Xetra® Release 14.0

Release Description

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1 Introduction

This document describes improvements and developments which will be implemented in Xetra Release 14.0. The Release Description is focused on the scope for the members of the Frankfurt Stock Exchange and is written for Xetra project coordinators, system administrators and trading department personnel. It provides an outline of the new functionality and technical changes. The production start for this release is planned for October 28, 2013 and will be mandatory for the participants of all Xetra markets.

With Xetra Release 14.0 not only functional enhancements but also technical changes and further development of the customer interfaces are planned. Where the changes require amendments of the rules and regulations of the Frankfurter Wertpapierbörse (FWB®, the Frankfurt Stock Exchange), they are subject to corresponding resolutions of the FWB Exchange Council and approval of the Exchange Supervisory Authority.

The German High Frequency Trading Bill was passed by the Upper House of the German Parliament on March 22, 2013. It foresees measures and procedures to regulate algorithmic trading and high frequency trading by introducing various measures (see Xetra circular 023/13). With Xetra Release 14.0, the system-related preconditions on the Exchange side for implementation of the Bill will be created.

Xetra 14.0 will introduce a system-based risk management in trading model Continuous Trading allowing Market Makers to reduce their operational risks and market risks. This feature automatically deletes quotes and orders entered on the Designated Sponsor account if their executions exceed a pre-defined threshold within a pre-defined time period.

In response to feedback by some Trading Members, the validity of Iceberg orders will be extended from currently good-for-day to up to 360 calendar days, in line with the validity of other order types on Xetra.

Currently, Xetra indicates the reason for an order deletion only in a few cases. With Xetra Release 14.0 the reason for order deletion will be extended to include particular events that are initiated in Xetra, e.g. a corporate action or suspension of an instrument. This reason for an order deletion will be stated explicitly in the corresponding order confirmation. This functionality will only be available via the Xetra interfaces FIX Gateway and Enhanced Transaction Solution.

Xetra 14.0 continues the implementation of the interface strategy announced in September 2010 to further increase the attractiveness of the new interfaces Enhanced Transaction Solution and Xetra FIX Gateway as well as Enhanced Broadcast Solution and Market Data Interface.

For market model Continuous Auction with Market Maker, the Issuer Broadcast will also be offered via the Enhanced Transaction Solution interface. Thereby, the full functionality in this market model will be available for Market Makers via the Enhanced Transaction Solution interface. Currently, the Issuer Broadcast is only available via the VALUES API interface.

To further increase attractiveness of the Xetra FIX Gateway for the Members, it will be possible to receive all persistent orders of a given Member via one back-office session. Currently, this functionality is only supported by the Enhanced Transaction Solution interface.

Members are increasingly using intelligent order types offered via FIX. Presently it is not possible for the Members to inquire the current Trailing Stop Limit of Trailing Stop Orders. Xetra Release 14.0 will enable inquiring the Trailing Stop Limit through an internet based solution.

In the Enhanced Broadcast Solution interface it will be possible to identify different trade types received in one incremental message. Therefore, the field "priceTypCod" in the sequence "EntriesTrade" will be moved into the embedded sequence "EntriesTradePrices".

For the Xetra Market Data interface the special auction flag is added to the Price Without Turnover message with Xetra Release 14.0. Additionally, the field "RefreshIndicator" is added to the template Order Book Snapshot message indicating that there is mandatory data in the snapshot. Otherwise the message can be discarded.

Xetra Release 14.0 will be a mandatory release without backward compatibility.

2 Functional Enhancements of Xetra Release 14.0

2.1 High Frequency Trading

The German High Frequency Trading Bill foresees measures and procedures to regulate algorithmic trading and high frequency trading by introducing various measures (see Xetra circular 023/13). Thus with Xetra Release 14.0 a new field "Regulatory ID" needs to be introduced to enable customers to add the necessary information to their orders, quotes, quote requests and cross requests.

The "Regulatory ID" will be a numeric, optional field without any functional validation. It is implemented as a request attribute only, and therefore not returned on any confirmation or execution. The field is not represented in the J-Trader GUI but reflected in RPTTC540 Daily Order Maintenance.

The "Regulatory ID" will be provided via VALUES API ("regulatoryId"), Enhanced Transaction Solution interface ("RegulatoryId") and FIX Gateway ("RegulatoryID") in the requests belonging to the following areas (if applicable via the respective interface):

- Enter, Modify, Delete (Stop) Order
- Enter, Delete Quote
- Enter Mass Quote (once per mass quote)
- Enter Quote Request
- Enter Cross Request

We will keep our members continuously informed about the state of the implementation of the requirements of the German High Frequency Trading Bill (please see Xetra circular 034/13).

