equiduct

# Market Model Description

V4.11 – April 2025

# Revision History

| Version | Date Issued | Comment |
|---|---|---|
| V4.0 | Summer 2016 | Consolidated update.<br>Addition of Market Order Match service, MAQ, self-match prevention and technical internalisation. |
| V4.1 | Autumn 2016 | Added size check on orders submitted to the PartnerEx service and additional Zenith features (protection price, automatic quantity management). |
| V4.1a | Spring 2017 | VBBO trading configurations now support dynamic size priority. Updated description of MAQ logic. |
| V4.2 | Winter 2017 | Updated for MiFID II.<br>Removed Trade Reporting. Removed references to FIX Market Data feed.<br>Added Risk Management functionality (Section 6). |
| V4.3 | Spring 2018 | ... |
| V4.3a | Summer 2018 | Update risk management functionality to include:<br>• Order volume limit per participant<br>• Market order handling<br>• Net traded value limits |
| V4.3b | Autumn 2018 | Update open/close procedure for scenario when no LPs available. Update risk management functionality to include new offset allocation limit. |
| V4.3c | Autumn 2020 | Replace PartnerEx with Apex. |
| V4.3d | Spring 2021 | Replace SpotVBBO with Zenith. |
| V4.4 | Autumn 2021 | Updated Stop Order behaviour for 202110a release<br>Re-ordering of glossary. |
| V4.5 | Winter 2021 | Update Apex Liquidity Provision Orders for 202201a release. |
| V4.6 | Summer 2022 | Changes to Pegged orders and other updates for 202207a release. |
| V4.7 | March 2023 | Addition of Unfragmented Trading Service. |
| V4.8 | September 2023 | Addition of Trade Reporting Service description in Section 7. |
| V4.9 | December 2023 | Removal of Trade Reporting Service description due to creation of stand-alone document. |
| V4.10 | January 2025 | Removal of references to LCH SA and additional confirmation that ALP orders can be modified during opening freeze period (Section 3.3). |
| V4.11 | Spring 2025 | Addition of Static Price Collar description in Section 6.4. |

# Related documents

- Exchange Rules
- Trading Rules for Electronic Trading
- Equiduct Market Configuration
- Equiduct FIX Specification
- Equiduct ITCHMD Specification
- Equiduct Product License Agreement (EPLA)
- Equiduct Market Data Brochure
- Apex Fair Usage policy
- Application for Admission

- Risk Management Specification
- RTS 24 - Record Keeping

# Table of Contents

# 1 Introduction

## 1.1 Document Purpose

This document describes the current Market Model of Equiduct, a pan-European exchange focused on delivering best-in-class services for the retail and institutional trading community.

## 1.2 Intended Audience

This document is aimed at clients and potential clients of Equiduct who wish to understand the details of the trading model offered.

This document does not provide all of the business level information pertinent to Equiduct: see "Related Documents" below for details of further documentation. Updates to this and other key documents can be found at Equiduct.

# 2 Market Overview

## 2.1 Exchange Services

Equiduct offers trading in the most liquid equities and ETFs as defined by ESMA, plus additional equities, ETFs, and other ETPs, that are generally considered to be liquid (e.g. because they are included in a main index).

Financial instruments on the market are organised into a series of segments on the basis of the primary market of those instruments. Whilst all segments will follow the same trading day format, timings such as market open and close may vary across segments.

The Equiduct order book is a lit Central Limit Order Book (CLOB) where orders and Market Maker (MM) quotes compete seamlessly alongside each other. Standard order types are available, including At-Best orders, Stop orders, and Pegged orders which track pan-European best prices. The Equiduct order book offers price-internalisation-time trading priority (PIT) to maximise the opportunity for on-Exchange internalisation. To avoid transactions that do not result in a change of beneficial ownership and are therefore stigmatised as manipulative, Equiduct provides self-match prevention functionality.

The order book features an imported crossing mechanism to set the opening and closing price, allowing participants perfect exposure to benchmark European prices.

Uniquely amongst European markets, the Equiduct Trading System (ETS) offers the ability for participants to trade sufficiently fragmented instruments at the volume-weighted best bid or offer (VBBO) determined by Equiduct based on consolidated pan-European visible liquidity. For regulatory reasons and due to market data licensing restrictions, only instruments which are traded on more than one external reference market in addition to the Equiduct order book can be considered "sufficiently fragmented". Equiduct currently offers two VBBO trading services:

- Apex: Brokers with retail flow operating within Equiduct's Apex Fair Usage Policy can use Apex to deliver true pan-European best execution for their clients.
- Zenith: Brokers with institutional flow can use Zenith to access consolidated pan-European best prices.

In both cases, VBBO trading occurs between Brokers and Liquidity Providers (LPs). Only Market Markers providing firm, two-sided liquidity in the order book may register to become an LP, allowing them to additionally provide liquidity to trade at the VBBO.

In addition to trading at the VBBO, retail Brokers submitting orders to Apex can benefit from additional liquidity provided through Apex Liquidity Provision (ALP) orders. ALP orders can be submitted by Apex LPs to improve and/or augment existing price levels within the consolidated order book and deliver improved execution results for retail investors.

Furthermore, ALP orders are used to provide liquidity in unfragmented instruments, where the VBBO is not being calculated. Instead, Apex orders interact with ALP orders alongside orders and quotes resting in Equiduct's CLOB.

Market participants may elect to meet their post-trade transparency obligations by reporting off-book OTC negotiated transactions using Equiduct's Trade Reporting service.

## 2.2 Clearing and Settlement Services

Equiduct offers access to a broad range of CCPs, currently: LCH Clearnet SA, LCH Clearnet Ltd., SIX x-clear, and Cboe Clear Europe. Where possible, clearing access is interoperable so participants can clear via their preferred CCP, although LCH Clearnet SA do not support interoperability. Participants can elect to bypass clearing when self-matching.

## 2.3 Market Data Services

Equiduct offers full pre- and post-trade transparency for all trading services. A standard order book feed is available, including full order-by-order book depth (excluding ALP orders) and all trades concluded on Equiduct.

Additionally, Equiduct publishes the VBBO calculated for a number of shares representative of retail market size (RMS), standard market size (SMS) and an indication of the maximum single fill possible in the two VBBO trading services (PEX – Apex – and SVB – Zenith).

Equiduct also publishes a Market-By-Limit product which provides the top-ten price levels of the consolidated book used to calculate the VBBO, in conjunction with periodic consolidated trades showing a VWAP price and aggregated size. In addition to the 'standard' sizes offered in the VBBO feed, the Market-by-Limit feed permits participants to calculate VBBO trade prices for arbitrary order sizes.

In addition to the above feeds, Equiduct provides an ALP Order Market Data Feed that provides a pre-trade-only view of ALP orders which are available for execution in the Apex service. No post-trade data is included in the feed.

Both the VBBO and Market by Limit data feeds are licensed as proprietary (often referred to as "derived data") by the contributing external venues; i.e. the Equiduct feeds cannot be used to reverse engineer the order book of any individual external venue.

## 2.4 Connectivity Options

Equiduct offers a range of connectivity options tailored to meet the needs of different types of market participant, including order entry via standard FIX 4.4 and an ITCH feed for market data.

