Exchange rules – part III.

SINGLE AUCTION AND CONTINUOUS TRADING

in the trading system XETRA® Prague

Obsah

Article 1
Subject of the Provisions

This Part of the Exchange Rules provides for principles of trading in the Xetra® Prague trading system (hereinafter "Xetra®") at the Prague Stock Exchange (hereinafter "PSE"). The Xetra® is an electronic trading system operated by Deutsche Börse AG. This rule is focused on the trading with shares, ETF, investment shares (according to the Czech Act on Management Companies and Investment Funds, hereinafter referred to as "shares"), units of mutual funds, subscription rights and debt securities (bonds issued under the Czech Act on Bonds, debt securities issued under relevant Czech law but different than bonds and all debt securities issued in compliance with the generally binding legal regulations by an issuer with the registered seat in an OECD member country, hereinafter collectively referred to as „debt securities"). Shares and units of mutual funds may be traded in "Continuous trading" and "Single Auction". Debt securities, ETF and subscription rights may be traded in "Single Auction" or - if at least one market maker commits in a valid agreement with PSE to support the liquidity - in "Continuous trading"

Article 2
Basic Principles of the Xetra® Market Model

The Xetra® market model defines the mechanism through which orders are matched and trades concluded under the trading system of PSE. This includes price determination rules, the order of priority in which orders are executed through the Xetra® and the type and scope of information provided to the market during trading sessions.

The following basic trading principles were laid down:

- The Xetra® is both order- and quote-driven system.
- An instrument may be traded in Continuous trading or in Single auction.
- Continuous trading starts with an Opening auction; it may be interrupted by Intraday auctions and ends with Closing auction which can be followed by the phase Trading at Close.
- Orders are executed in accordance with the principle of price and time priority. The exception is Trade at Close where only time priority is used.
- Trading is anonymous, i.e. traders cannot view their counterparties on the trading screen and are not named in the trade confirmation note.
- Xetra® supports trading with orders of all sizes taking account of the specific minimum tradable unit (lot). The specific minimum tradable unit (lot) may be equal to one. The lot size is determined by PSE.
- At any point in time only one price will exist for any instrument.
- The reference price is the price determined most recently for an instrument in Single auction and/or in Continuous trading.
- In order to ensure price continuity, the following aspects must be taken into consideration:
    - Trading is interrupted if the potential price is outside of a predefined price range around the reference price.
    - Market orders are executed at the reference price if the order book contains only executable market orders.
    - If there are active market orders in the order book in Continuous phase and these orders can be matched against incoming limit orders price determination is based on the reference price.
- The probability of market orders being executed during auction trading is increased by the introduction of market order interruptions.
- The validity of an order ends at the latest 360 calendar days after the date it was entered.
- During the pre-trading/post-trading phase the order book is closed.
- Execution confirmations are sent out immediately after a trade has been made.
- The accounting cut-off takes place daily after the post-trading phase.

Article 3
Market participants

3.1 PSE members and User Identifications

Only PSE members are allowed to participate in trading with securities through the Xetra®.

When PSE registers the member in the Xetra®, necessary users ID and their access rights will be setup according to member requirements. PSE will also define securities groups which will be available to each member. Members have the option of adapting the access rights granted to their trader ID groups to their individual organizational needs.

The users of the Xetra® may be classified into the following categories:

3.2 Exchange Trader

Exchange Traders are those physical persons that are authorized to place orders and to conclude dealings on behalf of PSE member on the PSE market and have been reported as Traders to PSE by the member.
A trader may trade on behalf of clients („Agent Trader", Account A), on their own account („Proprietary Trader", Account P) or as a market maker (, Account M). The Account Mcan be used by authorized members only.

3.3 Other users

Users of the system who are not admitted to trade, especially users who are personnel engaged in settlement, operating and supervisory functions, and users of information.

Article 4
Types of Orders

This article defines order types available in Xetra®.

The minimum tradable unit (lot) for Xetra® has been defined as
   a)   equal to one piece for all shares, units of mutual funds and subscription rights, unless stated otherwise below
   b)   equal to nominal value of 1 piece for all debt securities, unless stated otherwise below

A change to an order will result in a new time priority if the limit is changed or if the change has a negative impact on the execution priority of other orders in the order book (e.g., increases in the volume of an existing order). If, however, the volume of an existing order is reduced, the original time priority remains valid.

Timestamp changes	Timestamp remains unchanged
▪ Limit ↑	▪ Volume ↓
▪ Limit ↓	Change of other fields:
▪ Volume ↑	▪ shorter validity ↓
▪ longer validity ↑	▪ Account
▪ Change of Instrument	▪ Internal Ordernumber
▪ Change of Stop Order	▪ Text field
	▪ trading restriction

4.1 Persistent Orders and Non-persistent Orders

In the Xetra® trading traders may choose whether they send their orders as persistent or as non-persistent.

Persistent Orders: Will not be deleted from the order book in exceptional circumstances, i.e. in case of a partially or fully interruption of the Xetra® (=Market Halt).
Non-persistent Orders: Will be deleted from the order book automatically in exceptional circumstances, i.e. in case of a partial or full interruption of the Xetra® (=Market Halt).

a) Default rules

- Agent orders (account "A") are persistent
- All own orders (account types "P" and "M") are non-persistent if the validity of the order is 1 day
- All own orders (account types "P" and "M") with validity longer than 1 day are persistent orders (cannot be changed anymore)

b) Traders have the following options

- Agent orders (Account "A") with the validity 1 day can also be non-persistent
- All own orders (account types "P" and "M") with the validity l day can also be entered as persistent orders

Note: The above may be affected by the selected type of connection

4.2 Market Orders and Limit Orders

- ■   Market Orders: Market orders are unlimited buy or sell orders (orders to be executed at the best available price)

- ■   Limit Orders: Limit orders are limited buy or sell orders to be executed at the set limit price or better.

4.3 Iceberg Orders

This type of order permits the input of large order sizes into the order book during Continuous phase without the market being given insight into the overall volume.

Iceberg orders are characterized by the input of a limit, overall volume and peak size. Both overall volume and peak size must have a round lot format. Peak can be limited by minimum and maximum pieces.

The peak is the part of an iceberg order that is displayed to the market. In Continuous phase, a new peak with a new time stamp is entered into the order book as soon as a previous peak has been fully executed and the order book still contains undisclosed volume.

The last unfilled peak of the overall volume may be smaller than the peak size indicated. Iceberg orders are not marked as such in the order book. They may not be combined with additional trading or execution restrictions. Any increase in peak size or overall volume gives the order a new order number.

Iceberg orders with their overall volumes are displayed during auction trading (auction, Single auction or volatility and market order interruptions) as the order book is open. If an iceberg order is not fully executed during an auction phase, a new order with its overall peak is entered into the order book after the changeover to the continuous phase.

Minimum peak size and minimum overall volume are determined in accordance with the trading segment by PSE.

The usage of Iceberg orders is not allowed in Continuous trading of Debt securties

4.4 Stop Orders

To support trading strategies, two different types of stop orders are available that are activated after a predefined price level (stop limit) is reached

- Stop market order: When the stop limit is reached (or exceeded for stop buy orders or falls below it for stop sell orders), the stop order is automatically placed into the order book as a market order and may be executed immediately.

- Stop limit order: In the case of a stop-limit order, when the stop limit is reached (or exceeded for stop buy orders or if it falls below it for stop loss orders), the stop order is automatically placed into the order book as a limit order and may be executed immediately.