2.2 Market Maker Protection in Continuous Trading

The Xetra system will provide enhanced risk control features allowing the traders of a subgroup to set seven different threshold values per instrument group/trader subgroup combination for the execution of quotes and orders on the Designated Sponsor account which will be monitored within the matching process during continuous trading (not in auctions). Once any of these thresholds is reached or exceeded through the execution of a quote/order of the respective instrument group/trader subgroup combination, all quotes and orders of the trader subgroup entered with the Designated Sponsor account in the respective instrument group will be deleted.

The Market Maker Protection functionality will only be enabled for members with a Designated Sponsor Licence assignment in German Federal Government Bonds.

2.2.1 Setup of Market Maker Protection Thresholds

Seven different threshold values can be defined per instrument group/trader subgroup combination that will be monitored during continuous trading:

Threshold	Description
Volume	Total volume of executed quotes/orders, i.e. sum (executed quantity * execution price)
Delta Volume	Difference in volume of executed buy and sell quotes/orders. The actual counter can be negative. Therefore, it is the absolute value of the delta counter which is checked against the respective thresholds
Quantity	Total number of executed quote/order quantity
Delta Quantity	Difference in number of quantity of executed buy and sell quotes/orders. The counter can be negative. Therefore, it is the absolute value of the delta counter which is checked against the respective thresholds
Percentage Volume	Sum of a percentage calculated by dividing the executed volume by the original total quote/order volume (quantity * limit price)
Percentage Quantity	Sum of a percentage calculated by dividing the executed quote/order quantity by the original total quantity of the quote/order
Number of Executions	Number of executions in which quotes/orders are (partially) involved

It is not mandatory to specify each individual limit. If there is no value given for a particular limit, i.e. set to 0, the threshold validation is switched off for this parameter in the matching process.

Only quotes/orders that are executed within a certain time interval will be considered. This "Exposure Time Interval" also needs to be set up together with the above limits for the respective instrument group/trader subgroup combination. It is a rolling time interval and will be determined in seconds. If the time interval is set to 0, the Market Maker Protection in Continuous Trading is completely switched off for the given instrument group/trader subgroup combination irrespective of the values for the threshold limits.

The threshold limits can be changed at any time the trading system is available. After a modification of a threshold limit the new value will only be taken into account at the next time a quote is matched.

The access to this functionality is controlled via a new Resource Access Level. Thresholds can only be inquired and maintained for the trader's own subgroup.

Technically the maintenance of Market Maker Protection thresholds will be possible via VALUES API and Enhanced Transaction Solution interface.

On exchange side the Market Maker Protection in Continuous Trading gets enabled for a whole Instrument Group. All instruments belonging to such a group are marked in the instrument reference data accordingly and will be grouped by the exchange in the same set. Therefore, mass quotes can be used for quoting these instruments.

2.2.2 Monitoring

The configured threshold limits will be continuously monitored during Continuous Trading by the matching process for every executed quote/order of the trader subgroup/instrument group combination independent if the respective quote/order was entered via VALUES API, J-Trader, Enhanced Transaction Solution interface or FIX Gateway.

All executions within the pre-defined time interval will update the current counters to be checked against the limit values. If an update occurs due to an executed quote/order, the system will check whether the last update on the respective counters is "older" than the time interval. In that case, the counters are reset to zero. Otherwise the actual values are updated according to the following rules:

Executed quote side	Limit counter value	Rule
Buy	Volume	Increase by executed volume
	Delta Volume	Increase by executed volume
	Quantity	Increase by executed quantity
	Delta Quantity	Increase by executed quantity
	No. of executions	Increase by 1
Sell	Volume	Increase by executed volume
	Delta Volume	Decrease by executed volume
	Quantity	Increase by executed quantity
	Delta Quantity	Decrease by executed quantity
	No. of executions	Increase by 1
	Percentage Volume	$\sum_{i=1}^{\#exec.} \dfrac{executed\ volume_i}{original\ volume_i} * 100$
	Percentage Quantity	$\sum_{i=1}^{\#exec.} \dfrac{executed\ quantity_i}{original\ quantity_i} * 100$

Once any of the counters hits or exceeds the corresponding configured limit the following sequence of steps will be executed:

- Process the current transaction, i.e. execute the match that leads to the violation

- Mass quote/order delete for the respective instrument group/trader subgroup combination for quotes/orders entered on the Designated Sponsor account

The counters will not be reset to zero to prevent new quote/order entries on the Designated Sponsor account for that instrument group by the respective trader subgroup without re-evaluating the thresholds.