Connections are available through a number of major ISVs including:

- Fidessa (Ion)

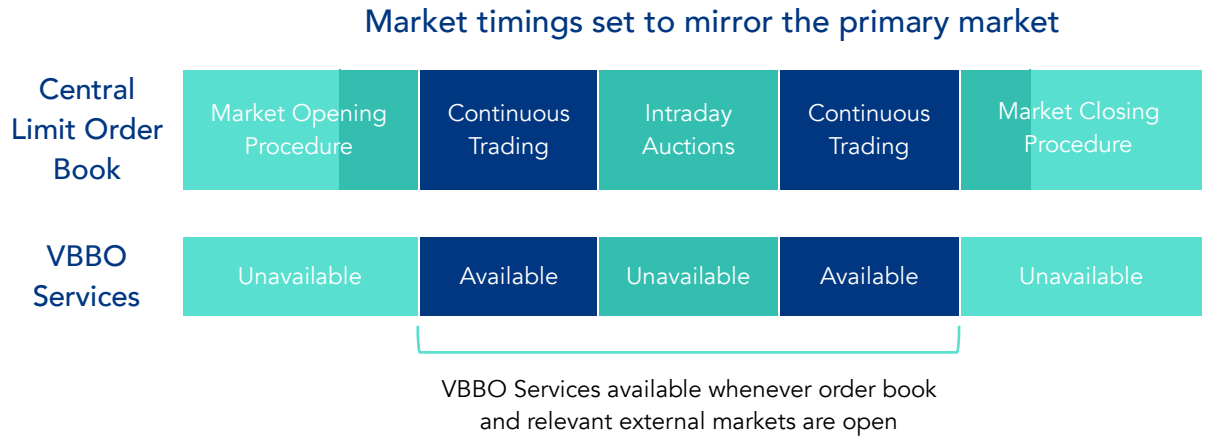
- FIS Global
- Itiviti
- BME Inntech
- Cadit
- EliData
- Horizon Software
- SLIB
- Quod Financial

# 3 Exchange Services

## 3.1 Trading Day

ETS groups instruments into segments on the basis of their primary market. Each segment is assigned a trading calendar and trading day schedule, which in turn is influenced by the trading calendar and schedule of the corresponding instruments on their primary market.

Whilst the exact timings may vary, the format of the trading day will follow a similar pattern in all segments. The Equiduct Market Configuration document contains the values for all timings referenced in this section. Each segment follows the same trading cycle pattern as illustrated below:




Each market segment will transition from a closed state and commence the Market Opening Procedure (see 3.3) with a pre-opening phase at a defined point in the day. At this time, valid open orders from the previous day or entered since the close of the previous day will be visible in the book. During this phase, participants may enter and amend their quotes and orders, ready for the opening cross. Seconds before the scheduled time for the opening cross, the order book is frozen, preventing quote and order entry and amendment, although order cancellation is permitted in some cases. The opening cross will take place shortly after the primary market opening auction occurs or be skipped if the primary market transitions to continuous trading without an auction. After crossing all interest in the book at the primary market price, the opening price is set and, subject to their execution conditions, unexecuted orders will remain in the book available for subsequent execution.

Once the Market Opening Procedure is completed, the system moves into a period of continuous trading where entering quotes and orders are immediately executable.

Like most major European markets, Equiduct provides price monitoring during the continuous trading phase to ensure that price movements occur in an orderly manner. Significant price movements relative to the Europe-wide best bid and offer (EBBO) mid- point will trigger an unscheduled intra-day auction designed to re-establish market prices in an

orderly fashion before returning the instrument to continuous trading. See the Market Configuration document for more details regarding price monitoring procedures employed by Equiduct.

The system will commence the Market Closing Procedure (see 3.9) at a scheduled time, aligned to the start of the closing auction call phase in the primary market for the instrument. During this phase, participants may enter and amend their quotes and orders, ready for the closing cross. Seconds before the scheduled time for the closing cross, the order book is frozen, closing quotes and preventing order entry and amendment, although order cancellation is permitted in some cases. The closing cross will take place shortly after the primary market closing auction occurs. After crossing all interest in the book at the primary market close price, subject to their execution conditions, unexecuted orders will remain in the book available for execution on the next trading day. If no closing auction occurs on the primary market, orders rest in the book and subject to their execution conditions will be available to trade in the subsequent opening procedure.

As described later in this document, the VBBO service takes real-time prices from both the system and relevant external markets to provide a best execution price. Since these prices must be "tradable" in nature (i.e. immediately executable on ETS or the relevant market), VBBO trading is available only whenever the order book and at least one other relevant market are in continuous trading phases.

There is a specific requirement placed upon LPs who are active in the Apex service (see 3.7.1) to support the Opening and Closing Procedure. As a result, where there are no LPs offering the Apex service in a given instrument there will be no Opening or Closing Procedure. In such instruments, there will only be a continuous trading period – aligned with primary market hours – during which only Good-For-Session (GFS), IOC, and FOK orders can be entered. All GFS orders will be expired at the end of the continuous trading period. – aligned with primary market hours – during which only Good-For-Session (GFS), IOC, and FOK orders can be entered. All GFS orders will be expired at the end of the continuous trading period.

## 3.2 Order Types and Execution Conditions

The system offers a range of European standard order types:

- Limit orders
- Market orders
- Pegged orders
- At-Best orders
- Stop orders

Equiduct also supports Apex Liquidity Provision (ALP) orders (see 3.2.6), and further has two custom order types which can only be generated by the system – Offset orders (see 3.2.5) and Sweep orders (see 3.7.8.1).

Participants are able to enter, amend[1] and cancel orders at any time during the trading day, from the start of the pre-opening phase, until systems are shut down after market close. Depending on the order execution conditions specified on the order, orders may either expire at the end of the day or be retained in the system (i.e. persistent) for subsequent trading days.

Participants entering orders into the system will be able to choose from a range of execution conditions which govern the treatment of their orders:

- Good For Day (DAY). These orders will automatically expire at the end of the closing procedure on the day they are entered.
- Good For Session (GFS). These orders can only be submitted during continuous trading and will automatically expire at the end of continuous trading on the day they are entered.
- Good Till Cancel (GTC). These orders will never expire, but may of course be cancelled, or filled if they become executable.
- Good Till Time (GTT). These orders allow participants to specify a precise expiry date and time[2]. Orders which are scheduled to expire outside of system hours will expire before the start of the next trading session, so Good Till Date (GTD) order behaviour can be achieved by setting an expiry time after market close on the intended date of expiry.
- At The Close (ATC). These orders can be entered into ETS at any time during the trading day but will only pass into the order book at the start of the closing procedure. Any unexecuted portion of an ATC order will be automatically expired at the end of the closing cross.
- At The Open (ATO). These orders can be entered into ETS at any time but will only pass into the order book at the start of the opening procedure. Any unexecuted portion of an ATO order will be automatically expired at the end of the opening cross.
- Fill Or Kill (FOK). These orders will either be executed in full (possibly with multiple fills) or not at all. Only valid during continuous trading.
- Immediate Or Cancel (IOC). These orders will be executed as far as possible (possibly with multiple fills) with any remainder immediately cancelled back to the participant. Only valid during continuous trading. IOC orders may have a Minimum Acceptable Quantity (MAQ) assigned in which case they will be cancelled unless at least the requested minimum quantity can be traded in one or more immediate fills.

[1] Participants will not be able to move hidden iceberg order volume into the visible portion of the order using the amend function. Order entry and amendment will not be allowed during the order book freeze period prior to the opening and closing cross.

[2] Orders will be expired at the specified time except where the expiry time falls during an auction call phase. In this case, the order will continue to participate until the end of the auction and then expire.