In the case of a stop sell order (called also "stop loss order"), the stop limit must be below the price that was last determined for the respective security. In the case of a stop buy order, the stop limit must exceed the price that was last determined for the respective security. When a stop order is triggered, the order is always given a new time stamp. Any change to a stop order gives it a new time stamp.

4.5 Validity Restrictions

Further restrictions may be imposed to specify the period of time for which an order is valid. The market model provides the following options:

- Good-for-day: This order is valid only for the current trading day.

- Good-till-date: This order is valid only up until a specified date (not later than 360 days after the time the order was entered).

- Good-till-cancelled: This order is valid until it has either been executed or cancelled by the trader or - when the maximum validity period has expired - by the system.

4.6 Execution Restrictions

Market and limit orders in Continuous phase can additionally be defined by the following execution condition:

- Immediate-or-cancel: An immediate-or-cancel order (IOC) is an order that is executed immediately and in full to the furthest extent possible. Unfilled portions of an IOC are automatically deleted by the system.

■   Fill-or-kill: A fill-or-kill order (FOK) is an order that is either immediately fully executed or not at all. If its immediate full execution is not possible, an FOK is not placed into the order book but rejected by the system.

Limit orders in Continuous phase can additionally be defined by the following execution condition:

■   Book-or-Cancel: A book-or-cancel order (BOC) is an order that is placed into the order book to ensure a passive execution. If immediate (and hence aggressive) execution is possible, the order is automatically rejected by the system without entry in the order book. Resting BOC orders are deleted when an auction trading is triggered as any trading volume executed in an auction trading is classified as aggressive trading volume. During auction trading incoming BOC orders are rejected.

4.7 Trading Restrictions

a) Using the following restrictions, orders may be placed for trading in auction trading or in a specific auction only:

■   Opening auction only: This order is valid only for the opening auction.

■   Closing auction only: This order is valid only for the closing auction.

■   Auction only: Valid only for auctions.

b) Trading at Close
If the issue is included in the trading phase "Trading at Close", then it is possible to determine for orders whether they should be active within this phase or not.

4.8 Order Attributes

Xetra® allows traders to specify attributes for their orders. The order attributes are listed in the Table below:

Table 1: Order Attributes for Xetra® Orders

Order attribute	Description / contents	Mandatory
Buy / Sell	Buy / Sell	yes
Exchange	Exchange on which the instrument is traded	yes
Instrument	WKN or ISIN or symbol	yes
Volume	Order volume (nominal value for debt securities)	yes
Limit	Limit (if not specified: market order)	no
Order type	M = Market Order L = Limit Order T = Market-to-Limit Order I = Iceberg Order	for market-to-limit orders and iceberg orders only
Validity restriction	Good-for-day (GFD), Good-till-date (GTD), Good-till-cancelled (GTC), not specified = GFD.	no if not, order is GFD

Execution restriction	Maximum validity: 360 calendar days from entry date (T+359) Immediate-or-Cancel (IOC), Fill-or-Kill (FOK), Book-or-Cancel (BOC), Stop Market Order (STP), Stop Limit Order (STP)	no
Peak size	Peak size for iceberg orders	for iceberg orders
Trading restrictions	Opening Auction only Auction only Closing Auction only Accept Surplus	no
Text field	To be used ad lib.	no
Regulatory ID for HFT	To be used ad lib.	no
Trader's order number	To be used ad lib.	no
Account identification code	A („Agent"), P („Proprietary"), D („Market Maker")	yes
Trader's identification code	Xetra® identification code assigned by the PSE	yes
User identification code	Xetra® identification code assigned by the trader	yes
Xetra®-order number	Xetra® identification assigned by the system	yes
Time stamp	Xetra® identification assigned by the system	yes
TaC flag	Information if the order will be active in the phase Trading at Close.	yes

Table 2: Combination options of order attributes

combinable with	FOK	IOC	BOC	STP	T	I	GFD	GTD	GTC	OA	AO	CA
FOK		-	-	-	x	-	x	-	-	-	-	-
IOC	-		-	-	x	-	x	-	-	-	-	-
BOC	-	-		-	-	-	x	x	x	-	-	-
STP	-	-	-		-	-	x	x	x	-	-	-
T	x	x	-	-		-	x	x	x	-	-	-
I	-	-	-	-	-		x	x	x	-	-	-
GFD	x	x	x	x	x	x		-	-	x	x	x
GTD	-	-	x	x	x	x	-		-	x	x	x
GTC	-	-	x	x	x	x	-	-		x	x	x
OA	-	-	-	-	-	-	x	x	x		-	-
AO	-	-	-	-	-	-	x	x	x	-		-
CA	-	-	-	-	-	-	x	x	x	-	-	

FOK	=	Fill-or-Kill	STP	=	Stop	GFD	=	Good-for-day
IOC	=	Immed.or-Cancelled	OA / CA	=	Opening / Closing Auction	GTD	=	Good-till-date
BOC	=	Book-or-Cancel	AO	=	Auction only	GTC	=	Good-till-cancelled
STP	=	Stop Market/Limit	I	=	Iceberg	OA	=	Opening Auction

4.9   Quotes

Additionally, Xetra® allows PSE members registered in the system as market makers to enter quotes. Quote is the simultaneous entry of buy and sell limit orders into Xetra®. All quotes are valid only for the day on which they are entered into the system.

4.10   Quote Attributes

The quote functionality enables market makers to send their quotes into the system.

Table 3: Quote Attributes for Xetra® Orders

Quote attribute	Descriptions / contents	Mandatory
Exchange	Exchange on which the security is traded	yes
Bid Limit	Limit set by buying side	yes
Ask Limit	Limit set by selling side	yes
Instrument	Security identification code or ISIN or symbol	yes
Bid volume	Volume quoted (nominal value for debt securities) by buying side	yes
Ask Volume	Volume quoted (nominal value for debt securities) by selling side	yes
Account identification code	D („Market Maker")	yes
Trader's identification code	Xetra® identification code assigned by PSE	yes
User identification code	Xetra® identification code assigned by the trader	yes
Xetra®-order number	Xetra® identification assigned by the system	yes
Time stamp	Xetra® identification assigned by the system	yes

Article 5
Trading in Xetra®

5.1 Trading Phases

Trading day starts with the pre-trading phase followed by the main trading phase and ends with the post-trading phase. The system is not available in the time between the post-trading phase and the pre-trading phase. PSE determines the duration and sequence of the concrete phases.

While pre-trading and post-trading rules are the same for all instruments, procedures in the main trading phase may differ. Depending on their liquidity, instruments are traded through different trading procedures.

Figure 1: Trading Model

Pre-trading	Trading	Post-trading
order maintenance	continuous trading single auction	order maintenance
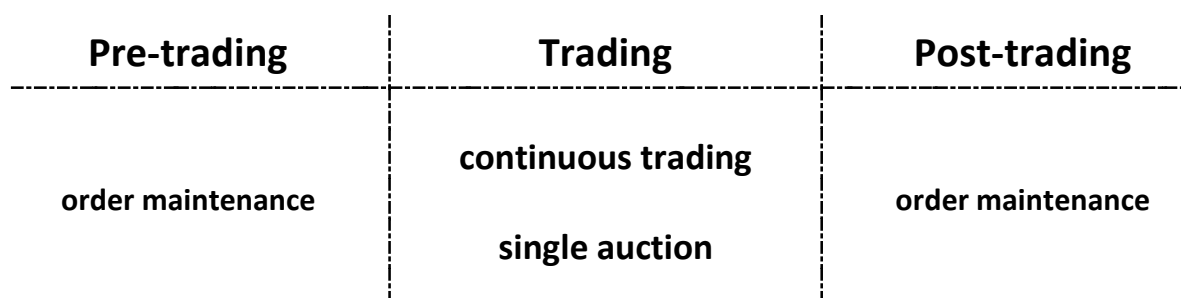
5.1.1 Pre-trading Phase

The pre-trading phase precedes the main trading phase. During this time traders may enter orders and quotes in preparation of actual trading, change or delete their own orders or quotes. Orders entered by traders are confirmed by the exchange.

