

## Xetra® Release 9.0

### Market Model Structured Products

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## 1 Introduction

Xetra is the pan-European electronic trading system of Deutsche Börse AG for cash market trading in equities and a variety of other instruments including exchange traded funds (ETFs), certificates, warrants bonds and subscription rights. It has been introduced in November 1997 in order to create a transparent and efficient way of automated trading at the Frankfurter Wertpapierbörse (FWB; Frankfurt Stock Exchange). Since its introduction Xetra has been enhanced through further releases adding functions and capabilities according to market needs.

With Xetra Release 9.0 a new market model comprising the two trading models<sup>1</sup> 'Continuous Auction with Issuers' and 'Continuous Auction with Specialists' will be introduced on a new Xetra instance (Xetra Frankfurt 2). Even if Xetra serves as a new technical environment the trading venue 'Frankfurt' (EDF) will be used for trading in the new market model.

The document on hand exclusively describes electronic trading of certificates, warrants and reverse convertibles. In the following grouped under the term structured products. Documentation concerning equity trading (incl. ETF's and related subscription rights), warrant trading as well as the market model for Block Crossing and for Xetra BEST are available separately.

The market model defines the principles of order matching and price determination. This includes the available trading models, the prioritization of orders, the different order types and the transparency, i.e. the type and the extent of information available to market participants during trading hours. It represents the current implementation status.

The ultimate and legally binding terms for trading at the Frankfurter Wertpapierbörse are laid down in the Rules and Regulations of the exchange, especially the Börsenordnung (Exchange Rules) and the Geschäftsbedingungen (Terms and Conditions for Transactions) as well as in the "Allgemeine Geschäftsbedingungen der Börse Frankfurt Smart Trading AG für den Handel mit Strukturierten Produkten im Freiverkehr an der Frankfurter Wertpapierbörse" (General Terms and Conditions of the Börse Frankfurt Smart Trading AG for the Trading with Structured Products in the Regulated Unofficial Market on the Frankfurt Stock Exchange (FWB)). The market model serves as a basis for the Rules and Regulations which, nevertheless, may contain additional terms.

### 1.1 Definitions

TERM	EXPLANATIONS / DEFINITIONS / SYNONYMS
Xetra 9.0	The term "Xetra 9.0" is exclusively related to the functionalities within the Xetra software, which is to be established for the FWB structured products market.
Structured Products	Structured products within this document are certificates, warrants and reverse convertibles (excluding company issued warrants).
Instrument	An instrument is a security that is set up in Xetra 9.0 for trading.
Tick Size	A tick size represents a limit price / range step.
Order book depth	The order book depth stands for the accumulated quantities of orders and quotes per limit in the order book.

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<sup>1</sup> Technically only a single trading model will be used.

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TERM	EXPLANATIONS / DEFINITIONS / SYNONYMS
Executable order book situation	An executable order book situation is an order book situation in terms of a crossed order book within the spread of the quote or without generating a partial execution of an order executable at the quote.
Potentially executable order book situation	A potentially executable order book situation is an order book situation in terms of a crossed order book or a market order without an available quote.
Potentially executable volume	The potentially executable volume is defined as the surplus at the potentially executable price, excluding the volume of the quote.
Partially closed order book	Depending on the trading model only the Specialist or Issuer quote is displayed
Open order book	All limit and market orders with their respective volume are displayed with an order book depth of 1. The orders are accumulated by their limits and the number of orders per limit is displayed.
Closed order book	No pre-trade information is displayed. Only post-trade information is available.
Fully open order book	All orders (incl. stop orders and orders in the locked stock) on single order basis including their originator are distributed (only for Specialists).
Minimum tradable unit/lot size	The minimum tradable unit/lot size is the minimum quantity that a order in the Xetra system can have. Only orders with quantities equal to multiples of the minimum tradable unit/lot size are accepted by the system.
Issuer	The term "Issuer" is used synonymously either for the Issuer or his Quote Provider throughout the document if not stated differently.
Quote Provider	The Quote Provider is Issuer or a trading participant commissioned by him for spending liquidity to the market.
Specialist	When referring to the "Specialist trading model", the Specialist as external Market Maker is meant. Additionally to him, the Issuer/Quote Provider of the instrument is known in the trading system. A Specialist can enter on behalf orders for his Issuer or other customers.
Consolidated Exchange Feed	CEF: Central information distribution system of the Deutsche Börse AG

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## 2 Fundamental Principles of the Market Model

The following fundamental principles for the trading of structured products were determined in the process of designing the market model:

1. A structured product can be traded only in the trading model 'Continuous Auction with Issuer' or 'Continuous Auction with Specialist'.
  2. Trading is anonymous, i.e., market participants cannot identify which market participant entered an order pre-execution. Only the Specialist is able to identify the originator of an order.
  3. All order sizes can be traded in both trading models.
  4. The order is valid for a maximum of 90 calendar days (including the current day) from the date of entry.
  5. Stop limit and stop market orders are supported.
  6. Depending on the trading model during the main trading phase the Specialist or Issuer provides quotes to the market. Specialist/Issuer quotes can be modified or deleted (only valid for standard quotes). Specialist/Issuer quotes might have a volume of equal to or greater than zero, have to be double sided and must bear a limit on the bid side of higher than zero. The limit on the ask side can only be equal to or higher than the limit on the bid side.
  7. Depending on the trading model there is exactly one Specialist/Issuer per instrument.
  8. During the pre-trading phase for market participants the order book is partially closed. Depending on the trading model only the Specialist/Issuer quotes are displayed to the market (not via the trading system but via CEF and connected vendor platforms).
  9. During the main trading phase the transparency depends on the trading model:  
'Continuous Auction with Issuer': Depending on the auction phase for market participants the order book is open or partially closed.  
'Continuous Auction with Specialist': Independent from the auction phase the order book is partially closed, i.e. only the Specialist quote is displayed.
  10. The Specialist is able to enter orders (and quotes) on own behalf and on behalf of other trading participants (in instruments assigned to him).
  11. In both trading models there is always exactly one price in an instrument at one point of time.
  12. Depending on the trading model prices are determined only within or at the Specialist/Issuer quote according to the modified principle of highest executable volume.
  13. Price determination: If there are several possible limits with the same surplus on the bid and the ask side or with no surplus on hand, the midpoint of the possible prices is taken into account as an additional criterion.
  14. Orders in the order book are executed according to price/time priority.
  15. After price determination the Issuer quote is not deleted. Remaining parts of the quote stay in the order book. In the Specialist model the (matching) quote is deleted after a price determination.
  16. Trade confirmations are disseminated immediately after the respective trade.
  17. During post-trading phase the order book is closed for market participants.
  18. The accounting cut off is carried out daily subsequent to the post-trading phase.
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### 3 Products and Segmentation

Trading of structured products at the FWB offers a high number of investment and leverage products, where most instruments have a unit quotation and a few percentage quotation.

In general, structured products can be listed / included in all admission (market) segments (regulated unofficial market (Freiverkehr), regulated market (Geregelter Markt), official market (Amtlicher Markt).

Due to the high number of instruments and the steady increase in the number of instruments, a further segmentation besides investment and leverage products is carried out.

Currently the following segmentation is known in the market and used for statistical purposes and performance measurement:

Investment products	Leverage products
Reverse Convertibles	Exotic leverage products
Basket Certificates	Knock-Out Products (with stop loss)
Bonus Certificates	Knock-Out Products (without stop loss)
Discount Certificates	Plain Vanilla Warrants
Guarantee Certificates	
Index Certificates	
Outperformance Certificates	
Miscellaneous Investment Products	

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## 4 Market Participants

A trading participant in a Continuous Auction Model must meet the requirements for participating in exchange trading according to the Rules and Regulations of the Frankfurt Stock Exchange. It must also be guaranteed that transactions are settled properly by the trading participant or a clearing member has been commissioned to settle the trades of the trading participant.

The users of the system can be divided into several categories:

- **Traders**  
Traders are individuals admitted for exchange trading. A trader can act as agent trader (account "A") or as proprietary trader (account "P"). Orders will be flagged accordingly.
  - **Issuers**  
In the trading model 'Continuous Auction with Issuer', the issuers are admitted to exchange trading. In addition to traders the Issuers participate as liquidity providers by entering binding quotes into the system ("Issuer", account "I"). Issuers may authorize a Quote Provider for providing liquidity in their instruments.
  - **Specialists**  
In the trading model 'Continuous Auction with Specialist', the Specialists are admitted for exchange trading and participate as information and liquidity providers by entering quotes into the system ("Specialist", account "I"). These quotes are based on the separately received Issuer quotes and the current order book situation. In addition the Specialist is able to enter orders on behalf of other trading participants. Furthermore to support the market with additional liquidity the Specialist is able to enter orders which are not charged against him (account "L").
  - **Other Users**  
Administrators are users which are not admitted or authorized for trading (they assign and maintain authorization rights for the member's personnel). This category also includes personnel in settlement, operation and supervision as well as information users.
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## 5 Orders and Quotes

All order sizes can be traded which have a determined minimum lot size for the specific security. The specific lot size may be one.

An order modification which is relevant for matching leads to a change of its price/time priority. This modification results in the deletion of the order and the entry of a new order (i.e. new time stamp, new order number). Modifications that are not relevant for matching do not influence the price/time priority.

### 5.1 Basic Order Types

Two basic order types are admitted for price determination during Continuous Auction:

**Market orders** are unlimited bid/ask orders. They are to be executed at the next price determined.

**Limit orders** are bid/ask orders, which are to be executed at their specified limit or better.

Order types can be specified further through additional validity constraints. Execution constraints (i.e. FOK and IOC) and trading restrictions (e.g. opening auction only, closing auction only etc.) are not allowed in these trading models.

### 5.2 Validity Constraints

The validity of orders can be determined by means of further constraints. To this effect, the market model offers the following variations:

*Good-for-day:* Order only valid for the current exchange trading day.

*Good-till-date:* Order only valid until a specified date (up to a maximum of 90 days (i.e. 90 calendar days including the current day (=T+89)) from the date of entry.

*Good-till-cancelled:* Order only valid until it is either executed or deleted by the originator or the system on reaching its maximum validity of 90 days (i.e. 90 calendar days including the current day (=T+89)).

### 5.3 Stop Orders

In order to support trading strategies, two stop order types can be used, the execution of which will be possible after reaching a predefined price level (stop price). In contrast to other Xetra trading models stop orders are not triggered by a price determination but by Specialist/Issuer quotes:

*Stop Market Order:* When the stop limit is reached (or exceeded for stop buy orders or fallen below for stop sell orders), the stop order is automatically placed in the order book as a market order and might be executed immediately.

*Stop Limit Order:* When the stop limit is reached (or exceeded for stop buy orders or fallen below for stop sell orders), the stop order is automatically placed in the order book as a limit order and might be executed immediately.