Not all order execution conditions are available on all order types. The following matrix shows the set of permitted combinations:

| | Limit | Market | Pegged | At-Best | Stop | ALP |
|---|---|---|---|---|---|---|
| Good for Day (GFD) | Y | Y* | Y | Y | Y | Y |
| Good for Session (GFS) | Y | Y* | Y | Y | Y | Y |
| Good till Cancel (GTC) | Y | Y* | Y | Y | Y | Y |
| Good till Time (GTT) | Y | Y* | Y | Y | Y | Y |
| Immediate or Cancel (IOC) | Y | Y | N | Y | N | Y |
| Fill or Kill (FOK) | Y | Y | N | Y | N | Y |
| At the Open (ATO) | Y | Y | N | Y | N | N |
| At the Close (ATC) | Y | Y | N | Y | N | N |

(*) Will rest in the book when entered during non-continuous trading periods.

Where permitted for a given order type, execution conditions can be amended arbitrarily. All order types may be amended to Limit or Market orders but it is not possible to amend orders from other order types to become Pegged, At-Best or Stop orders. ALP orders can only be Limit orders.

The Pegged, At-Best, Stop, and ALP order types – as well as executable Quotes – are discussed in more detail in following sections.

### 3.2.1 Pegged Orders (including SafeOrders)

Pegged orders are dynamically priced limit orders set in relation to a reference price and appear in the book in the same way as normal limit orders. Equiduct supports two types of Pegged Order.

- Primary Market Peg: the ability to peg to either the near side or the far side of the Primary Market.
- EBBO Peg: the ability to peg to either the near side or the far side of the EBBO

Pegged orders allow clients to specify an optional price offset amount in the instrument's trading currency. A positive offset is always added to the dynamically-assigned limit price and a negative offset is always subtracted. The SafeOrder type is legacy shorthand for an EBBO Peg order with zero price offset, i.e. pegged to the opposite side of the EBBO.

Each time[3] the best bid or offer in the consolidated book updates, the limit price of Pegged orders resting in the book will adjust accordingly, possibly causing an execution.

[3] Equiduct reserves the right to conflate and/or throttle the application of EBBO updates for the purposes of pegged order pricing for system capacity and performance reasons.

Note that the ability to offer tracking orders as described here requires prices to be firm and executable; as such, Pegged orders are only accepted when the EBBO or PBBO is two-sided and not in backwardation. If the EBBO or PBBO becomes invalid, resting Pegged orders will remain in the book with their limit prices based on the last valid update.

### 3.2.2 At Best Orders

Also known as "Market to Limit" orders, At-Best orders offer the ability to trade at the best available price but protect against subsequent execution at worse prices. Uniquely on Equiduct, At-Best orders trade at the best price available across all relevant markets.

When entered during continuous trading, At-Best orders will be assigned a limit price matching the opposite side of the EBBO. At-Best orders entered during continuous trading that cannot be at least partially executed on entry (respecting the assigned limit price) will be cancelled. At-Best orders which are partially executed on entry will rest in the book with the assigned limit price and behave identically to a resting Limit order.

At-Best orders entered outside of continuous trading hours will be held and represented as market orders. These At-Best orders will participate in the subsequent opening or closing procedure as market orders, but if not at least partially filled in the cross, will be cancelled. At-Best orders which are traded partially in the opening or closing procedure will be assigned the relevant opening or closing price as a limit and, subject to execution conditions will rest in the book for subsequent execution.

At-Best orders entered during a trading halt or intraday auction will be rejected because they cannot be immediately executed. It is not possible to amend from other order types to an At-Best order.

As an additional feature, participants may specify a limit price when submitting an At-Best order in order to prevent execution in cases where the EBBO does not satisfy the specified limit.

### 3.2.3 Stop Orders

Stop orders accepted by the system are held and not displayed to the market until they are triggered into the book based upon Reference Price updates in relation to the Stop price specified on each Stop order.

#### 3.2.3.1. Reference Price

The Stop order Reference Price is the last (automated[4]) trade price from the consolidated book made up of all reference markets (including the system). If such a trade has not yet occurred on a given day then the opening price will be used. Only trades from the primary market can trigger stop orders before Equiduct transitions to continuous trading and Equiduct may ignore trades, from secondary markets, which are not reasonably related to

[4] An automated trade is defined as an automatic book execution that took place in the lit book of the venue; i.e. not a trade report, negotiated trade or other off-book trade

prices in the consolidated order book, in order to avoid a situation where the Reference Price is not aligned with the wider market.

#### 3.2.3.2. Stop Price

All Stop orders must have a Stop price specified. Stop limit orders must also have a corresponding limit price specified which will be applied to the order once it is triggered into the market.

For Buy Stop orders the Stop price must be strictly greater than the last reference price. For Sell Stop orders the Stop price must be strictly less than the last reference price.

Outside continuous trading hours no checking of Stop prices vs the reference price is performed.

Buy Stop orders will be triggered and enter the book when the reference price is greater than or equal to the Stop price. Conversely Sell Stop orders will be triggered when the reference price is less than or equal to the Stop price.

#### 3.2.3.3. Stop Limit

The limit price specified on a Stop Limit order will be used as the limit price for the Stop order when triggered. Once triggered, a Stop Limit order behaves identically to a normal Limit order and hence the limit price must respect the applicable order book tick size.

For buy Stop Limit orders the limit price must be greater than or equal to the Stop price.

For sell Stop Limit orders the limit price must be less than or equal to the Stop price.

#### 3.2.3.4. Stop Market (Stop Loss)

To protect users against an execution at a price worse than could have been achieved in the primary market, Stop Market orders which are not filled immediately upon being triggered will be converted into a Market Peg order. Triggered Stop Market orders may, subject to execution conditions, participate in the opening or closing procedure where they will trade as a normal market order. In such cases, Stop Market orders which are not filled in the opening procedure will take the opening price as their limit until the EBBO becomes available. Stop Market orders triggered by the closing cross price will, subject to execution conditions, participate in the subsequent opening cross procedure.

#### 3.2.3.5. Validity & Processing

Stop orders which are triggered by the opening cross price will be introduced into the CLOB after the opening procedure has completed and Equiduct has transitioned to continuous trading. They may trade immediately or rest in the CLOB for later execution. Stop orders which are triggered by the closing cross price will, subject to execution conditions, be inserted into the book after the closing procedure has completed and participate in the subsequent opening procedure. Once triggered, Stop limit orders will be subject to the same

processing and lifecycle as their limit order counterparts; Stop market orders will remain in the book as Market Peg orders according to their execution condition.

If there are multiple Stop (limit and/or market) orders triggered by the same trade, they are processed in Stop price/priority timestamp sequence (note that price priority is inverted for Stop prices – i.e. a lower Stop price has higher priority for buy orders and lower priority for sell orders).

It is not valid to amend a non-Stop order to be a Stop order, however it is valid to amend a Stop Limit order to a Stop Market order and vice versa, and to amend from a Stop order to a standard Limit or Market order. Stop prices may only be amended when a Stop order has not yet been triggered. Other amendments, of limit price, quantity etc. are supported according to normal order behaviour.

### 3.2.4 Quotes

A quote is a pair of executable buy and sell prices (with associated volumes) at which an MM is committing to trade in the system with all other Equiduct participants. MMs are required to maintain principal quotes in instruments for which they are registered in at least a required Minimum Quote Size (MQS). Quotes should be reasonably related to the prevailing market[5].

Equiduct may impose a maximum spread requirement on quotes. Where such a maximum quote spread rule is in force, it will be monitored off-line by the Equiduct Market Supervision team ("Handelsüberwachungsstelle") rather than technically enforced by ETS.

At any given point in time, a quote has one of two possible states:

- Closed No execution is possible against the quote, although Market Makers may adjust prices and / or sizes if they wish.
- Open Execution is possible against the quote.