During the pre-trading phase order book is closed - traders are not allowed to view the market depth. The only information shown, if available, is the closing price determined for the instrument concerned on the preceding trading day.

5.1.2 Main trading Phase

During the main trading phase orders may be traded in accordance with the rules applicable to the type of trading and the trading segment concerned. Depending on the trading segment the market model is either Continuous trading (with an opening and closing auction, alternativelyTrade at Close) or Single auction.

5.1.3 Post-trading Phase

The end of the main trading phase is followed by a post-trading phase in which traders may enter orders and change or delete their own orders that have not been executed. Newly entered orders will be traded in the appropriate trading procedures on the next trading day, subject to any execution or validity restrictions that may apply. The processing of trades c oncluded during the given trading day also takes place during the post-trading phase.

5.2 Trading Procedures

The 'Xetra® Market Model' supports the trading models:

- Continuous trading or Single auction for shares and units of mutual funds,

- Single auction for subscription rights, ETF and debt securities, Continuous trading for subscription rights and debt securities with the support of a Market Maker(s) only.

5.2.1 Continuous Trading

Figure 2: Sequence of Trading Procedures

Random end
FIX   Price determination
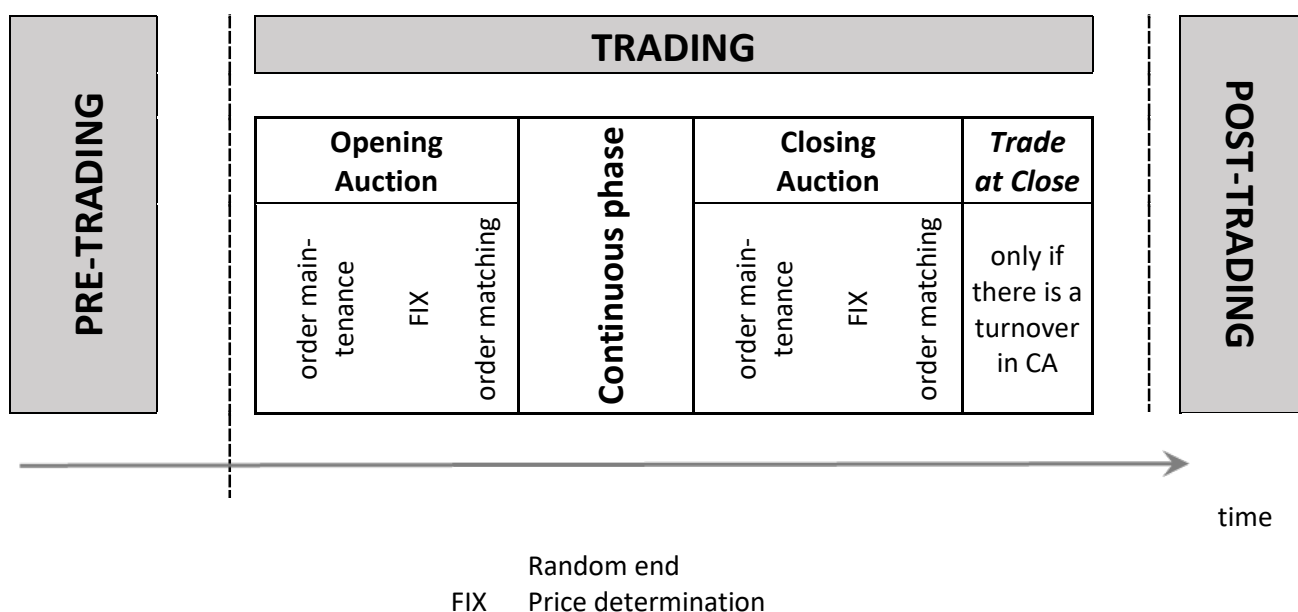
1) **Opening Auction**

The beginning of Continuous phase is preceded by an opening auction consisting of three phases :

- call phase,
- price determination phase,

All orders remaining from the preceding day and still valid or entered on the given trading day, take part in this auction unless their execution is specifically restricted to the closing auction ("closing auction only").

Figure 3: The Opening Auction
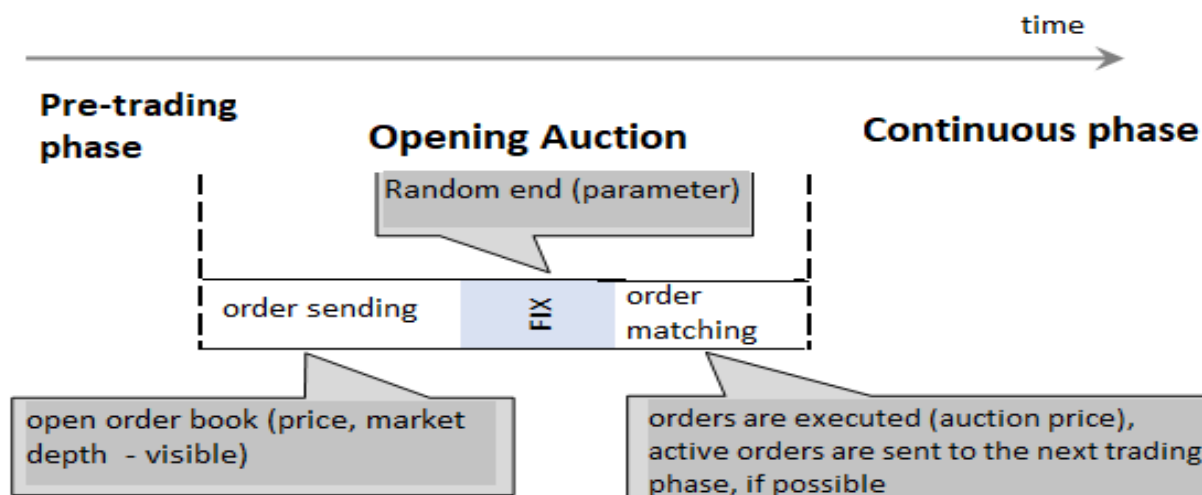
Call Phase

An auction schedule informs traders of the periods when specific securities are called. During this phase, the trader may enter new orders and quotes and change or delete previously placed orders.

In the call phase, when the order book is open, the depth of the market is displayed according to the connectivity type of the member. If there are orders that can be matched, an indicative auction price is displayed. This is the price that would be set for the auction if the price determination phase were to end at this point of time.

The duration of the call phase may vary according to the trading segment. In order to avoid price manipulation, the call phase is ended at a random point in time after a certain minimum period.

Price Determination Phase

Price determination takes only a few seconds. The auction price is determined on the basis of the order book situation at the end of the call phase according to the principle of executing as many orders as possible.

The auction price is the price at which the largest volume of orders can be executed, leaving the smallest possible surplus for each limit in the order book. The time priority rule ensures that of the orders with an auction price limit, not more than one order is partially executed.

If existing orders cannot be matched, it is not possible to determine an auction price. In this case, the best bid and/or ask limit(s) is/are displayed.

As soon as the auction price has been determined, the traders receive an execution confirmation showing the number of trades closed along with the execution price, time, and volume.

2) __Continuous phase__

Continuous phase starts after the opening auction ends. In Continuous phase, the order book is opened with limits and aggregate order volumes per limit being displayed. Any new incoming limit or market order and every new quote is examined immediately to determine whether it can be matched against orders on the opposite side of the market. Orders are executed according to price and time priority.