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The stop limit for both types of stop orders might be reached by a Specialist/Issuer quote. A stop loss order is triggered if the stop limit equals or exceeds the bid limit of the Specialist/Issuer quote. A stop buy order is triggered if the stop limit is equal to or below the ask limit of the Specialist/Issuer quote. The triggering of stop orders leads to a new time stamp for these orders. The limit and market orders resulting from a triggered stop limit or stop market orders will be considered for execution in the current auction and might be executed immediately.

## 5.4 Quotes

Quotes can be entered by the Issuer or by the Specialist. There might be a different functionality / handling for these parties.

Three different types of Specialist/Issuer quotes are supported:

- standard quotes,
- matching quotes, dedicated to terminate a call/freeze phase and
- price without turnover quotes, dedicated to determine a price without turnover.

In general, these quotes have to be entered double sided. They can be entered with a zero volume on both sides or on one side only, either on the bid side or on the ask side or with non-zero volume on both sides.

Specialist/Issuer quotes are displayed to the market as part of the order book or the inside market respectively.

The Issuer is obliged to provide firm quotes throughout the trading day. The Issuer must quote for at least the minimum guarantee size in all assigned instruments. Quotes can only be entered by the Issuer on his own behalf.

The Specialist is obliged to provide quotes throughout the trading day for information purposes and for the provision of liquidity. In his quotation the Specialist is obliged to take the Issuer quote and the current order book situation into account. The Specialist enters quotes on behalf of the respective Issuer.

## 5.5 Handling of Orders and Quotes in Case of an Exceptional Trading Situation

In case an exceptional trading situation takes place, the exchange can suspend trading on instrument level or market level. Orders and quotes existing in the system are deleted.

Instruments with a knock-out or stop loss event are temporary suspended after the event occurs. The duration of the suspension has to be coordinated with the respective Issuer. After the instrument gets unsuspended only the entry of sell orders is possible for Order Flow Providers until the respective instrument is delisted or the maturity date of the respective instrument is reached. For Specialist/Issuer only single-sided quotes for repurchasing of orders are allowed.

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## 6 Trading Phases

Trading takes place all day and begins with the pre-trading phase followed by the main trading phase and the post-trading phase. The system is not available for trading between the post-trading and pre-trading phase.

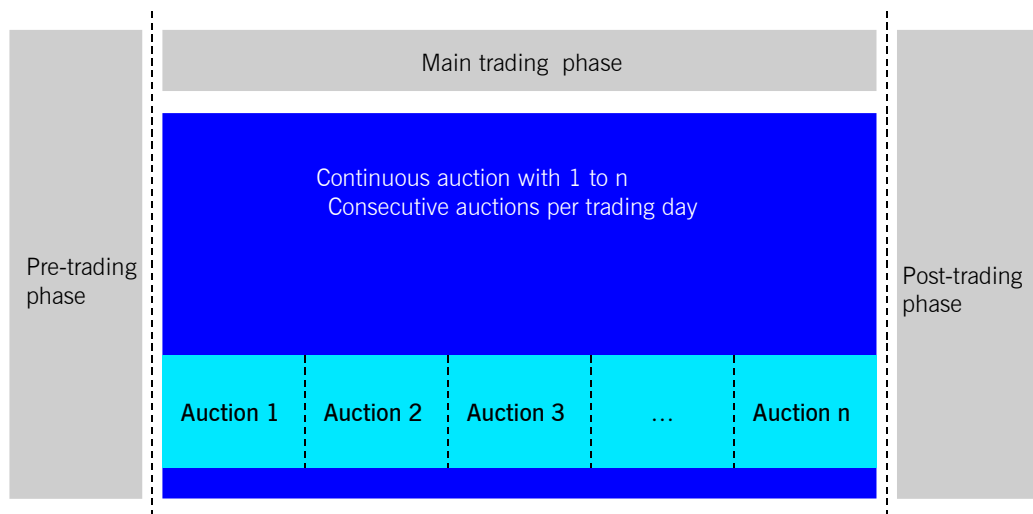


Figure 1: Flow of trading

### 6.1 Pre-Trading Phase

The pre-trading phase initiates the trading day. All market participants can enter orders and Specialists/Issuers can enter quotes or orders to prepare the actual trading day and modify or delete their existing orders or quotes.

The exchange confirms the member's order entry and maintenance by order confirmation.

For market participants (incl. the issuers) the order book is partially closed. Only the Specialist receives an overview of the order book situation. The Specialist/Issuer quotes are displayed to the public via the central information distribution system of the DBAG (currently CEF). The last price fixed of the previous day is displayed via CEF and the trading system.

### 6.2 Main Trading Phase

The main trading phase starts time triggered after the pre-trading phase.

Matching takes place in auctions. In general an auction consists of two phases ('Continuous Auction with Issuer': a pre-call phase and an optional call phase; 'Continuous Auction with Specialist': a pre-call phase and a freeze phase) and the price determination.

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Trading model 'Continuous Auction with Issuer':

During the pre-call phase and call phase, all market participants can enter, modify or delete orders. In addition, Issuers can enter or delete quotes.

Trading model 'Continuous Auction with Specialist':

During the pre-call phase all market participants can enter, modify or delete orders. In addition, Specialists can enter or delete quotes and orders on own behalf or on behalf of other market participants. During the freeze phase the order book is locked by the Specialist. Order entries, modifications or deletions are not considered during the freeze phase. Such instructions are stored (locked stock/Vorhaltebestand) and enter the order book immediately after it gets unlocked. The Specialist is still able to enter or delete quotes or orders on own behalf or on behalf of other market participants during the order book freeze.