Under normal circumstances, Equiduct requires MMs to open their quotes before the start of the opening freeze period in order that the MM may participate correctly in the opening procedure. Quotes are automatically closed at the start of the opening freeze period and should be re-opened by the end of the opening procedure and maintained open until the start of the closing freeze period, when they will be automatically closed. Quotes may be updated at any time.

Quotes within ETS are electronically executable and will be displayed and ranked pari passu with orders. As with orders, each side of the quote will have a timestamp which governs time priority within a given order book price level. A price change or size increase for a side of the Quote will result in a new timestamp, i.e. losing priority within a given price level of the order book.

Executions against quotes will decrease the remaining quantity of the relevant side of the quote. If this size falls below the MQS, ETS will automatically refresh the size of the quote to

[5] This principle is laid down in MiFID under 4(a) of Article 27.

MQS and update the price of the quote away from the market by a number of ticks specified by the MM. For example, the tick size for an instrument is €0.01 and a Market Maker is quoting €78.90 – €80.10, and has set a quote refresh value of 10 ticks; a trade against the sell-side of the quote, reducing size to below MQS, would trigger a quote refresh to a price of €80.20.

This quote "auto refresh" facility is only triggered at the end of all possible executions of an incoming order, ensuring that a Market Maker's exposure to aggressive incoming orders is limited to their posted price and size only for any incoming order.

Where desired, MMs may elect to disable this "auto refresh" functionality in which case their Quote will automatically close if size falls below MQS, at which point the MM is required to adjust their price as necessary and replenish the Quote volume to at least MQS.

### 3.2.5 Offset Orders

Offset orders are generated by the system and allocated to LPs during the opening and closing procedures. They may be limit or market orders and always have an execution condition of ATO or ATC as applicable. Offset orders are not firm until the corresponding orders trade (or not) in the primary market opening/closing auction and, as a result, Offset orders are not displayed in the Equiduct order book. ALP Orders will not participate in the open and close process and no offset orders will be generated for ALP orders.

### 3.2.6 Apex Liquidity Provision Orders

ALP orders are a unique service offered by Equiduct to allow enhanced execution quality specifically for retail orders submitted to the Apex service. ALP orders can be submitted and managed by registered Apex LPs and are only addressable by orders submitted to the Apex service during continuous trading. Where ALP orders are present, retail orders will match against ALP orders if the execution price is better or equal to a trade which would have otherwise occurred at the VBBO or in the order book. With ALP orders, Equiduct can offer better execution than possible based on the consolidated pan-European order book alone.

### 3.2.7 Order Cancellation

Orders on Equiduct can be cancelled on request of the submitting member, either electronically or by contacting Equiduct Market Control, and will in any case be automatically cancelled by the system in line with specified validity conditions. There are however two further possibilities with respect to the cancellation of orders:

1. In the event of a Corporate Action, Dividend, or segment change on the primary market that causes the cancellation of resting orders on that market, all resting orders on Equiduct will be cancelled before market open on the ex-date or effective date of the change. Further information can be found in the Equiduct Market Configuration document.
2. During Onboarding, or upon request from a member, Equiduct Market Control can configure FIX trading connections with a "Cancel on Disconnect" option which results

in the cancellation of all open orders and closure of quotes if the member's FIX session logs out or is disconnected for any reason whilst Equiduct's systems are open.

## 3.3 Market Opening Procedure

LPs offering liquidity in the Apex service are required to support the Market Opening Procedure. For instruments where no such LP exists, this Market Opening Procedure will not occur.

The Market Opening Procedure consists of six phases. For brevity, we will refer to LPs here to mean "LPs offering liquidity in the Apex service".

1) Pre-Opening.

- Any orders that remain or have been entered since the previous trading day plus ATO orders will pass into the order book.
- MMs (including LPs) can open and modify their quotes, and all participants may enter, amend and delete orders.
- MMs are obliged to have opened their quotes by the start of the Continuous Trading Phase.
- Pegged orders remain in the book for the duration of the opening phase, but are converted into market orders.
- Market order interest is netted. A market offset order is generated for any imbalance and sent to an available LP.
- Offset orders are generated for each limit order in the book and sent to an LP.
- If an LP is unavailable (i.e. their quote is not open), then offset orders will be allocated among the remaining LPs. If no LP is available, then no offset orders will be allocated. Should an LP become available (i.e. by opening their quotes), then offset orders will be allocated to them.
- ALP orders may be submitted and managed but are not available for trading until after the transition to continuous trading.

2) Order book freeze.

- At the start of this phase all quotes are closed by the system.
- Offset orders are generated for any remaining limit orders in the book without an offset order and sent to the appropriate LP.
- If an LP is unavailable at this stage (i.e. quote not open at the start of the freeze period), then offset orders will be allocated among the remaining LPs. If no LP is available, then no offset orders will be allocated.
- Offset orders are not displayed in market data.
- Entry, modification and cancellation of orders is not permitted.
- MMs may manage their closed quotes while the order book is frozen, it is also valid to attempt to open a quote but this change is not effective until the completion of the Opening Procedure.

3) Opening Cross.

- The Opening Cross will take place after the primary market opening auction occurs.
- Match allocation is triggered by feedback from the LPs.
- Matching will take place at the primary market opening price. All market order interest and strictly marketable limit orders will be executed. Limit orders with a price equal to the opening price will be filled, partially filled or unfilled depending on the feedback from the LP[6].
- In the case where the primary market transitions to continuous trading without an uncrossing auction, the Opening Cross will be skipped.

4) Book correction.

- Unexecuted ATO order interest, as well as any offset orders, will be expired.
- The Auction Algorithm (see 3.4) will be run to uncross the book prior to transitioning into continuous trading. The completion of the auction will be subject to any extensions that Equiduct deems appropriate should the equilibrium price deviate too far from the opening price or previous closing price.

Once the Opening Procedure is complete, the market immediately transitions into a Continuous Trading Phase.

## 3.4 Auction Algorithm

The Auction Algorithm is used to correct the book after the opening cross and to resume trading in an orderly manner after an interruption to continuous trading. A single optimal equilibrium price is determined and is used to match any executable quotes and orders, and is guaranteed to result in an un-crossed order book. The algorithm is substantially the same as that used by other major European exchanges and uses the following criteria in order, halting as soon as a single price is chosen:

1) Maximum executable volume. If a single price can be chosen which uniquely maximises the auction volume, then this is chosen as the auction price.

2) Minimum surplus. If, within the set of prices identified in (1) which maximise executable volume, there is a price which minimises the order volume which would be left on the order book priced at the auction price, then this price is selected.

3) Market pressure. If the set of prices identified in (2) would always leave unexecuted order volume on the buy side of the book, then the highest price identified in (2) is selected as the auction price. Similarly, if the remaining volume would always be on the sell side of the book, then the lowest price is used.

[6] Limit order interest at a 'better' price than the primary market opening price is expected to have been filled based on standard auction price determination rules. Limit orders 'at' the opening price, and in exceptional circumstances market orders, may be partially filled or not traded depending on the imbalance in the primary market order book.

4) Reference price. Out of the set of potential prices identified in (2), the price which is closest to the reference (last traded) price for the instrument is chosen. Where no trade has yet occurred in the system for the instrument, the opening price is used as the reference price, and where this is unavailable the previous closing price is used.

## 3.5 Intraday Interruptions

There are two types of circuit breaker on Equiduct: a halt to trading due to a change in trading status on the primary market, and a Price Monitoring Interruption (PMI) caused by an attempt to trade at a price outside of a configured tolerance from the mid-point of the EBBO. The former ensures that in cases of a fast market or volatility that causes the primary market to temporarily halt trading, Equiduct will also halt trading until after the completion of the subsequent auction on the primary market. The latter ensures that during continuous trading phases, Equiduct's trade prices remain in line with the traded prices elsewhere in Europe.