An order may be fully executed or partially executed (both in one or several steps), or not at all.

As orders are sorted by price and time, buy orders with a higher limit take precedence over buy orders with lower limits. Conversely, sell orders with a lower limit take precedence over sell orders with higher limits. Time is used as the second criterion when several orders have the same limit. In this case, orders that were entered earlier take precedence. Market orders take precedence in the order book over limit orders. The rule of time priority also applies to market orders.

When two orders have been matched, the trading parties receive execution confirmations in a procedure analogous to the one followed in the opening auction.

3) __Closing Auction__

Continuous phase is followed by a closing auction consisting of three phases (see Figure 4):
   - call phase,
   - price determination phase,

Rules for order management in these phases is the same like order management in the Opening Auction.

Figure 4: The Closing Auction
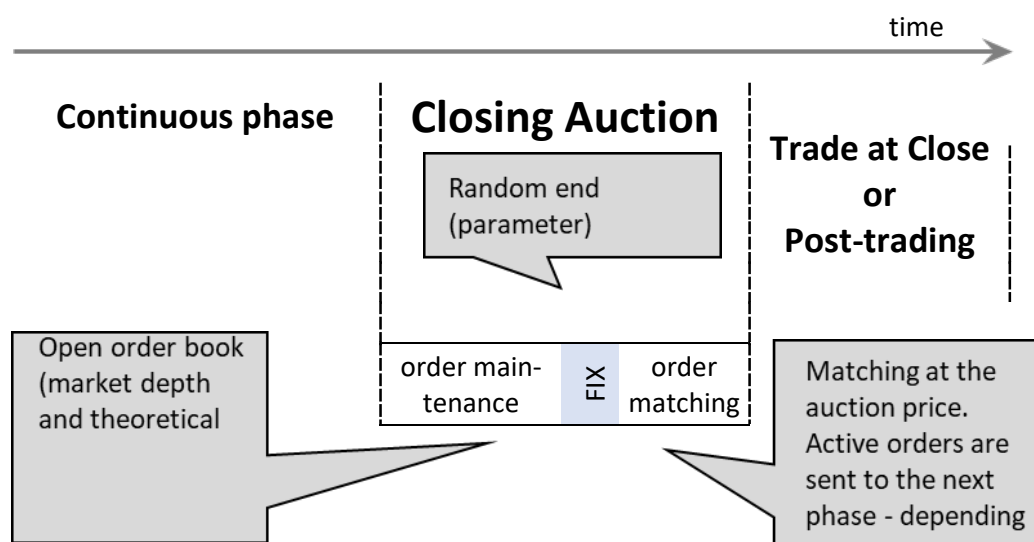
In the closing auction, orders of all sizes recorded in the order book are matched automatically. This covers orders and quotes carried forward from Continuous phase as well as orders entered into the order book only for the closing auction.

If active orders can be matched, the auction price is set as the closing price and trades are concluded. If the instument is also intended for Trading at Close, this phase is started.

If the orders entered cannot be matched and executed, no auction price is determined. In this case the best bid and/or ask limit(s) is/are displayed.
Unfilled or only partially executed market orders, market-to-limit orders and limit orders are transferred to the next trading day according to their validity.

4) <u>Trading at Close</u>

Trading at the closing price will be started only for those instruments which have some turnover in Closing Auction of the given trading day.
- Trades are concluded continuously, supply / demand is visible**.**
- During this phase order maintenace is possible.
- Quotes are not used.
- The price was fixed in Closing Auction.
-The price priority is not used. only the time priority will be used.
- The phase has a fixed duration, no randomization is used here.

5.2.2 Single Auction
The auction consists of three phases:
> - call phase,
> - price determination phase,

In contrast to the opening auction, orders not executed remain on the order book until the next auction is held. All orders that are executable are executed. An auction schedule informs traders of the periods when specific securities are called.

Call Phase

 An auction schedule informs the traders of the periods when specific securities are called out. During this phase, the trader may enter new orders and change or delete previously placed own orders.

During the call phase of the the trading procedure Single auction the order book is open. The entire depth of the market is displayed. If there are orders that can be matched, an indicative auction price is displayed. This is the price that would be set for the auction if the price determination phase were to end at this point of time.

The duration of the call phase may vary according to the number and liquidity of the securities in a trading segment. In order to avoid price manipulation, the call phase is ended at a random point in time after a certain minimum period.

Price Determination Phase

Price determination takes only a few seconds. The auction price is determined on the basis of the order book situation at the end of the call phase according to the principle of executing as many orders as possible.

The auction price is the price at which the largest volume of orders can be executed, leaving the smallest possible surplus for each limit in the order book. The time priority rule ensures that of the orders with an auction price limit, not more than one order is partially executed.

If existing orders cannot be matched, it is not possible to determine an auction price. In this case, the best bid and/or ask limit(s) is/are displayed.

As soon as the auction price has been determined, the traders receive an execution confirmation showing the number of trades closed along with the execution price, time, and volume.

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Article 6
Safeguards in the Market Model

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The electronic securities trading system Xetra® includes two important safety mechanisms – <u>volatility interruption</u> and <u>market order interruption</u> – which contribute significantly to the prevention of price jumps and help to increase price continuity. In addition, these mechanisms improve the probability of unlimited orders being executed.

- Volatility interruption
  - a) in Single auctions;
  - b) in Continuous trading;
- Market order interruption during any auction trading (but not in auctions which result from a volatility interruption).

Traders are informed by the system automatically if a volatility interruption or a market order irruption occurs.
The volatility interruption can be triggered in two ways (see Figure 5):

Figure 5: Dynamic and static price corridors
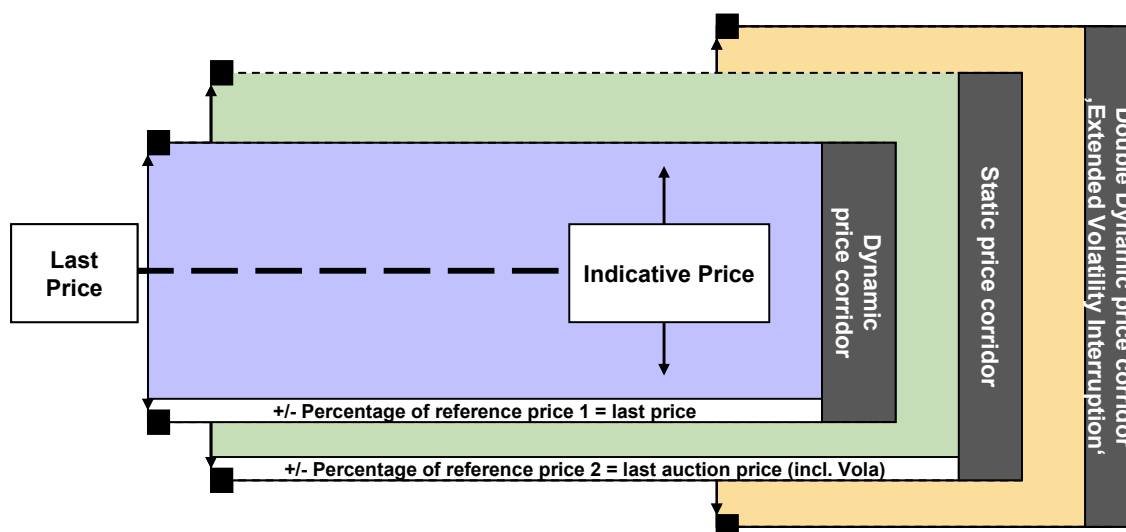
- If the indicative execution price is outside the defined static price corridor.
  The static price corridor defines the maximum deviation – in absolute numbers and/or as a percentage – from the last price determined in the most recent auction (Single auction or opening auction or intraday auction or closing auction) held during the current trading session for the given security. If such price has not been determined, the most recent price determined on one of the previous trading days is used instead.

