity in Order Book B. Accordingly, the Trading System will not match against the Implied Order entirely, and will allocate the Order in Order Book A instead.~~

~~After allocation of the second Order, the mass quotation ends, and the re-generation of Implied Orders takes place.~~

~~The remaining Order Book looks like:~~

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **~~Buy Order Book C1 = Buy A Sell B~~** | | | |  |  | | | |  |  |
|  |  |  | **~~Buy~~** | | **~~Sell~~** | |  |  |  |  |  |  |  |
|  |  |  | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | **~~Qty~~** |  |  |  |  |  |  |  |
|  |  |  |  |  | ~~1.000~~ | ~~30~~ |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **~~Order Book A~~** | | | |  | **~~Order Book B~~** | | | |  |  | | | |
| **Buy** | | **~~Sell~~** | |  | **~~Buy~~** | | **~~Sell~~** | |  |  | |  | |
| **Qty** | **Prc** | **~~Prc~~** | **~~Qty~~** |  | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | **~~Qty~~** |  |  |  |  |  |
|  |  | ~~99.000~~ | ~~10 (b) from C1~~ |  |  |  | ~~98.000~~ | ~~10~~ |  |  |  |  |  |

~~If the quantity for the second Order was Buy 30 A  @ 99.000, there would be a remaining 10 contracts for the incoming Order at the end of the mass quotation transaction.  This quantity would then be matched when the Implied Order is regenerated, thus at this last step, the Implied Order would be matched.~~

~~When aggregated Implied Orders is used, the individual Implied Orders above are not displayed to the market via ITCH Market Data Protocol. When Orders are matched however, the Implied Orders will be matched according to the ranking of the individual Implied Orders, as indicated above.~~

~~The aggregated Implied Order is always ranked last amongst the Orders on the best price, and the ranking of the aggregated Implied Order does therefore not reflect how the Implied Order will be matched. With aggregated Implied, the single Order Books above will therefore be displayed to the market via the Trading System as:~~

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | | **~~Buy Order Book C1 = Buy A Sell B~~** | | | |  |  | | | | |  |  | |
|  |  | |  | | **~~Buy~~** | | **~~Sell~~** | |  |  | |  |  |  |  |  | |
|  |  | |  | | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | **~~Qty~~** |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  | ~~1.000~~ | ~~30~~ |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  |  |  |  |  | |  |  |  |  |  | |
|  |  | |  | |  |  |  |  |  |  | |  |  |  |  |  | |
| **~~Order Book A~~** | | | | | |  | **~~Order Book B~~** | | | | |  |  | | | | |
| **~~Buy~~** | | **~~Sell~~** | | | |  | **~~Buy~~** | | **~~Sell~~** | | |  |  | |  | | |
| **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | **~~Qty~~** | |  | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | **~~Qty~~** |  |  |  |  | |  |
|  |  | ~~99.000~~ | | ~~20~~ | |  |  |  | ~~98.000~~ | | ~~20~~ |  |  |  |  | |  |
|  |  | ~~99.000~~ | | ~~20 (b) from C1~~ | |  |  |  |  | |  |  |  |  |  |  |  |

~~The aggregated Implied Order is displayed last on best price.~~

\*\*\*\*\*

##### ~~1.2.6.1.7 Example Aggregated Implied (Customized functionality)~~

~~When aggregated Implieds is used, only one Implied will be displayed to the market per leg Order Book and side, with all (aggregated) implied quantity at best price.~~

~~Note that when aggregated Implieds is used, the individual Implieds will not be displayed to the market via ITCH Market Data Protocol.~~

~~Aggregated Implieds will only be generated if they are at or improve the BBO.~~

~~The aggregated Implieds is always ranked last amongst the Orders on the best price, and the ranking of the aggregated Implied does therefore not reflect how the Implied Order will be matched. When Orders are matched however, the Implieds will be matched according to the ranking of the individual Implieds, which is according to price for the Implied and time for the Combination Order upon which the individual Implied is based. Note that the individual Implieds (when using aggregated Implieds) are only calculated internally within the Trading System, and are not displayed to the market via ITCH Market Data Protocol.~~

~~Assume the Combination Order Books:~~

1. ~~C1: Call Spread. Buy 1 C1 = Buy 1 A Sell 1 B~~
2. ~~C2 : Butterfly. Buy 1 C2 = Buy 1 A Sell 2 B Buy 1 C.~~