Where ETS detects that the primary market has moved into a scheduled or unscheduled auction (typically a price monitoring interruption or regulatory action), an unscheduled auction will be invoked in the book.

The fact that the book must be uncrossed at the end of the auction when the instrument returns to continuous trading mandates that the resulting intra-day auction on Equiduct is price-forming.

Once ETS detects that the primary market has resumed continuous trading, the order book enters a short resume period after which the price-forming Auction Algorithm is run, any orders and quotes executed, and the instrument transitions back into continuous trading.

Where ETS detects an attempt to trade at a price outside of a predetermined tolerance from the mid-point of the EBBO, a PMI will be initiated, invoking an unscheduled price- forming auction. The resultant auction price to uncross the book must fall within the price boundaries set by the configured tolerance to the mid-point of the EBBO in order for the trade to be allowed and the instrument to resume continuous trading. If the auction price continues to fall outside of the tolerance band a Price Monitoring Extension (PME) will occur allowing further time for the auction price to move in line with the broader market. Multiple PMEs are permitted to prevent trades occurring outside of the price tolerance checks.

If there is unexecuted market order volume that remains in the system following the determination of an auction price within the tolerance bands set within ETS, there will be one Market Order Extension (MOE) to allow other members to enter orders to trade in the auction.

Where execution conditions permit, orders entered during the auction call phase will rest in the order book and participate in the price-forming auction at the end of the call phase. For avoidance of doubt, IOC, FOK and At-Best orders will be rejected during this phase.

## 3.6 Continuous Trading

After the market opening procedure is complete, the instrument will transition into continuous trading. Any unexecuted orders and quotes will pass into the continuous trading phase with the exception of orders submitted to only participate in the opening procedure (ATO), which will have been executed or expired by the end of the opening cross.

During the continuous trading phase VBBO trading services are normally available. Aggressively priced orders and quotes entering the book will result in immediate, automated executions.

At the end of continuous trading all GFS orders will be expired.

### 3.6.1 Price Determination and Execution

Equiduct, in order to maximise internalisation in the book and minimise the resulting post-trade costs, matches according to the following ordered criteria:

- Price. Orders and quotes at the best price are first considered for execution. Within a price level, orders and quotes are sorted according to;
- Internalisation. Orders or quotes from the same market member are given preference over orders / quotes from other members. Orders and quotes are then subsequently sorted according to;
- Time. Orders and quotes are executed and sorted such that the oldest order / quote is executed first.

The priority timestamp for an order is set when it is first submitted to the system. The priority timestamp for each side of a quote is maintained separately and is initially set when the quote is first opened on a given trading day. When the price of an order or quote side is changed, or the displayed size is increased, a new priority timestamp is assigned. In all other cases, the original priority timestamp of the quote side or order is retained.

The chain of executions resulting from an aggressive order executing down the book can be thought of as:

1) Execute all orders / quotes from my firm at the best price level (oldest first[7]).
2) Execute all orders / quotes from other firms at the best price level (oldest first).
3) Execute all orders / quotes from my firm at the next best price level (oldest first).
4) Execute all orders / quotes from other firms at the next best price level (oldest first).
5) ...

This process continues until the aggressive order is filled, or no further execution is possible.

The addition of the internalisation criterion directly in the matching algorithm during continuous trading eliminates the requirement for participants with large order flow and

[7] Note that this includes any the hidden volume of any iceberg orders from the same firm.

seeking to internalise heavily, to build complex logic to withdraw orders from the exchange book and match internally before executing other orders at the best price level. With this approach, participants can simply submit orders to Equiduct in the knowledge that internalisation will be maximised.

### 3.6.2 Self-Match Prevention

Members with principal order flow may wish to flag their principal orders to avoid generating transactions which do not result in a change of beneficial ownership. Where the execution algorithm described in 3.6.1 above would result in a match between two orders from the same Member, both of which are flagged to prevent self-matching, the resting order is cancelled and execution of the incoming order proceeds as normal.

## 3.7 Trading Services

As a further service, Equiduct offers order execution at the VBBO in instruments which are sufficiently fragmented to qualify this service. Instruments that are not sufficiently fragmented can also be traded in the Apex service, where the VBBO is replaced by liquidity provided by ALP orders. VBBO and unfragmented trading is supported by a set of Liquidity Providers. The service is available for any eligible instrument in which at least one LP is registered as an MM and is providing quotes in the book. LPs are allowed to manage their exposure (maximum volume risk limit) on an instrument-by-instrument and Broker-by-Broker basis. The limits can be different based on the side (i.e. buy/sell) of the liquidity, and there can be more than one risk limit between a Broker and LP in a given instrument for different clients of the Broker. Any LP is bound by the Rules to offer liquidity to any Broker who makes a request ("Kontrahierungszwang"). This constraint, combined with the fact that the price is set by the Exchange (the VBBO), leaves the offered maximum volume as the only tool for the LP to implement risk management. Equiduct has monitoring in place to prevent the abuse of this risk management feature which could be used to bypass the regulatory requirement that "… multiple third-party buying and selling trading interests in financial instruments are able to interact in the system." (Art. 4 (19) MiFID II).

### 3.7.1 Apex

The Apex retail service allows trading at the VBBO and against ALP orders where the instrument is deemed unfragmented (see 3.7.9). LPs participating in the Apex service are required to offer trading to all Brokers with qualifying flow. LPs are further required to continuously offer liquidity (i.e. set a non-zero risk limit) on both sides of the market throughout continuous trading, and to support the opening and closing procedure (see 3.3 and 3.9 respectively).

LPs can query and manage risk limits dynamically throughout the trading day, although initial setup of Liquidity Provision in a given instrument is an offline process performed by Equiduct Market Control.

Flow which behaves according to the Apex Fair Usage Policy (FUP) is considered "uninformed" and is rewarded by the continuous availability of liquidity on both sides. To

protect the LP from characteristics which violate the FUP definition both parties (Broker and LP) enter into a specific service agreement in which behaviour in line with the FUP is mandated.

As a specific restriction, orders which exceed the total risk limit offered by all relevant LPs are not valid for the Apex service and will be rejected by the system.

In addition to trading at the VBBO, aggressively priced retail Apex orders can also match against available ALP orders, within the limit price of the Apex order. Where a passively priced Apex order rests in the order book, aggressive orders (including ALP orders) may be submitted by other market participants and execute against the resting Apex order.

### 3.7.2 Zenith

Zenith is a VBBO trading service for Brokers with institutional order flow. LPs participating in the Zenith service are required to offer trading to all Brokers with qualifying flow.

As institutions are expected to have sophisticated requirements for the handling of passive orders, only IOC and FOK orders are permitted in the Zenith service. Further, as institutions have the ability to handle unexecuted orders and route elsewhere if desired, in order to allow LPs to manage the substantial risk positions which may be incurred when interacting with institutional order flow, LPs are permitted to set their dynamic risk limit to zero at the level of a given Broker and order side where risk management processes indicate that this is necessary.

Flow submitted outside of the FUP is eligible for Zenith and considered informed. Both parties (Broker and LP) enter into a service agreement in which no reference to the FUP is made and the LP is allowed to manage their risk by varying their availability and not committing to a given size.

### 3.7.3 Virtual Consolidated Order Book

Upon receipt of a marketable Apex order, Equiduct will create a full consolidated order book using available ALP orders, other orders and quotes from the Equiduct book, and liquidity from external markets, and will generate a sequence of trades to deliver Best Execution for the Apex order.