■ If the indicative execution price is outside the defined dynamic price corridor.

The dynamic price corridor defines the maximum deviation – in absolute numbers and/or as a percentage – from the most recent price determined for the given security (in Single auction or in Continuous trading.)

The price corridors are set individually for each security – symmetrically on positive and negative side of the price. PSE determines all parameters of volatility interruption.

Each of these safety mechanisms can only be triggered once per price determination phase, i.e., there can be only one volatility interruption and one market order interruption in one auction. If a market order interruption and a volatility interruption occur simultaneously, the market order interruption has priority.

If the indicative auction price remains outside one of the two price corridors after a volatility interruption, price determination is still carried out. The same applies to market order interruptions for market orders that can be executed only in part or not at all.

6.1 Volatility Interruption in auctions

A volatility interruption is triggered if the indicative auction price at the end of the auction call phase is outside the dynamic and/or static price corridors (see Figure 6).

A volatility interruption results in a limited prolongation of the call phase during which traders can enter new orders and quotes or modify or cancel orders that are already in the order book. After expiration of the prolongation period, the call phase also ends at a random point in time.

Figure 6: Volatility interruption during an auction
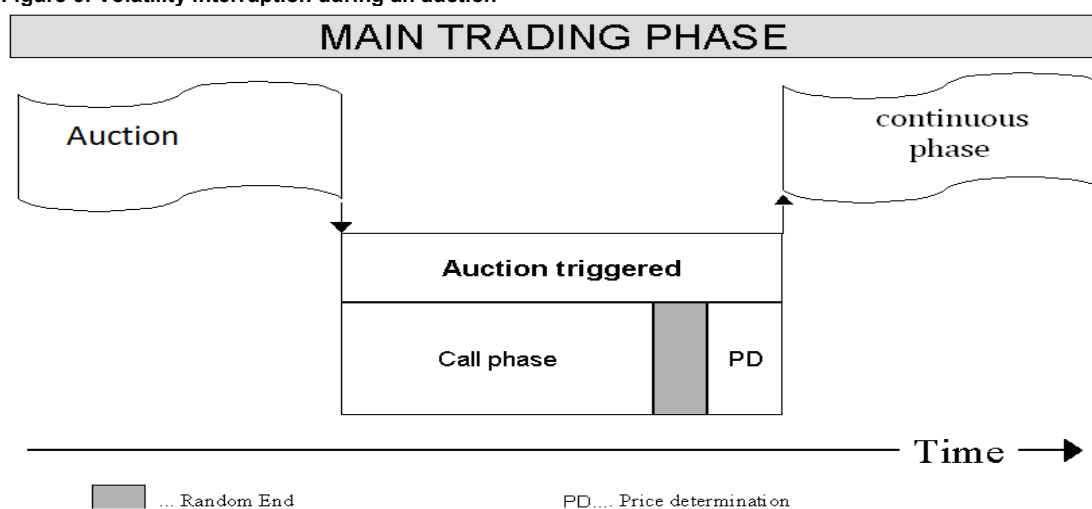
6.2 Volatility Interruption in Continuous phase

A volatility interruption causes a change of trading procedure - Continuous phase is interrupted by the auction, where only orders which were intended for Continuous phase are considered. The auction consists of the call phase and price determination phase. After a minimum period of duration, the call phase ends at a random point in time. After the price determination or after expiration of the auction time period (if it is not possible to determine a price) Continuous phase follows (see Figure 7).

Volatility interruption cannot be caused by FOK – these orders are rejected by the system in this case.

Figure 7: Volatility interruption in Continuous phase
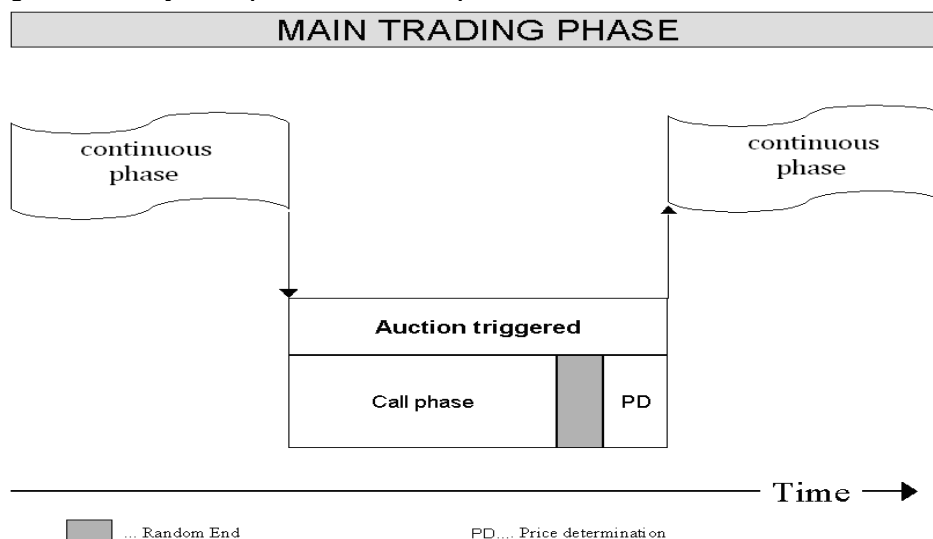
6.3 Extended Volatility Interruption

The extended volatility interruption follows the volatility interruptions and is triggered if the indicative price was to be determined outside double the extent of the dynamic price corridor.

The price is not determined automatically after the call phase in the subsequent volatility interruption. The Exchange Day Manager checks with the PSE member if the order that triggered the extended volatility interruption was correct. If the order is confirmed by the PSE member, trading is activated again by the Exchange Day Manager and the trade is concluded.

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Article 7
Rules of Price Determination

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7.1 Auction Price Determination

The auction price is determined on the basis of the order book situation at the end of the call phase according to the principle of executing as many orders as possible. At the same time orders are ranked by price and time priority.

If more than one limit is possible for a maximum volume of executable orders and a minimum order surplus in determining the auction price, the next rules are used:

■ If the surplus is on the buy side for all limits (bid surplus), the auction price is fixed according to the highest limit;

■ If the surplus is on the sell side for all limits (ask surplus), the auction price is fixed according to the lowest limit.

If there is a bid surplus for some limits and ask surplus for others or if there is no surplus for any of the limits, the reference price is used as an additional criterion:

- o If the reference price is closer to the highest limit, the auction price is determined according to the highest limit;
- o If the reference price is closer to the lowest limit, the auction price is determined according to the lowest limit;
- o If the reference price is exactly in the middle of the highest and the lowest limit the auction price is determined according to the highest limit.

If only market orders can be matched and executed, they are executed at the reference price.

If the orders cannot be matched, an auction price cannot be determined. In this case, the best bid and/or ask limit(s) (if available) is/are displayed.