### **6.3 Post-Trading Phase**

The post-trading phase starts time triggered after the main trading phase. If at this point in time an auction is still running, the auction will be regularly ended, i.e. in this instrument the post trading phase might begin after the maximum duration of the call/freeze phase.

In the post-trading phase, new orders can be entered and existing orders can be modified or deleted. New order entries are taken into consideration in the respective trading form on the following trading day depending on possible validity constraints. It is also possible to modify trade attributes in the post-trading phase. Any trade attributes which are not subject to the counterparty's approval (e.g., settlement account, member internal order number, text, account identification etc.) may be modified. The trader can replace the settlement account of a specific trade using one of the remaining 15 settlement accounts of the relevant member during the same business day. If a settlement account is modified, a new trade confirmation will be forwarded to both counterparties.

Specialist/Issuer quotes cannot be entered during the post-trading phase and will be deleted by the system during the end of day processing.

In this phase the order book is closed. Neither market participants nor the Specialist/Issuer receive an overview of the market situation. Only the last price fixed of the current day is displayed.

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## 7 Trading Models

The market model “Continuous Auction” will be supported. It contains two trading models, the ‘Continuous Auction with Issuer’ and the ‘Continuous Auction with Specialist’.

### 7.1 Continuous Auction with Issuer

In ‘Continuous Auction with Issuer’ all order sizes can be traded which have a determined minimum lot size for the specific security. In each case, only the minimum lot size can be traded or any integer multiple thereof. The minimum lot size may be one so that any integer multiple thereof is tradable. By taking into consideration all existing market, limit and possibly stop orders as well as the Issuer quote of an instrument, the auction will concentrate liquidity. The auction price will be determined pursuant to the modified principle of highest executable volume within or exactly at the bid or ask limit of the Issuer quote. Orders will be executed according to the price/time priority (taking into account the Issuer quote).

An auction in the trading model ‘Continuous Auction with Issuer’ consists of a pre-call phase, an optional call phase and the price determination. The optional call phase is applied to avoid partial order executions and supports stop order processing.

The main trading phase consists of succeeding auctions. The number of succeeding auctions as well as the time between auctions or the duration of the pre-call phase respectively is substantially determined by the Issuer, i.e. the quality of the quotes (provided quote volume and spreads) and the reaction time during the call phase. Furthermore the defined maximum duration of the call phase and the order book liquidity are relevant.

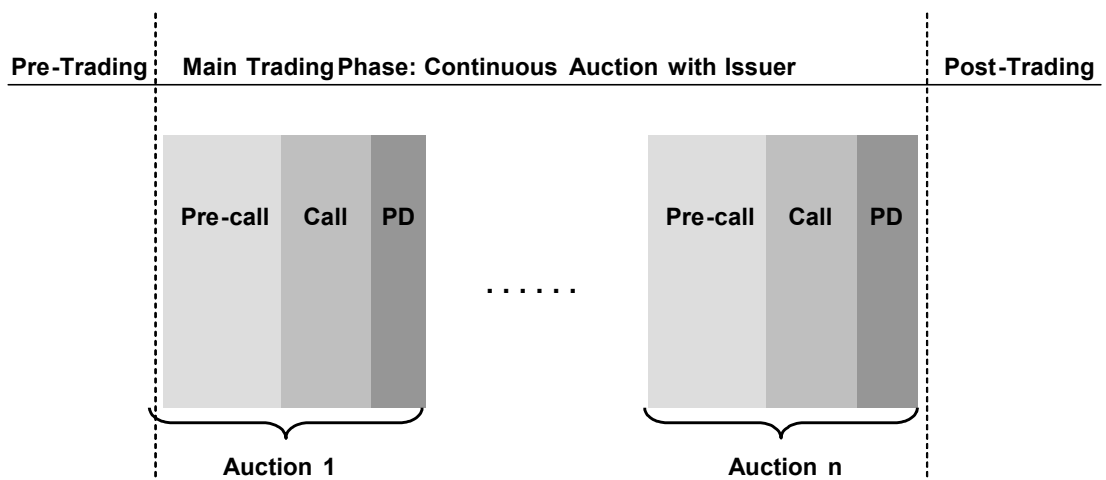


Figure 2: Change of trading phases – Continuous auction with Issuer

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### **7.1.1 Pre-Call Phase**

During the pre-call phase orders may be entered, modified or deleted by market participants or the Issuer. Besides, the Issuer may enter or delete quotes pursuant to the Rules and Regulations.

During this pre-call phase the order book is open with a depth of 1, thus displaying all limit and market orders as well as the quote with the accumulated volumes of the best bid and best ask limit and the number of orders in the book at these limits. Market participants and Issuers receive the same information.

From the pre-call phase a price determination or a phase change to the call phase is possible.

In general for a phase change from pre-call to price determination an Issuer quote is required. A price will be determined immediately, if there is an executable order book situation in terms of a crossed order book within the spread of the Issuer quote, or without generating a partial execution of an order executable at the Issuer quote.

These orders will be executed according to price/time priority within or at the spread of the Issuer quote.

A phase change from pre-call to call is triggered by a potential executable order book situation (i.e. a market order or a crossed order book situation without an available Issuer quote) or if the volume of the executable orders at the Issuer quote exceeds the quote volume (including the volume of executable opposing orders) or a stop limit is reached by the Issuer quote. (In case of a stop loss order, if the stop limit equals or exceeds the bid limit of the Issuer quote. In case of a stop buy order, if the stop limit is equal or below the ask limit of the Issuer quote.)