### 3.7.4 VBBO Price Determination and Execution

For the purpose of calculating VBBO trade prices, ETS imports real-time level 2 (market depth) prices from a range of external markets through low latency direct or vendor- provided data feeds.

ETS imports order book data at the market depth levels that are required to be able to calculate the VBBO of a financial instrument at standard market size. Equiduct will periodically review the typical market depth levels required to calculate the Equiduct VBBO and adjust depth where appropriate and feasible.

ETS uses the external prices – together with those from the order book – to create a virtual, consolidated European order book for the instrument. It then calculates the theoretical volume-weighted average price that an aggressive order would receive if it was executed at that instant in time in the consolidated book[8]. In the unlikely event that the incoming order requires more volume than is available in the virtual consolidated book, Equiduct will restrict executions to prices equal to, or better than, the final (least marketable) price level on the primary market.

In the rare case that an aggressive order exceeds the current risk limit size for the LP in question, the VBBO calculation will occur at the risk limit size and result in a partial fill for this size.

Provided the execution price is acceptable given any limit price attached to the incoming order, this is used to generate an electronic execution (single fill) between the Broker and LP. Where limit orders are not executable at the calculated execution price, ETS will further check for the possibility of a VBBO execution for a smaller trade size and if this is possible will generate a partial fill at the resulting size.

To provide pre-trade transparency to for trading at the VBBO, Equiduct publishes the Equiduct VBBO market data feed, which represents the theoretical execution price at several standard order sizes. Equiduct also publishes the Market-by-Limit data feed containing the top ten price levels of the consolidated book used for determination of the VBBO.

### 3.7.5 Partial Execution Handling

Where the price determination described in 3.7.3 above results in a partial fill for an aggressive order from the Broker, the order may be eligible for further execution against other LPs at the VBBO or against ALP orders. In order to determine whether the order can receive further partial executions at the VBBO, ETS considers the underlying reason for the initial partial fill:

- If the reason the order received a partial fill was that the risk limit offered by the LP was reached without filling the order, the order is eligible for further execution at the VBBO;
- If the order received a partial fill due to liquidity available in the consolidated order book (i.e. a larger fill would have resulted in a VBBO which did not satisfy the limit price for the order) then the order is considered to have received the largest possible fill based on the consolidated order book and is not eligible for further execution at the VBBO.

Where further execution is possible, at the VBBO, the remaining quantity will be addressed to the next available LP, and so on until the order is filled or all LPs have been considered. Each partial execution will follow the same price and size determination rules based on the same snapshot of the consolidated order book. If, after all possible executions have taken

[8] Since ETS uses public price feeds for external market prices, hidden iceberg order volume on external markets cannot be reflected in the volume-weighted average price calculation.

place, there is further remaining volume on the incoming order then the balance will be processed according to the execution condition. IOC orders will have the balance returned to the Broker. FOK orders will have the full order quantity returned.

The balance of GTC, DAY and GTT orders is immediately submitted to the order book. Market orders targeting the VBBO which are only partially filled and are eligible to rest in the book will be treated as a Market Peg order (i.e. pegged to the opposite side of the EBBO).

### 3.7.6 Likelihood of Execution for Passive Orders

In order to maximise the likelihood of execution for VBBO limit orders resting in the order book, ETS continuously monitors the consolidated order book, and if resting VBBO orders become executable at the VBBO they will be resubmitted to trade at the VBBO in price- time priority order[9].

VBBO market orders resting in the order book are treated differently; they are continuously pegged to the opposite side of the EBBO but are resubmitted to trade at the VBBO after a short interval. If still unfilled, the remaining balance of a normal VBBO market order is cancelled, whereas a VBBO Stop market order will be returned to the order book and the process repeated until the order is filled, expires or is cancelled.

In the Apex service, ETS offers enhanced protection against primary market "trade through[10]" to Brokers. In such cases ETS will monitor automated executions from the primary market and when a trade occurs which trades through one or more resting VBBO limit orders in the book, ETS will allocate the quantity from the primary market trade(s) to the affected resting orders in normal price-time priority order. Should these orders remain untraded in the order book after a short interval ETS will, subject to the condition that the order under consideration is at the top of the book, cancel the allocated "trade through" quantity of each resting order and generate a trade of the same size, at the resting order's limit price, between the Broker and an LP. For avoidance of doubt, trades generated via this mechanism are classified as on-book, on-exchange executions.

### 3.7.7 Availability of VBBO Services

LPs are bound to trade at the VBBO price calculated by ETS. It is important that the consolidated book prices underlying the VBBO calculation are live and executable, to protect against potential price manipulation.

For this reason, VBBO trading will only be available where the instrument is in a state of continuous trading on both the system and at least one external market, and where these markets do not report a crossed or locked BBO.

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[9] Specifically, the best-priced and oldest resting VBBO order will be resubmitted to trade at the VBBO. If this order does not consume all available liquidity at the VBBO, the next resting VBBO order will be considered for execution at the VBBO, and so on.

[10] A trade on the primary market at a price strictly below the limit price of a resting buy order, or strictly above the limit price of a resting sell order.

### 3.7.8 Price Integrity and Multilaterality

The process used to calculate VBBO execution prices can lead – in two particular scenarios – to orders and / or quotes in the order book being potentially "traded through[11]", or to the generation of unreasonable execution prices for LPs. In each case, additional protections have been built into ETS to correct for such issues and to ensure multilaterally.

This section presents these two scenarios in detail, along with the logic for handling them.

#### 3.7.8.1. Order Book Trade Through

Consider the scenario where Equiduct has the pan-European best price and an incoming VBBO order on the opposite side of the market exceeds the volume available at this price.

For example:

- For a given instrument the set of markets included for VBBO is just the system and one other market.
- The Broker enters an order to buy 2,000 shares in an instrument where at least one LP is offering to trade this size.

[11] An order or quote in the order book is said to be "traded through" where an execution takes place in at the VBBO at a strictly worse price than the limit price associated with the order / quote. Explicitly, a buy order is traded through if the VBBO price is strictly lower than the order's price, and a sell order is traded through if the VBBO is strictly higher than the order's price.

**ETS**

| Buy | | Sell | |
|---|---|---|---|
| Volume | Price | Price | Volume |
| 4,000 | 83.50 | 86.00 | 1,000 |
| 500 | 83.00 | 87.00 | 15,000 |
| … | … | … | … |

**Other reference market**

| Buy | | Sell | |
|---|---|---|---|
| Volume | Price | Price | Volume |
| 2,800 | 83.75 | 86.50 | 1,500 |
| 2,000 | 83.50 | 87.00 | 3,750 |
| … | … | … | … |

In calculating the VBBO execution price, ETS will create a (virtual) combined order book as below:

**Virtual, consolidated order book**

| Buy | | Sell | |
|---|---|---|---|
| Volume | Price | Price | Volume |
| 2,800 | 83.75 | 86.00 | 1,000 |
| 6,000 | 83.50 | 86.50 | 1,500 |
| 500 | 83.00 | 87.00 | 18,750 |
| … | … | … | … |

An incoming order to buy 2,000 shares in this consolidated book would receive a volume weighted price of 86.25.

If ETS were to execute a trade of 2,000 shares at price 86.25, the order to sell 1,000 shares at 86.00 on the book would have been "traded through", as the submitting Broker was willing to sell at least part of the volume at a strictly better price.

In such scenarios, in order to ensure the price integrity of the system and provide multilaterality, ETS will automatically generate a special order – a Sweep Order – on behalf of the LP and send this to the book. Sweep Orders are designed to interact with the order book and fully execute orders / quotes which are about to be traded through.