Figure 9: Auction price determination
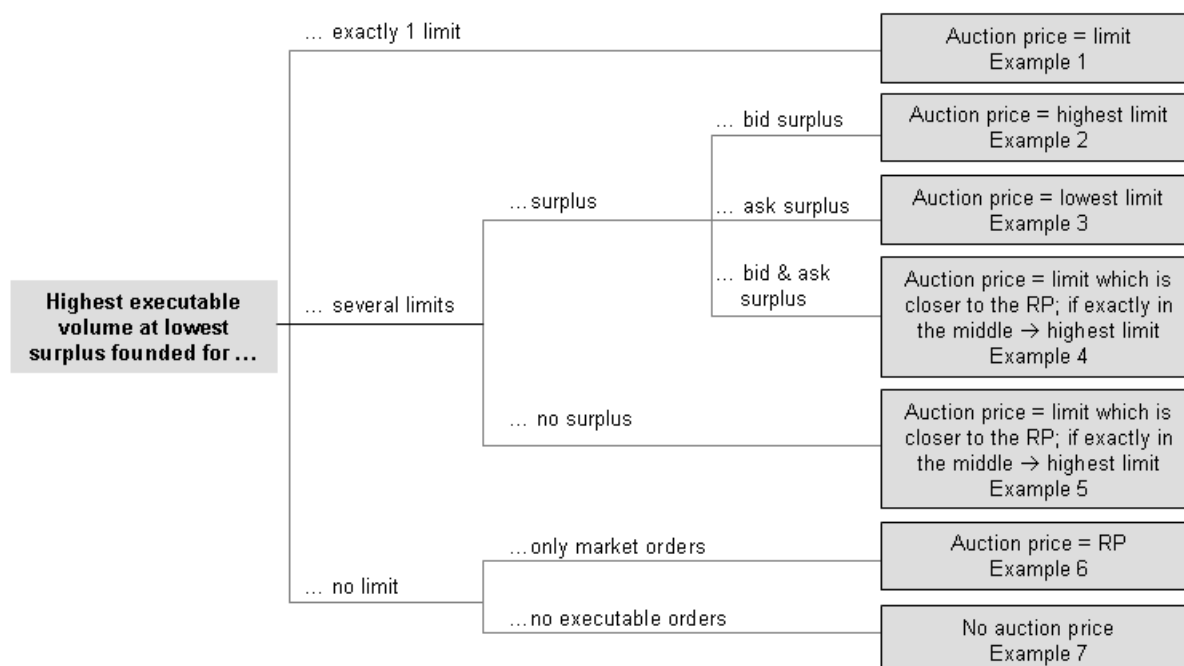
7.2 Examples of Matching in Auctions

The following examples of price determination for specific order book situations will illustrate the basic rules of matching in auctions.

■   Example 1:   There is exactly one limit at which a maximum order volume can be executed at a minimum order surplus.

Buy	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume	**Sell**
Limit	200	200		202	500	700		
Limit	200	400		201	300	700		
Limit	300	700		200		700	100	Limit
		700	100	198		600	200	Limit
		700	300	197		400	400	Limit

The auction price is fixed at € 200 in line with this limit.

■   Example 2:   Several limits would be possible and there is a bid surplus.

Buy	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume	**Sell**
Limit	400	400		202	100	500		
Limit	200	600	100	201		500		
		600	100	199		500	300	Limit
		600	400	198		200	200	Limit

The auction price is fixed at € 201 in line with the limit.

■   Example 3:   Several limits would be possible and there is a ask surplus.

Buy	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume	**Sell**
Limit	300	300		202	300	600		
Limit	200	500		201	100	600		
		500		199	100	600	400	Limit
		500	300	198		200	200	Limit

The auction price is fixed at € 199, corresponding to the lowest limit.

■   Example 4:   Several limits would be possible and there are surplus orders on both, the bid and the ask side.

Buy	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume	Sell
Market	100	100		Market	100	200		
		100		202	100	200	100	Limit
Limit	100	200	100	199		100		
		200	100	Market		100	100	Market

The auction price is determined to the limit which is closer to the reference price. If the reference price is exactly in the middle of the highest and the lowest limit the auction price is determined according to the highest limit.

If the reference price = € 200, then the auction price = € 199.
If the reference price = € 201, then the auction price = € 202.
If the reference price = € 200.50, then the auction price = € 202.

■ Example 5: Several limits would be possible and there is no surplus.

Buy	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume	Sell
Limit	300	300		202	200	500		
Limit	200	500		201		500		
		500		199		500	300	Limit
		500	300	198		200	200	Limit

The auction price is determined to the limit which is closer to the reference price. If the reference price is exactly in the middle of the highest and the lowest limit the auction price is determined according to the highest limit.

If the reference price = € 205, then the auction price = € 201.
If the reference price = € 200, then the auction price = € 201.
If the reference price = € 197, then the auction price = € 199.

■ Example 6: The order book contains executable market orders only.

Buy	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume	Sell
Market	900	900	100	Market		800		
		900	100	Market		800	800	Market

The auction price is equal to the reference price.

Buy							Sell
	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume
				201	80	80	80	Limit
Limit	80	80	80	200			

No auction price can be determined. In this case, the highest bid limit (€ 200) and the lowest ask limit (€ 201) are disseminated.

■   Example 8: Partial execution of an order in an opening auction.

Buy							Sell
	Volume	Cumulative Volume	Surplus	Limit	Surplus	Cumulative Volume	Volume
9:00 Limit	300	600	200	200		400	400	Limit
9:01 Limit	300						

As the bid side contains two executable orders limited at the auction price.Time priority decides which of the two is fully executed and which is partially executed. In this case, the order with the time stamp 9:00 is executed fully and the order with the time stamp 9:01 is executed partially (100 shares).
The auction price = € 200.

200 ares from the partial execution is transferred into Continuous phase (if it is not limited to auctions only).

7.3 Price Determination in Continuous phase

Every new incoming order is immediately checked against the orders on the opposite side of the order book to see if it can be executed. Once entered into the order book, orders are executed according to price/time priority.

An order may be fully executed or partially executed (both in one or several steps), or not at all.

In addition to price and time priority, prices are determined in Continuous phase according to the following rules:

■   <u>Rule No. 1:</u>   If an order is placed while the order book contains only limit orders on the opposite side, the price is determined by the highest buy limit/lowest sell limit in the order book.

■   <u>Rule No. 2:</u>   If an order placed while the order book contains only market orders on the opposite side, this order is executed at the reference price.

■   <u>Rule No. 3:</u>   If an order is placed while the order book contains market orders and limit orders on the opposite side, the incoming order is matched against the orders in the order book and executed according to price/time priority.
      • if the sell order is placed, the transaction is executed at the reference price and/or the highest limit of the executable buy limit orders;

- if the buy order is placed, the transaction is executed at the reference price and/or the lowest limit of the executable sell limit orders.

The reference price is used as the virtual price for market orders. On this basis, orders are generally executed at the reference price, unless this would run counter to price/time priority.