There is no maximum duration for the pre-call phase defined. If there is no order in a specific instrument the pre-call phase will not change during the complete main trading phase.

### **7.1.2 Call Phase**

During the call phase orders may be entered, modified or deleted by market participants or the Issuer. Besides, the Issuer may enter or delete quotes pursuant to the Rules and Regulations.

During the auction's call phase, the order book is partially closed. Only the Issuer quote is displayed. In case of an executable order book only the potential executable volume for the indicative auction price is displayed to the respective Issuer. The indicative auction price is published neither to the Issuer nor to the market.

The duration of the call phase has no predetermined minimum period and can be varied depending on the reaction time of the Issuer and the instruments liquidity. The call phase has a maximum period and no random end (but might be terminated by the respective Issuer before the end of the maximum duration).

From the call phase a price determination or a phase change to the pre-call phase is possible.

In general for a phase change from call to price determination an Issuer quote is required. A price will be determined if a matching quote has been entered and an executable order book situation exist, the defined maximum duration of the call phase has passed or a full execution of the executable orders is possible.

A phase change from call to pre-call takes place if there is no executable order book situation anymore due to order modifications or a quote update or because of the deletion of the existing Issuer quote during the call phase.

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### 7.1.3 Price Determination

The price determination takes place if the order book is crossed within the Issuer quote or at the bid or ask limit of this quote based on the fixed order book situation at the end of the pre-call or call phase. The Issuer quote and all orders, which are in the order book at the time of price determination, are considered in the price determination. Price determination follows the modified principle of highest executable volume: the auction price is the price with the highest executable order volume and the lowest surplus for each limit within the current Issuer quote (including the bid and ask limit of the quote). Price/time priority ensures that a maximum of one order is executed only partially. Further criteria for determination of the auction price are considered if the order book situation is not clear, that is if there is more than one limit with the same executable volume (see: chapter 9 Price Determination Process). After price determination any remaining parts of the Issuer's quote are not deleted.

The market participants are informed about trades by way of an execution confirmation which contains the price, the volume and the time of execution. The execution confirmation is followed by a trade confirmation providing participants with all the trade data. Trades of the current trading day can be modified; in this case the participants will receive an updated trade confirmation.

## 7.2 Continuous Auction with Specialist

In general, the trading model 'Continuous Auction with Specialist' equals the trading model 'Continuous Auction with Issuer'. The differences are based on intermediation role of the Specialist. There are differences especially in the transparency, the workflow of an auction and special functionalities.

In 'Continuous Auction with Specialist' all order sizes can be traded which have a determined minimum lot size for the specific security. In each case, only the minimum lot size can be traded or any integer multiple thereof. The minimum lot size may be one so that any integer multiple thereof is tradable. Orders will be executed according to the price/time priority.

An auction in the trading model 'Continuous Auction with Specialist' consists of a pre-call phase, a freeze phase and the price determination. The freeze phase supports the specialist to provide liquidity in the instruments he is assigned to.

The Specialist is obliged to use an adequate Limit Control System (LCS), which immediately displays executable orders including stop orders.

The main trading phase consists of succeeding auctions. The number of succeeding auctions as well as the time between auctions or the duration of the pre-call phase respectively as well as the duration of the freeze phase is substantially determined by the Specialist, i.e. the quality of the quotes (provided quote volume and spreads) and the reaction time during the pre-call phase and the freeze phase. Furthermore the defined maximum duration of the freeze phase and the order book liquidity are relevant.

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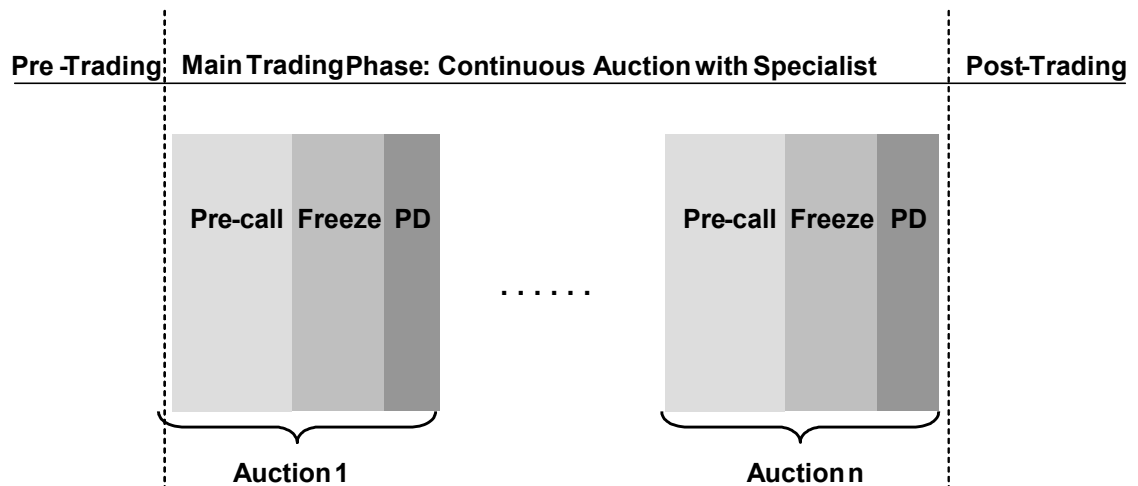


Figure 3: Change of trading phases – Continuous auction with Specialist

### 7.2.1 Pre-Call Phase

During the pre-call phase orders may be entered, modified or deleted by market participants. In addition the Specialist is able to enter, modify or delete orders on own behalf, on behalf of the respective Issuer or other trading participants. Besides, the Specialist may enter or delete quotes pursuant to the Rules and Regulations.

