

POSIT MTF

User Guidance

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1) Introduction

This document is to be used in conjunction with the POSIT MTF Rulebook and POSIT MTF Participant Manual. FIX and Connectivity Guidance is also available on www.virtu.com (the **Website**).

2) POSIT MTF universe

POSIT MTF only accepts orders for the following financial instruments as follows:

| Segment: | Equities Dark segment | Periodic Auction segment | |
|----------------------------------|--|---------------------------------|--|
| Asset types | <i>Equities instruments (including shares, depository receipts and certificates)</i> | | |
| | <i>Exchange Traded Funds</i> | | |
| Country/Exchange coverage | <i>Austria - Wiener Borse Belgium - Euronext Brussels Cyprus - Cyprus Stock Exchange Czech Republic - Prague Stock Exchange Denmark - Nasdaq OMX Copenhagen Finland - Nasdaq OMX Helsinki France - Euronext Paris Germany - Deutsche Borse Frankfurt Stock Exchange (including XETRA) Greece - Athens Stock Exchange Hungary - Budapest Stock Exchange Ireland - Irish Stock Exchange Israel – Tel Aviv Stock Exchange Italy - Borsa Italiana Netherlands - Euronext Amsterdam Norway - Oslo Bors Portugal - Euronext Lisbon South Africa - Johannesburg Stock Exchange Spain - Bolsa de Madrid Sweden - Nasdaq OMX Stockholm Switzerland - SIX Swiss Exchange Turkey – Istanbul Stock Exchange United Kingdom - London Stock Exchange (including AIM and International Order Book (IOB))</i> | | |

A list of financial instruments currently in the POSIT MTF universe of tradable financial instruments is available in the POSIT MTF Universe reference file on the Website.

3) POSIT MTF trading calendar, hours and trading sessions

POSIT MTF allows trading on business days (Monday to Friday) for financial instruments where the primary listing market is open for trading. Where a primary listing market is closed on a business day then POSIT MTF will be closed for all securities in that market.

The trading hours of each of the segments of POSIT MTF are as follows:

Equities Dark segment

| | |
|----------------------|--|
| POSITNow matches: | From the time the primary listing market opens for continuous trading until the time the primary listing market closes for continuous trading |
| POSIT Close matches: | Between the time the primary listing market has ended trading on the closing auction and 17:00 British Standard Time inclusive |
| POSIT LIS matches: | From the time the primary listing market opens for continuous trading until the time the primary listing market closes for continuous trading and Between the time the primary listing market has ended trading on the closing auction and 17:00 British Standard Time inclusive |

Periodic Auction segment

| | |
|----------------------|---|
| Intraday session: | From the time the primary listing market opens for continuous trading until the time the primary listing market closes for continuous trading |
| After hours session: | Between the time the primary listing market has ended trading on the closing auction and 17:00 British Standard Time inclusive |

ITGL will only change the calendar and/ or hours of operation of any of the segments of POSIT MTF after giving reasonable notice at the Website.

4) Market segments

Participants may interact in any one of the following POSIT MTF market segments:

- Equities Dark Segment
- Equities Periodic Auction Segment (“POSIT Auction”)

Participants can only interact within the respective system for which they have been accepted to enter orders. Orders sent to a system will not be available for interacting in other systems in POSIT MTF.

5) Equities Dark Segment – Functional summary

5.1 Matching Logic

POSITNow system: Orders may enter the system as a reference price waiver order (**RPW**) or a large in scale order (**LIS**) so long as these orders are entered with a Midpoint peg. Orders are matched on a pro rata size basis at the midpoint of the prevailing best bid and best offer of the financial instrument’s primary listing market. In the event that no orders can be matched due to trading constraints, then orders are matched in order of priority: Size (from largest to smallest) and order entry Time (from earliest to latest) at the midpoint of the prevailing best bid and best offer of the financial instrument’s primary listing market. There must be a tradable bid and offer on the primary listing market for any trading to take place. Where a financial instrument is halted or suspended on the primary listing market then no trading will take place. Trading will resume once POSIT MTF detects that the halt or suspension has been removed and the financial instrument has tradable bid/offer quotes on its primary listing market.