The diagram below illustrates the effects of the rules of price determination on potential order book situations in Continuous phase:

First diagram (MO entered)

Order entered — MO entered

- only MO in order book → Price = refence price / Example 1
- only LO in order book
  - only buy LO in order book → Price = highest buylimit / Example 2
  - only sell LO in order book → Price = lowest sell limit / Example 3
- only MO + LO in order book
  - only buy MO + LO in order book
    - RP >= highest buylimit → Price = reference price / Example 4
    - RP < highest buy limit → Price = highest buylimit / Example 5
  - only sell MO + LO in order book
    - RP <= lowest sell limit → Price = reference price / Example 6
    - RP > lowest sell limit → Price = lowest sell limit - Example 7
- no orders in order book → No price / Example 8

Second diagram (LO entered)

Order entered — LO entered

- only MO in order book
  - only buy MO in order book
    - RP >= lowest sell limit → Price = reference price / Example 9
    - RP < lowest sell limit → Price = lowest sell limit - Example 10
  - only sell MO in order book
    - RP <= highest buylimit → Price = reference price / Example 11
    - RP > highest buy limit → Price = highest buylimit / Example 12
- only LO in order book
  - highest BL >= lowest SL
    - only buy LO in order book → Price = highest buylimit / Example 13
    - only sell LO in order book → Price = lowest sell limit - Example 14
  - highest BL < lowest SL → No price / Example 15
- only MO + LO in order book
  - only buy MO + LO in order book
    - RP >= highest BL and lowest SL → Price = reference price / Example 16
    - highest BL >= lowest SL and > RP → Price = highest buylimit / Example 17
    - lowest SL > highest BL and RP → Price = lowest sell limit - Example 18
  - only sell MO + LO in order book
    - RP <= highest BL and lowest SL → Price = reference price / Example 19
    - highest BL <= lowest SL and < RP → Price = highest buylimit / Example 20
    - lowest SL < highest BL and RP → Price = lowest sell limit - Example 21
- No order in order book → No price / Example 22

MO = Market Order
LO = Limit Order
BL = Buy limit
SL = Sell limit
RP = Reference price

7.4 Examples of Matching in Continuous phase

The following examples of price determination in specific order book situations will illustrate the basic rules of matching in Continuous phase.

■   Example 1:   A **market** order is placed while the order book contains **only market** orders on the opposite side.

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			

Order entered:
Sell - market order,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			

The reference price is € 200.
The two market orders are executed at the reference price of € 200.

■   Example 2:   A **market** order is placed while the order book contains **only limit** orders on the opposite side.

Sell					Buy
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	200			

Order entered:
Sell - market order,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	200			

The two orders are executed at the highest buy limit of € 200.

■   Example 3:   A **market** order is placed while the order book contains **only limit** orders on the opposite side.

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			200	6000	9:01

Order entered:
buy market order,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			200	6000	9:01

The two orders are executed at the lowest sell limit of € 200.

■   Example 4:   A **market** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Buy			Sell		
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	195			

Order entered:

sell market order,

volume 6000 shares

Buy			Sell		
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	195			

The reference price is € 200. It is equal to or higher than the highest buy limit. The incoming sell market order is executed against the buy market order in the order book at the reference price of € 200 (Principle No. 1).

■ Example 5: A **market** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Buy			Sell		
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	202			

Order entered:

sell market order,

volume 6000 shares

Buy			Sell		
Time	Volume	Limit	Limit	Volume	Time
9:01	~~6000~~	Market			
9:02	1000	202			

The reference price is € 200. It is lower than the highest buy limit. The incoming sell market order is executed against the buy market order in the order book at the highest buy limit of € 202 (Principle No. 2).

■ Example 6: A **market** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Order entered:

buy market order,

volume 6000 shares

Buy			Sell		
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01
			202	1000	9:02

Buy			Sell		
Time	Volume	Limit	Limit	Volume	Time
			Market	~~6000~~	9:01
			202	1000	9:02

The reference price is € 200. It is equal to or lower than the lowest sell limit. The incoming buy market order is executed against the sell market order in the order book and at the reference price of € 200 (Principle No. 1).

■ Example 7: A **market** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Order entered:
buy market order,
volume 6000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01
			202	1000	9:02

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	~~6000~~	9:01
			202	1000	9:02

The reference price is € 203. It is higher than the lowest sell limit. The incoming buy market order is executed against the sell market order in the order book at the lowest sell limit of € 202 (Principle 2).

■ Example 8: A **market** order is placed and there are **no orders** on the opposite side.

Order entered:
buy market order,
volume 6000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
10:01	6000	Marlet			

The incoming buy market order is entered into the order book; no price is determined, and no orders are executed.

■ Example 9: A **limit** order is placed while the order book contains **only market** orders on the opposite side.

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	~~6000~~	Market			

Order entered:
sell order, limit € 195,
volume 6000 shares

The reference price is € 200. It is equal to or higher than the lowest sell limit. The two orders are executed at the reference price of € 200 (Principle No. 1).

■ Example 10: A **limit** order is placed while the order book contains **only market** orders on the opposite side.

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	~~6000~~	Market			

Order entered:
sell order, limit € 203,
volume 6000 shares

The reference price is € 200. It is lower than the lowest sell limit. The two orders are executed at the lowest sell limit of € 203 (Principle No. 2).

- ■ Example 11:   A **limit** order is placed while the order book contains **only market** orders on the opposite side.

Order entered:
buy order, limit € 203,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01

The reference price is € 200. It is equal to or lower than the highest buy limit. The two orders are executed at the reference price of € 200 (Principle No. 1).

- ■ Example 12:   A **limit** order is placed while the order book contains **only market** orders on the opposite side.

Order entered:
buy order, limit € 199,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01

The reference price is € 200. It is higher than the highest buy limit. The two orders are executed at the highest buy limit of € 199 (Principle No. 2).

- ■ Example 13:   A **limit** order is placed while the order book contains **only limit** orders on the opposite side.

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:33	6000	199			

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:33	6000	199			

Order entered:
sell order, limit € 198,
volume 6000 shares

The highest buy limit is equal to or higher than the lowest sell limit. The two orders are executed at the highest buy limit of € 199.

- ■ Example 14:   A **limit** order is placed while the order book contains **only limit** orders on the opposite side.

Order entered:
buy order, limit € 200,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			199	6000	9:33

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
			199	6000	9:33

The highest buy limit is equal to or higher than the lowest sell limit. The two orders are executed at the lowest sell limit of € 199.

■ Example 15: A **limit** order is placed while the order book contains **only limit** orders on the opposite side.

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	199			

Order entered:
sell order, limit € 200,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	199	200	6000	10:01

The highest buy limit is lower than the lowest sell limit. The incoming sell order is entered into the order book; no price is determined, and no orders are executed.

■ Example 16: A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	196			

Order entered:
sell order, limit € 195,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			

-

■ Example 18: A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	202			

Order entered:
sell order, limit € 203,
volume 6000 shares

Buy					Sell
Time	Volume	Limit	Limit	Volume	Time
9:01	~~6000~~	Market			
9:02	1000	202			

The reference price is € 200. The lowest sell limit is higher than the highest buy limit and higher than the reference price. The incoming sell order is executed against the buy market order in the order book at the lowest sell limit of € 203 (Principle No. 2).

■ Example 19: A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Order entered:

buy order, limit € 203, volume 6000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01
			202	1000	9:02

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	~~6000~~	9:01
			202	1000	9:02

The reference price is € 200. It is equal to or lower than the highest buy limit and the lowest sell limit. The incoming buy order is executed against the sell market order in the order book at the reference price of € 200 (Principle No. 1).

■ Example 20: A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Order entered:

buy order, limit € 200, volume 6000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01
			202	1000	9:02

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	~~6000~~	9:01
			202	1000	9:02

The reference price is € 201. The highest buy limit is equal to or lower than the lowest sell limit and lower than the reference price. The incoming buy order is executed against the sell market order in the order book at the highest buy limit of € 200 (Principle No. 2).

■ Example 21: A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Order entered:

buy order, limit € 203, volume 6000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	6000	9:01
			199	1000	9:02

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
			Market	~~6000~~	9:01
			199	1000	9:02

The reference price is € 200. The lowest sell limit is lower than the highest buy limit and lower than the reference price. The incoming buy order is executed against the sell market order in the order book at the next sell limit of € 199 (Principle No. 2).

■ Example 22: A **limit** order is placed and there are **no orders** on the opposite side.

Order entered:
buy order, limit € 200,
volume 6000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
10:01	6000	200			

The incoming buy order is entered into the order book; no price is determined, and no orders are executed.