During this pre-call phase the order book is fully open for Specialist only, i.e. the Specialist is able to see each order and its originator. For market participants the order book is partially closed, i.e. only the Specialist quote is displayed.

From the pre-call phase only a change to the freeze phase is possible. This phase change is triggered by the respective Specialist.

There is no maximum duration for the pre-call phase defined. If there is no trigger by the respective Specialist in a specific instrument the pre-call phase will not change during the whole trading day (i.e. main trading phase).

### 7.2.2 Freeze Phase

During the freeze phase the order book is locked. In general market participants can not enter, modify or delete orders in the order book. Such instructions are stored and enter the order book immediately after it gets unlocked by the Specialist without a price determination or with a price determination. In the freeze phase the Specialist is able to enter, modify or delete orders on own behalf, on behalf of the respective Issuer or other market participants. Besides, the Specialist may enter or delete quotes pursuant to the Rules and Regulations.

During the auction's freeze phase the order book transparency for market participants is equal to the transparency of the pre-call phase, i.e. partially closed. In addition to the order book transparency in the pre-call phase the Specialist can receive the potentially executable volume at the indicative auction price, e.g. by his LCS.

The duration of the freeze phase has no predetermined minimum period and can be varied depending on the reaction time of the Specialist. The freeze phase has a maximum period and no random end (but might be terminated by the respective Specialists before the end of the maximum duration).

From the freeze phase a phase change to the price determination or to the pre-call phase is possible. In general a phase change from freeze to pre-call is triggered by the respective Specialist. If there is no trigger by the Specialist during the maximum period of the freeze phase, the system will automatically switch to the pre-call phase without a price determination. The change from freeze to price determination will be triggered by the Specialist by entering a matching quote.

A phase change from freeze to pre-call will not delete the current Specialist quote.

### **7.2.3 Price Determination**

The price determination takes place after a matching quote entry of the respective Specialist. The price is determined by the trading system. The matching quote and all orders, which are in the order book at the time of price determination, are considered in the price determination. Price determination follows the modified principle of highest executable volume: the auction price is the price with the highest executable order volume and the lowest surplus for each limit within the current Specialist matching quote (including the bid and ask limit of the quote). Price/time priority ensures that a maximum of one order is executed only partially. Further criteria for determination of the auction price are considered if the order book situation is not clear, that is if there is more than one limit with the same executable volume (see: chapter 9 Price Determination Process). After price determination any remaining parts of the Specialist quote are deleted.

The market participants are informed about trades by way of an execution confirmation which contains the price, the volume and the time of execution. The execution confirmation is followed by a trade confirmation providing participants with all the trade data. Trades of the current trading day can be modified; in this case the participants will receive an updated trade confirmation.

## **7.3 OTC Trade Entry**

For participants the current Xetra OTC trade entry functionality will be offered for structured products on the new Xetra instance (Xetra Frankfurt 2).

During the entire trading day (pre-trading, main trading and post-trading phase), all participants have the possibility to enter OTC trades in the trading system. In principle, entry is possible for all securities which are part of the exchange trading on the trading system (on the Xetra Frankfurt 2 instance). For the use of this function, a trader's admission is not necessary.

The entry of OTC trades is possible for either the seller or the buyer. Entered OTC trades must be confirmed by the counterparty. Subsequently, both counterparties receive a trading confirmation generated by the system. As long as the trade is still unconfirmed, the OTC trade may be deleted through the counterpart that originally entered the trade. Unconfirmed trades are automatically deleted by the system at the end of the trading day. The trading system transmits the confirmed OTC trades to the settlement systems for the evening processing.

It is possible to specify both the value date and the type of the settlement for OTC trades.

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## 8 Tasks and Duties of the Specialist / Issuer

### 8.1 Specialist's Tasks and Duties

In the trading model Continuous Auction with Specialist the Specialist of a structured product is responsible for a high trading quality with regard to the liquidity provision of the respective Issuer. The following duties result from this task:

1. The Specialist is obliged to maintain a limit control system which scrutinizes all valid orders (incl. stop orders) in the order book for potential execution. In addition the system shall allow for the entry of quotes relevant for information purposes and for price determination of the trading system.
2. Furthermore Specialists shall receive real-time Issuer quotes and setup an electronic connection with issuers for price validation purposes.
3. The Specialist is obligated to provide quotes for information purposes throughout the trading day. For the quotation the Issuer quote and the current order book situation have to be taken into account.
4. The Specialists shall avoid, to the greatest possible extent, partial executions of orders that have been placed to them.
5. In addition to the respective Issuer the Specialist might be obliged to offer additional liquidity to ensure a high trading quality.
6. If there has not been a price determination for an instrument until a pre-defined point in time during the trading day the Specialist shall initiate a price determination for generating a price without turnover.