~~The following available Orders:~~

1. ~~Buy 25 C1 @ 0.0000 (time 09:00:00. Order Id: 1).~~
2. ~~Buy 50 B @ 99.6600 (time 09:10:00. Order Id: 2). This creates an aggregated Implied Order in Order Book A: Buy 25 A @ 99.6600 (time 09:00:00 from combo Order C1, Order Id:1. Order Id for Implied: x).~~
3. ~~Buy 5 A @ 99.6600 (time 09:15:00. Order Id 3). This Order is ranked before the Implied Order. The aggregated Implied is ranked last amongst the Orders at best price. Note that the aggregated Implied does not reflect how the Order will be matched.~~
4. ~~Buy 5 C1 @ 0.0000 (time 09:20:00. Order Id 4). This updates the aggregated Implied Order in Order Book A: Buy 30 A @ 99.6600 (time 09:00:00 from combo Order C1, Order Id:1. Order Id for Implied: x). Thus the aggregated Implied Order is ranked  after the single Order in step 3, because the aggregated is ranked last amongst the Orders at best price. Remaining leg quantity for Implied Orders in B is 20.~~
5. ~~Sell 25 C @ 99.6600 (time 09:30:00. Order Id 5).~~
6. ~~Buy 40 C2 @ 0.0000 (time 09:40:00. Order Id 6). This updates the Implied Order in Order Book A: Buy 40 A @ 99.6600 (time 09:00:00 from combo Order C1, Order Id:1. Order Id for Implied: x). Thus the Implied Order is still ranked after the single Order in step 3. Remaining leg quantity for Implied Orders in B is 0.~~

~~The resulting OrderBook, with the aggregated Implied Order in Order Book A:~~

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  | | |  | |  | |  | **~~Buy Order Book C2 =~~**  **~~Buy A Sell 2 B Buy 1 C~~** | | | | | | | |  |  | |  |  | |
|  | |  |  | | |  | |  | |  | **~~Buy~~** | | | | **~~Sell~~** | | | |  |  | |  |  | |
|  | |  |  | | |  | |  | |  | **~~Qty~~** | | **~~Prc~~** | | **~~Prc~~** | | | **~~Qty~~** |  |  | |  |  | |
|  | |  |  | | |  | |  | |  | ~~40~~ | | ~~0.0000~~ | |  | | |  |  |  | |  |  | |
|  | |  |  | | |  | |  | |  |  | |  | |  | | |  |  |  | |  |  | |
|  | |  |  | | | **~~Buy Order Book C1 =~~**  **~~Buy A Sell B~~** | | | | | | |  | |  | | |  |  |  | |  |  | |
|  | |  |  | | | **~~Buy~~** | | | **~~Sell~~** | | | |  | |  | |  | |  |  | |  |  | |
|  | |  |  | | | **~~Qty~~** | **~~Prc~~** | | **~~Prc~~** | | | **~~Qty~~** |  | |  | |  | |  |  | |  |  | |
|  | |  |  | | | ~~25~~ | ~~0.0000~~ | |  | | |  |  | |  | |  | |  |  | |  |  | |
|  | |  |  | | | ~~5~~ | ~~0.0000~~ | |  | | |  |  | |  | |  | |  |  | |  |  | |
|  | |  |  | | |  |  | |  | | |  |  | |  | |  | |  |  | |  |  | |
| **~~Order Book A~~** | | | | | | |  | | **~~Order Book B~~** | | | | | | | |  | | **~~Order Book C~~** | | | | | |
| **~~Buy~~** | | | | **~~Sell~~** | | |  | | **~~Buy~~** | | | | | **~~Sell~~** | | |  | | **~~Buy~~** | | **~~Sell~~** | | | |
| **~~Qty~~** | **~~Prc~~** | | | **~~Prc~~** | **~~Qty~~** | |  | | **~~Qty~~** | | | **~~Prc~~** | | **~~Prc~~** | | **~~Qty~~** |  | | **~~Qty~~** | **~~Prc~~** | **~~Prc~~** | | | **~~Qty~~** |
| ~~5~~ | ~~99.6600~~ | | |  |  | |  | | ~~50~~ | | | ~~99.6600~~ | |  | |  |  | |  |  | ~~99.6600~~ | | | ~~25~~ |
| ~~40 (b)~~ | ~~99.6600~~ | | |  |  | |  | |  | | |  | |  | |  |  | |  |  |  | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

~~Assume that an Order hits the Implied Order in Order Book A. The Trading System will then calculate the individual Implied Orders before performing the allocation. The individual Implied will not be sent out to the market however.~~

~~The individual Implied Orders will be ranked according to the price for the Implied Order and time for the Combination Order.~~

1. See [SR-NFX-2017-17](http://nasdaqphlx.cchwallstreet.com/NASDAQPHLX/pdf/nfx-filings/2017/SR-NFX-2017-17.pdf), removing Cross-Orders form the NFX Rulebook. [↑](#footnote-ref-1)