POSIT Close system: Orders are matched on a pro rata size basis at the closing price of the financial instrument on its primary listing market. In the event that no orders can be matched due to trading constraints, then orders are matched in order of priority: Size (from largest to smallest) and order entry Time (from earliest to latest) at the closing price of the financial instrument on its primary listing market.

POSIT LIS Any-price system: Orders entering the matching system will match at the best price available from the resting contra orders. Where two or more resting contras are at same price, size pro-rata allocation will apply. In the event that no orders can be matched at the best price available due to trading constraints, then orders are matched in order of priority: Size (from largest to smallest) and order entry Time (from earliest to latest).

Orders will remain in POSIT MTF for matching until they are matched, cancelled, expired or at the end of the relevant trading day's session.

Orders may be accepted by the system prior to the opening times of each session but no trading will take place until the start of market trading hours.

5.2 Supported order types and order protection constraints

The following orders types are supported: Market or Limit, except for POSIT LIS where a Limit must be specified. See section "Order types" for more details.

Participants may additionally choose to include each of the following trading constraints: Minimum Quantity and Self Match.

Minimum Quantity can be specified as either Minimum Acceptable Quantity ("MAQ") or Minimum Execution Size ("MES"). Participants must instruct ITGL (the operator of POSIT MTF) their preference for Minimum Quantity to be treated as MAQ or MES as a participant level setting.

The following order time in force instructions are supported: DAY or Immediate or Cancel ("IOC"). An expiry time may also be specified.

(see section "Order types" for more details).

6) Equities Periodic Auction Segment

6.1 Matching logic

A lit periodic auction segment ("POSIT Auction") running auctions at frequent intervals with randomised timing and subject to certain conditions being met, such auctions being triggered on receipt and acceptance of a buy or sell order into the system segment;

POSIT Auction contains two separate trading sessions: (1) Intraday and (2) After hours. Orders must state which trading session the respective order is to be submitted to.

For each session POSIT Auction will run an auction for a financial instrument as soon as there is a trading opportunity for that particular financial instrument within the POSIT Auction segment. The fixed call period and maximum random call period will be made public on the Website. Unless otherwise stated, the default period will be a fixed call period of 50 milliseconds and a maximum of 50 milliseconds for the random call period.

Orders will participate in any potential auctions until any specified expiration time or time in force instruction on the order; the order is fully filled; cancellation of the order (by the relevant participant or, ITGL as the operator of POSIT MTF); or the end of the trading session.

Any orders unmatched at the end of trading session will be cancelled.

Orders will be accepted prior to the opening times of each session but no trading will take place until the market open hours.

Price determination rule: Where there are matching buy and sell orders within the system, a single match price is determined based on the open orders within the auction period and through a "Price Determination Rule". The Price Determination Rule will identify:

- (1) Maximum executable volume, the price(s)* that maximizes the number of shares that can be executed, taking into consideration any order protection constraints and the allocation logic;
- (2) If there are multiple price levels identified in (1) that achieve maximum executable volume then take the price that is closest to the Reference Price. For auctions during the regular trading session the Reference Price will be the current the midpoint of the prevailing best bid and best offer of the financial instrument's primary listing market ("PBBO"). For auctions After hours the Reference Price will be the Primary Market Closing Price of the financial instrument's primary listing market; and
- (3) If there are two price levels identified in (2) that are equally distant from the Reference Price, then the highest price will be taken.

** The price levels that will be assessed for Maximum executable volume will be at a tick size or half a tick of the PBBO*

The Price Determination Rule will result in a single price.

The Price Determination Rule is for indicative price calculation and for calculating the final execution price for the auction.

Allocation: Where there are multiple buy orders or sell orders that could execute at a given price level and not all order sizes can be filled from the match then orders will be matched based in the order of priority: Participant/User, Size and Time.