### 8.2 Issuer's Tasks and Duties

In the trading model Continuous Auction with Specialist it is the task of the Issuer of a structured product to supply the respective Specialist with price information and liquidity for this security. The following duties result from this task:

1. The issuer is obligated to provide – during the trading period and on request by the respective Specialist - a binding quote, consisting of a bid limit and an offer limit (quote) which is valid up to an adequate volume currently customary in the market, at least for the minimum quotation volume if applicable. The minimum quotation volume for these "investment products" and "leverage products" shall be 10.000 units. In cases with less than 10.000 units, the minimum quotation requirement shall be EUR 10,000.00 for "investment products" and EUR 3,000.00 for "leverage products".
  2. In case of a knock-out/stop loss event the issuer is obliged to inform the exchange about the knock-out/stop loss immediately.
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In the trading model Continuous Auction with Issuer it is the task of the Issuer of a structured product to supply the market with the central liquidity for this security. The following duties result from this task:

1. The Issuer continuously provides information of the actual market situation by entering a standard quote or a matching quote. Such a quote must have at least the minimum quote quantity for the respective instrument. The minimum quotation volume for "investment products" and "leverage products" shall be 10.000 units. In cases with less than 10.000 units, the minimum quotation requirement shall be EUR 10,000.00 for "investment products" and EUR 3,000.00 for "leverage products".
2. Standard quotes entered into the system have to be consistent with those information published by the Issuer at that time through other electronic information media.
3. In case of a potential executable order book situation (i.e. a market order or a crossed order book situation without an available Issuer quote) or if the volume of the executable orders at the Issuer quote exceeds the quote volume (including the volume of executable opposing orders) or a stop limit is reached by the Issuer quote, the Issuer will receive an electronic message to enter a matching quote. This matching quote should correspond to the quote entered earlier and should fulfil requirements for the minimum quote volume.
4. If there has not been a price determination for an instrument until a pre-defined point in time during the trading day the Issuer shall initiate a price determination for generating a price without turnover.
5. In case of a knock-out/stop loss event the issuer is obliged to inform the exchange about the knock-out/stop loss immediately.

The stated Issuer's duties might be outlined more precisely and completed in the Rules and Regulations of the Frankfurt Stock Exchange.

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## 9 Price Determination Process

### 9.1 Basic Matching Rules

The auction price is determined on the basis of the Issuer/Specialist quote and the order book situation stipulated at the end of the call/freeze phase.

The fundamental rules of calculating the auction price by the trading system according to modified principle of highest executable volume is explained below:

The auction price is the price with the highest executable order volume and the lowest surplus for each limit in the order book within the price range set by the Specialist/Issuer quote (see example 1).

Should this procedure identify more than one limit within the price range (including bid and ask limits of the Specialist/Issuer quote) with the highest executable order volume and the lowest surplus, the auction price will be determined on the basis of the surplus:

- If the surplus for all limits lies within the price range (including bid and ask limits of the Specialist/Issuer quote) on the buy side (surplus of demand) the auction price is calculated according to the highest limit (see examples 2 and 6).
- If the surplus for all limits lies within the price range (including bid and ask limits of the Specialist/Issuer quote) on the sell side (surplus of supply) the auction price is calculated according to the lowest limit (see examples 3 and 7).

If consideration of the surplus does not lead to a clear auction price, the midpoint of the possible prices is included as additional criterion. This may be the case if there is for several limits no surplus on hand (see examples 4 and 8) or if there is an equal surplus on the bid and the ask side (see examples 9).

- The midpoint is calculated as the midpoint of the possible highest and lowest price and serves as auction price.

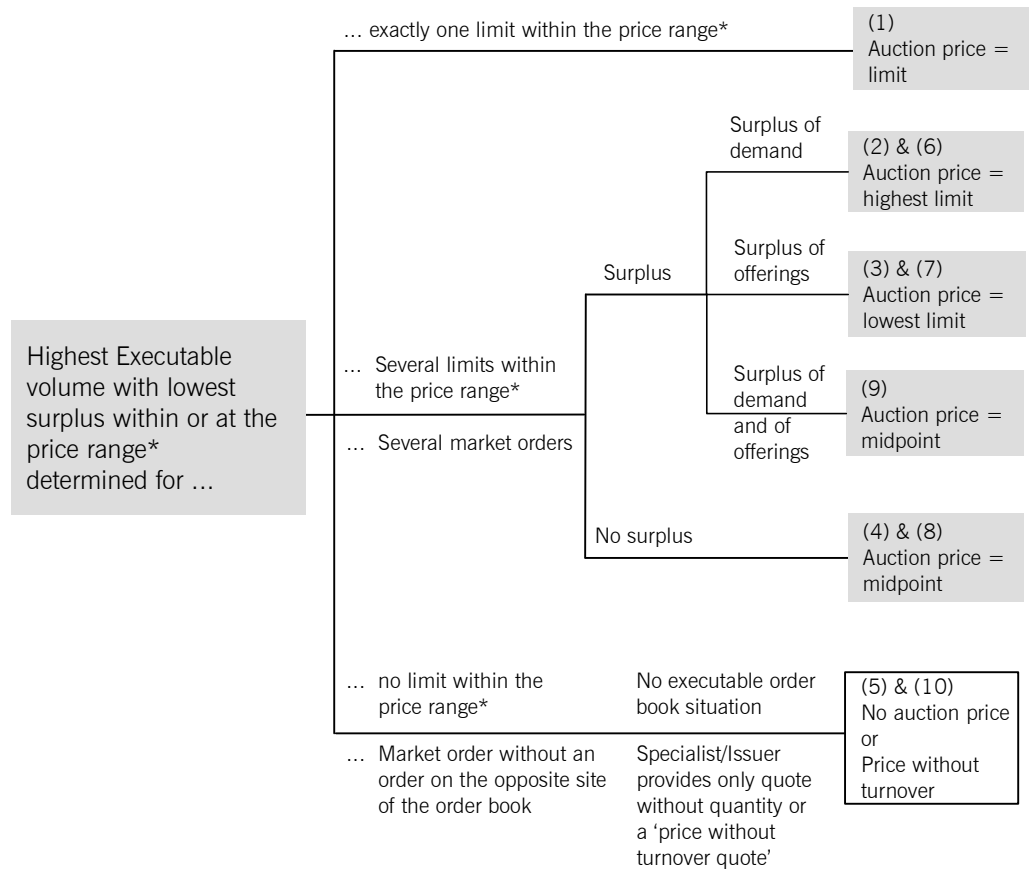
If orders within the price range (including bid and ask limits of the Specialist/Issuer quote) cannot be matched, an auction price with turnover cannot be determined (see example 5).