Other examples:

Partial execution of a market order. A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	202			

Order entered:
sell order, limit € 203,
volume 1000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	5000	Market			
9:02	1000	202			

The reference price is € 200. The lowest sell limit is higher than the highest buy limit and higher than the reference price. The incoming sell order can be matched only with a part of the buy market order in the order book. The incoming sell order is executed in full, the buy market in the order book in part, at the lowest sell limit of € 203 (Principle No. 2).

Triggering of a **volatility interruption**. A **limit** order is placed while the order book contains **market** orders **and limit** orders on the opposite side.

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	202			

Order entered:
sell order, limit € 220,
volume 1000 shares

Buy				Sell	
Time	Volume	Limit	Limit	Volume	Time
9:01	6000	Market			
9:02	1000	202			

The reference price is € 200, and the price corridor is +/- 2% on either side of the most recently determined price. The limit of the incoming sell order is outside the pre-defined price corridor; the order is not executed. The sell order is entered into the order book, Continuous phase is interrupted, and an auction is started.

Article 8
Effectiveness

This Exchange Rule was approved by the Exchange Chamber and takes effect from April 1, 2022..

Glossary

Term	Explanation
Account type	There are three types of accounts for trading: agent (A), proprietary (P), liquidity provider (D)
Accounting cut-off	Point of time at which the date of the current trading day is changed over to the date of the next trading day.
Ask limit	Limit on the sell (i.e. ask) side.
Auction price	The auction price is the price of an instrument at which orders in the given auction are executed.
Auction trading	Auction trading is a trading procedure defined in the market model in which all incoming orders for securities are gathered and taken into consideration, thus concentrating liquidity. Price determination takes place in the concrete time according to the auction schedule set by PSE. The method applied for determining prices follows the principle of executing as many orders as possible. An auction may consist of up to two phases: call phase, price determination phase. Xetra® differentiates: Single auction, opening auction, closing auction, intraday auction.
START market	START market is an unregulated market enabling interested parties from among the members of PSE and acting in compliance with conditions set out in the exchange rules to trade with instruments listed on this market.
Bid limit	Limit on the buy (i.e. bid) side.
Book-or-cancel order (BOC)	A book-or-cancel order (BOC) is an order, which is placed as resting liquidity in the order book in order to ensure passive execution. If this immediate (and hence aggressive) execution is possible (full or partial), the order is automatically rejected by Xetra® without entry in the order book.
Call phase	This is the opening phase of an auction that is followed by the price determination phase or, if applicable, the order book balancing phase. During this phase traders may enter, change or delete their orders and quotes.
Closing auction	The closing auction takes place in the trading model Continuous trading at the end of the trading day after Continuous phase ends.
Closing auction only order	Trading restriction specifying that an order should only be applied for the closing auction.
Continuous trading	Trading model comprising of auctions and Continuous phase.
Continuous phase	Trading procedure defined in the market model in which incoming orders are immediately matched against orders on the other side of the order book to determine whether or not they can be executed. Continuous phase starts after the opening auction ends.
Dynamic price corridor	Price corridor is setup as the maximum deviation – in absolute numbers and/or as a percentage – from the most recent price determined for the given security (in Single auction or in Continuous trading.) If the indicative execution price of an order is outside of the dynamic price corridor, a volatility interruption is triggered (see also static price corridor).
Exchange Day Manager	Authorized employee of the PSE Market operations team
Execution confirmation	Electronic certificate which is sent to traders immediately when trade is con-

	cluded - showing in particular the execution price, time and volume.
Fill-or-kill order (FOK)	A fill-or-kill order is an order that is either executed immediately and fully or not at all. If immediate fully execution is not possible, FOK order is not entered into the order book and but rejected by the system.
Good-for-day order (GFD)	Validity restriction - this type or order is valid only for the current trading day.
Good-till-cancelled order (GTC)	Validity restriction - this order type is valid until it has either been executed or cancelled by the trader or – when the maximum validity period has expired – by the system.
Good-till-date order (GTD)	Validity restriction - this order type is valid only up until a specified date (not later than 360 days after the time the order was entered).
Iceberg order	An order that is entered into the order book specifiying the limit, overall volume and peak size. In Continuous phase, market participants may only view the peak size.
Immediate-or-cancel order (IOC)	An immediate-or-cancel order is an order that is immediately and fully executed to the furthest extent possible. Unfilled portion of an IOC order is not entered into the order book but deleted by the system.
Indicative price	The auction price that would have been determined if the auction were to close at this point of time.
Indicative volume	The volume of trades that would have been executed in an auction if the auction were to end at this point of time.
Instrument	Security that is tradable through the Xetra® system.
Investment shares	Shares of an investment company with variable capital (SICAV) other than founders' shares. Investment shares carry a right for redemption based on a request of the owner. After redemption the investment shares cease to exist. See the Czech Act on Management Companies and Investment Funds
ISIN	12-digit international security identification code (International Securities Identification Number) which all instrument must have.
Limit order	Limit order is buy or sell order including the set limit price. The order can be executed at the limit price or better.
Market maker	The member who is by PSE authorised to quote and concluded The Market Maker agreement.
Market order	Market order is an unlimited buy or sell order without any price. The order can be executed at the next price that is determined.
Matching	Orders execution according to the rules.
Matching rules	Rules for price determination in the Xetra®.
Opening auction	The opening auction takes place in the trading model Continuous trading at the beginning of the trading session.
Opening auction only order	Trading restriction specifying that an order should only be applied for the opening auction.
Order book	All orders in Xetra® considering their attributes.
Partial execution	Only part of the volume of an order or quote is executed.
Peak size	The part of an iceberg order that is displayed in the order book to the market during Continuous phase.
Price determination	The phase in an auction. The auction price is determined on the basis of the order book situation at the end of the call phase according to the principle of executing as many orders as possible.
Quote	The simultaneous entry of buy and sell limit orders into Xetra®.

Reference price	The last price determined in an auction or in Continuous phase for a security.
Static price corridor	Price corridor is setup as the maximum deviation – in absolute numbers and/or as a percentage – from the last price determined in an auction held during the current trading day. If the indicative execution price is outside of this price corridor, a volatility interruption is triggered.
Stop limit order	When the stop limit is reached (or exceeded for stop buy orders or if it falls below it for stop loss orders), the stop order is automatically placed in the order book as a limit order and may be executed immediately.
Stop market order	When the stop limit is reached (or exceeded for stop buy orders or falls below it for stop sell orders), the stop order is automatically placed in the order book as a market order and may be executed immediately.
Surplus	A surplus is the situation when, at the end of the call phase in an auction, demand of the given instrument exceeds supply or supply exceeds demand
Trading schedule	A pre-defined sequence of trading phases during one trading day set by PSE.
Trader	A trader is a person who has an access to trading on Xetra® on behalf of the PSE member.
Trading model	The sequence and continuity of concrete types and phases of trading in Xetra®. Xetra® supports the following trading models: - Continuous trading consisting of opening auction, Continuous phase (which can be interrupted by one or several intraday auction(s)) and a closing auction; - Single auction
Volatility interruption	A safety mechanism to improve price continuity during auctions and Continuous phase. It is triggered if the indicative execution price of an order during Continuous phase or at the end of call phase of an auction is outside of the dynamic price corridor and/or the static price corridor.
Xetra®	Automatic trading system Xetra® Prague.
LEI	A Legal Entity Identifier (LEI) is a unique 20-character string that conforms to the ISO 17442 standard, "Financial Services - Legal Entity Identifier (LEI)." LEI corresponds to a legal entity, that is, a legal person or structure that is organized under the laws of any jurisdiction (excluding natural persons).