- (i) **Participant/User priority** – where there are matching buy and sell orders from the same Participant/User at the price identified from the Price Determination Rule, match these orders first, followed by,
- (ii) **Size priority** – orders that are largest in size first followed by,
- (iii) **Time priority** – orders in order of earliest order entry time

Orders will remain in POSIT MTF for matching until they are matched, cancelled, expired or at the end of the trading session.

Orders may be accepted by the system prior to the opening times of each trading session but no trading will take place until the start of market trading hours.

6.2 Supported order types and order protection constraints

Orders types supported: Market or Limit must be specified. A Peg Bid, Mid or Ask instruction can be specified for the intraday session, where the peg is pegged to the primary market listing of the relevant financial instrument. A Peg Closing price can be added for the After-hours session, where the peg is pegged to the closing price of the primary market listing for the relevant financial instrument. See section "Order types" for more details.

Participants may additionally choose to include each of the following trading constraints: Minimum Quantity and Self Match.

Minimum Quantity can be specified as either Minimum Acceptable Quantity ("MAQ") or Minimum Execution Size ("MES"). Participants must instruct ITGL their preference for Minimum Quantity to be treated as MAQ or MES as a participant level setting.

The following order time in force instructions are supported: DAY, Good for One Auction, or Good If Auction. An expiry time may also be specified.

(see section "Order types" for more details).

6.3 Trading collars

To protect the market and participants against adverse price execution, the system will apply a price collar for Price Determination. During the Regular trading session the default price collar will be set at the European Best Bid Offer (“EBBO”) for the relevant financial instrument where trading can only take place at or within the EBBO. Where there are orders with an “At Price” order constraint outside of the EBBO, the current European High/Low of the day for the relevant financial instrument will apply as an alternative collar. This alternative collar will only apply to orders that have an “At price” order constraint and will prevent the trading of these orders outside of the European High or Low of the day for the relevant financial instrument.

During the After hours trading session the collar will be set at a predefined number of ticks from the Primary Market Closing Price. The predefined number of ticks will be based on the average spread size of each financial instrument and recalculated periodically. The number of ticks for this After hours collar will be made publically available via the POSIT MTF Universe File. The price determination rule will not consider prices that are outside the collar. If the only price from the price determination rule is outside of the collar then no matching (indicative or trade) can occur. If there is no collar that can be determined then no trading will take place.

Definition of EBBO: The EBBO is constructed by ITGL as the best displayed bid order and best displayed sell order from a defined list of exchanges per financial instrument (including the relevant financial instrument’s primary market listing). For each financial instrument in the POSIT MTF universe, an EBBO is constructed in real-time using ITGL’s market data technology.

The EBBO consolidates the best bid and best offers from the following markets, where available: primary market listing, BATS Europe (including Chi-X) and Turquoise. Any changes to these markets that are to be included in the EBBO will be communicated to participants.

Definition of European High/Low: The European High/Low is constructed by ITGL as the current day’s Highest and Lowest traded price from the start of trading from a defined list of exchanges per financial instrument (including the relevant financial instrument’s primary listing). For each financial instrument in the POSIT MTF universe, a High and Low traded price is calculated in real-time using ITG’s market data technology.

The European High/Low will initially consolidate the Highest and Lowest trading price from the following markets, where available: primary listing market, BATS Europe (including Chi-X) and Turquoise. These markets, that are to be included, are the same markets that are used for the EBBO calculation.

6.4 Order cancels and downward amendments

To protect participants against adverse price execution, the system will not accept order cancel requests or downward amendments during an auction. Downward amendments include a reduction in order size or a more passive limit price change. Upward amendments that include an increase in size or a more aggressive limit price change will be accepted on arrival into the system.

6.5 Market data publication

Market data for pre-trade transparency:

The following information is made available for each auction:

- Indicative price: The price at which the system has identified a trading opportunity, using the price determination rule

- Indicative volumes: The volume that would execute for the Indicative price identified above
Publication mechanism: A real-time market data feed, provided by ITGL, is made available for the pre-trade market data information (“MD feed”).