#### Prices without turnover

If there has not been a price determination for an instrument until a pre-defined point in time during the trading day the Specialist/Issuer shall initiate a price determination for generating a price without turnover. Such a price determination will be triggered by entering a respective quote (price without turnover quote). If there is no executable order in the order book a price without turnover based on the bid side of the quote will be determined.

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The following diagram gives an outline of how price determination rules affect possible order book constellations in continuous auction. The number in brackets refers to the corresponding example for this rule.



\* Specialist/Issuer quote with or without quantity. Bid and ask limit of the Specialist/Issuer quotes have to be included.

Figure 4: Rules for calculation the auction price

## 9.2 Examples for determination of the auction price

The following examples are meant to clarify the calculation of the auction price. Therefore it is always an integer auction price.

Example 1: There is exactly one limit at which the highest order volume can be executed and which has the lowest surplus.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
				202	800	800		
				201	800	800		
Limit	300	300		200	500	800	100	Quote
Limit	200	500		199	200	700		
Limit	300	800	100	198		700	300	Limit
		800	400	197		400	400	Limit
Quote	100	900	900	196				

An auction price at a limit of € 198 with a quantity of 700 and a surplus of 100 on bid side is calculated.

Example 2: There are several possible limits and there is a surplus of demand.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
				202	900	900		
				201	900	900	400	Quote
Limit	600	600	100	200		500		
		600	100	199		500	100	Limit
		600	200	198		400	100	Limit
Quote	200	800	500	197		300	300	Limit

An auction price corresponding to the highest limit at € 200 with a quantity of 500 and surplus of 100 on bid side is calculated.

Example 3: There are several possible limits and there is a surplus of supply.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
Limit	300	300		202	500	800		
Limit	100	400		201	400	800	200	Quote
		400		200	200	600		
Limit	100	500		199	100	600		
		500		198	100	600	600	Limit
Quote	400	900	900	197				

An auction price corresponding to the lowest limit at € 198 with a quantity of 500 and surplus of 100 on ask side is calculated.

Example 4: There are several possible limits and no surplus on hand.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
				203	600	600	100	Quote
Limit	300	300		202	200	500		
Limit	200	500		201		500		
		500		200		500		
		500		199		500	300	Limit
		500	300	198		200	200	Limit
Quote	100	600	600	197				

An auction price corresponding to the midpoint of the possible prices is calculated at € 200  $((199 + 201)/2)$  with a quantity of 500.

Example 5: There is no possible limit.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
				202	500	500	300	Quote
				201	200	200	200	Limit
Limit	100	100	100	200				
Quote	300	400	400	199				

It is not possible to determine an auction price.

Example 6: Only market orders are executable in the order book with a surplus of demand. Specialist/Issuer offers no additional liquidity.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
Market	200	200	100	Market		100		
		200	100	202		100	0	Quote
		200	100	201		100		
		200	100	200		100		
Quote	0	200	100	199		100		
		200	100	Market		100	100	Market

The auction price is calculated corresponding to the limit of the Specialist/Issuer quote on the ask side with € 202, a quantity of 100 and a surplus of 100 on the bid side.

Example 7: Only market orders are executable in the order book with a surplus of supply. Specialist/Issuer offers no additional liquidity.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
Market	100	100		Market	100	200		
		100		202	100	200	0	Quote
		100		201	100	200		
		100		200	100	200		
Quote	0	100		199	100	200		
		100		Market	100	200	200	Market

The auction price is calculated corresponding to the limit of the Specialist/Issuer quote on the bid side with € 199, a quantity of 100 and a surplus of 100 on the ask side.

Example 8: Only market orders are executable in the order book with no surplus. Specialist/Issuer offers no additional liquidity.

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
Market	100	100		Market		100		
		100		202		100	0	Quote
		100		201		100		
		100		200		100		
Quote	0	100		199		100		
		100		Market		100	100	Market

An auction price corresponding to the midpoint of the possible prices is calculated at € 201  $((199 + 202)/2 = 200,5$  rounded to the next tick size which is assumed to be 1€) with a quantity of 100.

Example 9: Orders are executable within or at the Specialist/Issuer quote and an equal surplus on both sides. (Price determination between order limits)

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
				203	1.200	1.200		
Limit	100	100		202	1.100	1.200	1.000	Quote
		100		201	100	200	100	Limit
		100		200		100		
Limit	100	200	100	199		100		
Quote	1.000	1.200	1.100	198		100	100	Limit

An auction price corresponding to the midpoint of the possible prices is calculated at € 200  $((199 + 201)/2)$  with a quantity of 100.

Example 10: There are no executable orders in the order book. Specialist/Issuer enters a price-without-turnover-quote (pwt-quote).

<b>Bid</b>					<b>Ask</b>			
	Quantity	Cum. quantity	Surplus	Limit	Surplus	Cum. quantity	Quantity	
				202			0	Quote
				201				
Quote	0			200				

An auction price corresponding to the bid limit of the pwt-quote is calculated at € 200 with a quantity of 0.