In the example above, a Sweep Order is generated to buy 1,000 shares at price 86.00 on behalf of the LP. This will remove the order to sell at 86.00 and allow the VBBO trade to occur at the previously calculated price of 86.25.

Note: The generation and execution of the Sweep Order acts to decrease the exposure of the LP in this scenario. They will face two executions as a result of satisfying the incoming VBBO order - one buy trade of 1,000 shares at price 86.00, and one sell trade of 2,000 at 86.25. Their net position change therefore is short 1,000 shares.

#### 3.7.8.2. Crossed VBBO

Should the VBBO for the incoming order size be crossed (i.e. the best volume weighted bid of the consolidated book is strictly higher than the volume weighted best offer), this would result in a negative effective spread for the LP, and potential issues for pricing integrity of the system.

Such scenarios are unlikely, and when they do occur are transient, due to natural forces of arbitrage in the financial markets. Where they do occur, however, ETS will not allow VBBO execution for that instrument to ensure that LPs are not forced to offer an effective negative spread. In such scenarios, orders with an IOC or FOK execution condition will be cancelled; GTC, DAY and GTT orders will be treated as they would were they not executable at the VBBO (see 3.7.7).

#### 3.7.8.3. Multilaterality

Multilaterality is enforced by ETS and the Rules via four key requirements:

1) The obligation of the LP to offer liquidity to any Broker who so requests ("Kontrahierungszwang", also see 3.7)
2) The requirement (see 3.7.7 above), automatically enforced by the system, for LPs to ensure execution of better priced orders resting in the book in prior to trading at the VBBO.
3) The requirement (see 3.7) that all LPs also act as MMs and continuously offer two-sided liquidity via their Quote in the order book.
4) The ability of registered Apex LPs to submit additional liquidity, available to all retail Brokers with qualifying order flow.

### 3.7.9 Apex Unfragmented Trading

Where VBBO trading is not possible, due to the lack of fragmentation outside of the Primary Market, Market Control can configure instruments as unfragmented and not form a virtual consolidated order book.

Apex Liquidity Providers submit ALP orders to post liquidity in unfragmented instruments, which, along with orders and quotes in the CLOB, are addressable by Apex retail order flow. The daily instrument list displays the status of the fragmentation to aid clients in identifying unfragmented instruments.

#### 3.7.9.1. Order Book Matching

Apex orders will seamlessly interact with ALP order liquidity and/or order and quote liquidity in the CLOB, where the instrument is configured as unfragmented. The price determination and the execution mechanism of Price x Internalisation x Time (PIT) is maintained.

All market participants can submit orders for unfragmented instruments to the CLOB to match against any resting CLOB liquidity, including resting retail orders, but only retail orders can match against ALP orders.

All existing Apex order types and TIFs can be submitted for unfragmented instruments, as described in 3.2. As there is no VBBO trading for unfragmented instruments, no Apex retry functionality will exist. As such, market orders that receive partial execution will not rest and any residual volume will be cancelled back to the client. To provide additional risk controls for brokers, market orders submitted in the absence of ALP liquidity will be rejected back to the client. Unexecuted or partially executed limit orders will rest to be matched against ALP and/or CLOB orders aggressing them, based on the respective execution condition set for the order.

#### 3.7.9.2. Open and Close Procedure

Where unfragmented instruments are supported by LPs offering the Apex service, the opening and closing procedure is identical to instruments where the VBBO is available – see Section 3.3.

## 3.8 Technical Internalisation

LPs who offer trading at the VBBO may also act as Brokers and submit orders for execution at the VBBO. In such cases ETS will automatically prioritise "internal" liquidity for execution of orders submitted by the same firm, which may result in reduced trading and post-trade costs. LPs are still required to provide liquidity to all eligible Brokers at the VBBO, and via their Quote in the order book.

### 3.8.1 Technical Internalisation in Unfragmented Names

For unfragmented names, the normal execution prioritisation of Price x Internalisation x Time will maximise possible internalisation where an LP is providing liquidity in the order book as well as submitting order flow to the Apex service. LPs are still required to provide ALP order liquidity to all eligible Brokers, and via their Quote in the order book.

## 3.9 Closing Procedure

At the end of the continuous trading phase, ETS will transition all instruments into a closing cross phase. The Market Closing Procedure matches the Opening Procedure (see 3.3) with the replacement of ATO orders by ATC orders. ALP orders will not participate in the closing procedure.

At the end of the closing procedure, ETS will automatically close any remaining open quotes and expire any orders which are flagged as "Good Till Time" (GTT) and due to expire before the end of the current day. Subject to their execution condition, any other unexecuted orders will be carried over to the next trading day.

From the end of the closing cross until the system is shutdown new orders can be entered, amended and cancelled in readiness for the next trading day for that instrument.

# 4 Market Information

To support trading, ETS provides a range of real-time market information to participants and other interested parties, both directly and via major data vendors. Refer to the Market Data Brochure for full information on Equiduct's data products.

## 4.1 Order Book Information

Information on orders and quotes in the system is disseminated. Details include:

- Full unaggregated details (side, price, quantity, and priority timestamp) for every order and quote side in the book are published. Note that only the visible volume of iceberg orders will be included, and that no attribution of market makers will take place. ALP orders are published with the same level of detail, in a segregated feed.
- Status information relating to instruments (e.g. halted, suspended, auction, continuous trading).

## 4.2 VBBO Information

ETS will disseminate the Equiduct VBBO which represents the theoretical execution price of an order entered to trade at the VBBO with the following conditions:

- The prices are calculated on the basis of a theoretical order at one of up to four possible sizes:

1) Retail Market Size (RMS: equivalent to €7,500)
2) Standard Market Size (SMS: where defined by ESMA)
3) Apex Size (PEX: the largest single trade size currently available in the Apex service)
4) Zenith Size (SVB: the largest single trade size currently available in the Zenith service)

- They use the same volume weighted calculation using a "virtual" consolidated order book as used by the system when trading orders at the VBBO.

Unfragmented instruments are excluded from the VBBO market data feed.

Equiduct also publishes the Market-by-Limit feed which provides the (aggregated) top ten price levels from the consolidated order book used in the calculation of the VBBO.

## 4.3 Trades

ETS publishes details of all trades which are concluded using exchange services in real- time. Each trade published to the market will contain details of the trade including trade type, date and time of trade, the instrument in question, the unit price and the traded volume.

# 5 Clearing and Settlement

All trades concluded on ETS are submitted to one or more CCPs for clearing and settlement purposes with the following exceptions:

- Brokers and LPs may pre-agree to bypass CCP clearing when trading at the VBBO. In such cases ETS informs both Broker and LP that a trade has occurred and not been passed to a CCP and the counterparties are responsible for arranging settlement.
- Participants may request that when trades are internalised (i.e. buyer and seller are the same firm), their trades should bypass CCP clearing. Again, the electronic reports of the execution will specify that the trade has not been sent to a CCP and the participant in question is responsible for any necessary settlement.

In both cases described above, the participant(s) must satisfy Equiduct that they are able to arrange settlement without involvement of a CCP before business configuration changes will be applied to permit such behaviour.

# 6 Risk Management Features

The Risk Management functionality of ETS is fully described in the Risk Management Specification. Key features are highlighted here for reference, and the specific parameters for the Equiduct production environment will be detailed in the Market Configuration document.

## 6.1 Order Nominal Value Limits

As required under MiFID II, Equiduct will set a market-wide limit on the maximum permissible order value. It is also possible for market participants and, where applicable, post-trade facilitators to agree a more restrictive value limit to apply to an individual participant, or to an individual participant on specific market segments. The limit(s) will be in EUR, with order value converted from traded currency where necessary.