To access the MD feed please contact ITGL, using the contacts supplied in this document. Further details of the MD feed are also available via the POSIT MTF market data technical specification document on the Website.

7) Access / Connectivity

Participants may enter orders directly into POSIT MTF through ITGL’s FIX based connectivity or through other means agreed with ITGL. Details are available via the POSIT MTF FIX and Connectivity Guidance.

8) Tick size rules

POSIT MTF follows the tick size rules as prescribed in article 49 of Directive 2014/65/EU. POSIT MTF will assign a tick size per financial instrument based on RTS 11 rules, assigning a tick size based on the financial instrument’s Average Daily Number of Transactions (“ADNT”).

Where ADNT is not available, POSIT MTF will follow the tick size of the financial instrument on the primary listing market.

The tick size per financial instrument will be made available via the POSIT MTF Universe File on the Website.

Any specified limit price on an order must meet the relevant financial instrument’s defined tick size. This applies to new orders and any amendments to orders. If a specified limit price does not meet the tick size then the order will be rejected by POSIT MTF.

9) “Throttle limit”

POSIT MTF imposes a restriction on the number of messages per second from a participant that is controlled at a participant session level. Messages that exceed a “throttle limit” will be rejected. These throttle limits only apply to orders and corrections. Any cancellations will be accepted by POSIT MTF. The throttle limit is set at 2,000 messages per second.

10) Maximum Order to Trade Ratio

Participants are required not to exceed maximum order to trade ratios (“OTR”) set by ITGL. These ratios will be measured daily in (1) volume based for each financial instrument and (2) number based for each instrument.

The maximum volume based OTR and maximum number based OTR will be published on the Website.

For volume based OTR, the methodology is: (total volume of orders / total volume of transactions)
-1

For number based OTR, the methodology is: (total number of orders / total number of transactions)
-1

Orders include new order submissions, modifications and cancellations sent to POSIT MTF. A modification is treated as cancellation and new order submission, i.e. counted twice.

Transaction means full or partial order executions.

Volume means the number of shares placed or traded.

ITGL will monitor the OTR’s on a daily basis.

Where a participant breaches any of either or both of the maximum volume or maximum based OTR the following penalties may be applied:

- (i) written warning;
- (ii) temporary suspension;
- (iii) issuing a cease and desist order; and
- (iv) termination of participation.

11) Order types

- a) Limit price orders – orders that can be executed at a price that is equal or better to the specified limit price
- b) Market orders – orders that can be executed at any price, within the rules of the relevant segment
- c) Pegged orders – orders that can be executed at a price that is equal or better to the specified peg at the time of execution. Pegs can include:
 - i) Primary Midpoint – pegs to the Midpoint of the current Bid and Offer on the primary listing market of the relevant financial instrument;
 - ii) Primary Aggressive – pegs to the current offer price for buy orders and the current bid for sell orders, in each case, of the current price on the primary listing market of the relevant financial instrument;
 - iii) Primary Passive – pegs to the current bid price for buy orders and the current offer for sell orders, in each case, of the current price on the primary listing market of the relevant financial instrument; and
 - iv) Primary Closing price – pegs to the current day’s closing price on the primary listing market of the relevant financial instrument.

Additional constraints that may be applied to orders:

- d) Minimum Acceptable Quantity (MAQ) – the minimum size to be matched;
- e) Minimum Execution Size (MES) – the minimum size to be matched and where at least one contra meets this minimum size;
- f) Self match – when specified, orders may only execute for the same submitting participant or user; and
- g) At price – when specified, a limit or pegged order can only execute at this price.

The following time in force instructions may also be applied to orders:

- h) DAY – orders will remain in the system until the end of the POSIT trading session;
- i) Good for One Auction - (for the POSIT Auction segment only) orders will remain in the system until the end of the next auction in the relevant instrument; and
- j) Good if Auction – (for the POSIT Auction segment only) orders will remain in the system where there is an auction in progress in the relevant instrument at the time the order enters the system, or where an auction in the relevant instrument can be started upon entry of the order into the system.

12) Contacts

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