## 6.2 Order Volume Limits

As required under MiFID II, Equiduct will set a market-wide limit on the maximum permissible order volume. It is also possible for market participants and, where applicable, post-trade facilitators to agree a more restrictive volume limit to apply to an individual participant.

## 6.3 Order Limit Price Collars

As required under MiFID II, Equiduct will reject aggressive limit orders where the limit price is deemed to deviate too far from the current market price. Again, market participants and post-trade facilitators may agree more restrictive collars to apply for an individual participant.

The configured price collar check will further apply to Stop limit orders, with the collar applied to the difference between the Stop price and the Limit price of each order.

## 6.4 Static Price Collars

Outside of continuous trading a static price collar will prevent erroneously priced aggressive limit orders from entering the system. The static price collar will be operational from the start of the closing call phase until the completion of the opening process on the following trading day.
A static threshold will be applied to each tradeable instrument and will use the last trade price as the reference, falling back to the previous close price where no trade has yet occurred.

## 6.5 Offset Order Value Limit

It is possible to set a ceiling to the total value of offset orders that can be allocated to an LP for a particular instrument and side of the market. The limit can be applied either globally for a market participant or at the level of individual market segments. The limit will be in EUR, with order values converted from order currency where necessary.

## 6.6 Gross Traded Value Limits

On request from market participants and, where applicable, post-trade facilitators, Equiduct can configure a market-wide limit on the total (gross) traded value permissible in a single trading day for a given trading participant. Breaching this limit will trigger cancellation of any resting interest and rejection of all new orders until either the end of the trading day, or until an increased limit is agreed and applied by Market Control. The limit will be in EUR, with trade values converted from traded currency where necessary.

## 6.7 Net Traded Value Limits

On request from market participants and, where applicable, post-trade facilitators, Equiduct can configure a market-wide limit on the net traded value (calculated as the difference between the total of buying trades and the total of selling trades) permissible in a single trading day for a given trading participant. Breaching this limit will trigger cancellation of any resting interest and rejection of all new orders until either the end of the trading day, or until an increased limit is agreed and applied by Market Control. The limit will be in EUR, with trade values converted from traded currency where necessary.

## 6.8 Risk Management Trade Drop Copy

One or more specific Risk Management Drop-Copy FIX sessions may be configured. These sessions will receive copies of all trades for the managed participant, and moreover when this session is not connected – or drops intraday – the managed participant is prevented from trading (resting orders are cancelled, new orders are rejected).

## 6.9 Instrument Restrictions

In addition to the existing requirement that market participants are only enabled to trade on a per-segment basis, participants and post-trade facilitators may request additional restrictions to control access on an instrument-by-instrument basis. These restrictions can be initially set-up outside of trading hours, but on request Market Control can intervene intraday to enable or disable trading in specific instruments.

## 6.10 Market Orders

By default, market orders will be rejected when either a nominal value limit or price collar is set for a participant. This behaviour can be configured such that the market orders are allowed even when a value limit or price collar is set for the participant, with order value for market orders calculated using the current market price and the price collar ignored.

## 6.11 Specific Features for LPs in VBBO Services

ETS offers two additional features to support risk management by LPs in the Apex and Zenith trading services.

1) Automatic management of risk limits. When enabled, VBBO trades will result in an automatic update (decrement) of the LP's risk limit. For example, if the current risk limit is set to 10,000 then a trade for 300 will result in an automatic risk limit update to 9,700 which will remain in place until updated by the LP or as a result of a further execution.
2) To allow LPs to manage risk in case of rapid, unexpected movement in market prices, LPs may choose to associate a protection price with their liquidity risk limit. Should the VBBO price update such that a trade against the LP would breach the protection price limit, ETS will automatically set the LP risk limit to zero until either the LP updates the protection price or the VBBO returns to a level within the protection price.

# 7 Glossary of Terms

Apex: A Best Execution trading service for Brokers with retail order flow, where behaviour falls under Equiduct's Apex Fair Usage Policy, allowing Brokers to submit orders for execution at the VBBO.

Apex Liquidity Provision (ALP) Orders: Orders submitted by Apex Liquidity Providers, which are addressable only by Apex Orders.

Apex Orders: Shorthand for orders submitted to the Apex service by Brokers with retail order flow.

Apex Unfragmented Trading: Retail Apex trading in the absence the creation of a VBBO via the virtual consolidated book. Liquidity is provided by way of ALP orders combined with normal liquidity in the Equiduct CLOB.

Backwardation: Where the best bid price of a central limit order book is equal to or greater than the best offer price, the book is said to be in backwardation and cannot be allowing immediate execution (otherwise the best bid would trade against the best offer).

Broker: A Member firm able to submit orders for execution on Equiduct. CCP: Central Counterparty (also referred to as a Clearing House)

Consolidated [Order] Book: The virtual book formed by combining price depth from the Pool of External Markets with the Equiduct order book.

DEA: Direct Electronic Access (also referred to as DMA).

EBBO: The best bid and offer prices from the Consolidated Book.

ETS or Equiduct Trading System: ETS is a proprietary trading system based on a highly scalable, fully-resilient distributed architecture with transparent failover, developed and maintained by Equiduct.

Liquidity Provider (LP): An MM on Equiduct who has further committed to provide liquidity trading at the VBBO to eligible Brokers.

Market Maker (MM): A Market Maker is a Member firm registered in a set of instruments and is required to continuously maintain two-sided prices ("a quote") in the order book for those instruments. MMs may also act as Brokers.

Market Segments: Equiduct groups instruments according to geographical criteria, the trading system and cycle on their primary market in separate "segments"; although all segments will trade according to the Market Model set forth in this document, segments may differ from each other with regard to trading schedules as well as the existence and behaviour of unscheduled intra-day auctions.

Member: A member of Börse Berlin registered to trade on Equiduct.

Minimum Acceptable Quantity (MAQ): Only valid for orders with an IOC execution condition, requests that the order be cancelled unless at least the requested minimum quantity can be traded in one or more immediate fills.

Minimum Quotation Size (MQS): The Minimum Quotation Size is set by Equiduct and is the minimum size which must be offered on each side of the order book by any MM registered in an instrument. See the Equiduct Market Configuration document for details.

Participant: A Member or a DEA client.

Pool of External Markets: For each instrument, Equiduct will select the set of markets (which may be regulated markets, multi-lateral trading facilities or exchanges in non-EEA countries) considered relevant for determination of the VBBO.

Post-Trade Facilitator: A Sponsored Access provider, or other firm (possibly not an Equiduct member) providing clearing services for a market participant.

Primary Market: The most relevant market of a financial instrument in terms of liquidity as defined under MiFID and its Implementing Regulation.

RMS: Retail Market Size, equivalent to a value of €7,500.

SafeOrder: Shorthand for the specific case of a Market Peg Order with zero price offset, so

the limit price tracks the opposite side of the EBBO.

SMS: Standard Market Size set by ESMA based on the Average Value of Transactions as reported by the NCA of the most relevant market in terms of liquidity.

VBBO: The volume weighted average price for a given trade size in the consolidated order book for an instrument. The VBBO represents the price which an order of given volume would receive if optimally split and routed to multiple markets for immediate execution at the advertised price(s); as such it is by definition the Best Price available for a given size across the set of markets under consideration.

Zenith: A Best Execution trading service targeting Brokers with institutional order flow which can be submitted outside of Equiduct's Apex Fair Usage Policy for execution at the VBBO.