Members are informed about the counter hitting and a subsequent deletion of all the quotes/orders in the respective instrument group/trader subgroup combination via one single dedicated Matching Event message. In this message the ISIN of the first instrument of the affected instrument group will be referred to allow the members to identify the affected instrument group and herewith all the affected quotes/orders. The market reset indicator will be set to the new valid value indicating a deletion due to Market Maker Protection.

During auctions in Continuous Trading the monitoring of the threshold limits is suspended.

2.3 Extended Validity of Iceberg Orders

The validity for Iceberg Orders will be extended to allow a maximum of 360 calendar days (T+359). Iceberg Orders are then allowed as "Good for Day", "Good till Date" and "Good till Cancelled".

2.4 Reasons for Order Deletion

For particular order deletions triggered by the system additional reason codes in the deletion notification for orders entered via Enhanced Transaction Solution interface or FIX Gateway will be introduced.

During the batch run the following four reasons for order deletions might occur:

- Corporate Action: Next trading day is ex-capital adjustment for the instrument.
- Last Trading Day: Last trading day of the instrument was reached today.
- Expired Validity: Order is no longer valid for next business day.
- Change of Trading Parameters: A trading relevant instrument parameter has changed, e.g. the Trading Model.

Deletions during the online phase that receive an own reason code are deletions forced by

- Instrument Suspension: Trading is suspended e.g. because of ad-hoc information.

The respective reason codes are reflected in the report RPTTC540 Daily Order Maintenance accordingly.

3 Continuation of the Xetra Interface Strategy

Besides the functional changes to the whole Xetra system described above and their effect on the customer interfaces, some technical changes and interface extensions are planned with Xetra 14.0 to further support the interface strategy of Deutsche Börse as announced in September 2010.

3.1 Enhanced Transaction Solution Interface

The major changes to the Enhanced Transaction Solution interface done in addition to the impact from the functional changes outlined above are described in this section. Further changes and more details on all the enhancements can be found in the document "Enhanced Transaction Solution – Interface Specification Modification Announcement".

3.1.1 Issuer Specific Information (subscription)

For market model Continuous Auction with Market Maker, the "Issuer Specific Information" broadcast will also be offered via the Enhanced Transaction Solution interface. Thus, the full functionality in this market model will be available for Market Makers via the Enhanced Transaction Solution interface. Currently, the Issuer Broadcast is only available via the VALUES API interface.

To subscribe to the new stream the "subsMemberIssuerEventFlag" needs to be set during session logon. The Market Maker will then receive notification messages regarding potential executable volumes, instrument state changes and market reset events.

3.2 FIX Gateway

In the following chapters the major changes and enhancements to the Xetra FIX Gateway done in addition to the impact from the functional changes outlined above can be found. More details can be taken from the document "Xetra FIX Gateway - FIX 4.2 and 4.4 Modification Announcement".

3.2.1 Persistent Order Stream (Drop Copy)

With Xetra 14.0 it will be possible via FIX Gateway to receive all persistent orders of a Member via one back-office session. Currently, this functionality is only supported by the Enhanced Transaction Solution interface.

Drop copy functionality for the complete order history of persistent orders of a member of the current business day will be provided as an additional optional feature of the FIX Back Office session.

This also implies that members can choose to select in the member section (SAP CRM) if they want to receive this information on the Back Office session:

- *Trade Capture Reports (AE)* only or
- *Trade Capture Reports (AE) and Execution Reports (8)*

3.2.2 Network Authentication

With Xetra 14.0 the FIX Gateway will verify if a FIX session is initiated from a valid customer connection. The FIX Gateway will validate the subnet from where the FIX session is initiated during session logon. The FIX session logon (Logon (A) message) will be rejected by the FIX Gateway in case the subnet cannot be authenticated.

Customers need to provide up to 4 valid installations per FIX Session in the SAP CRM Member portal. Already existing FIX Sessions may need to be adapted by customers.

3.2.3 Simulation Enhancement

Currently the FIX Gateway is restarted every business day in simulation and the same business day in Xetra simulation may be applied to several calendar days.

With Xetra 14.0 the FIX Gateway in the simulation environment will restart every calendar day. The restart of the FIX Gateway on a calendar day basis in simulation aims to ease operating on customer side since standard FIX Engine handling on customer side is calendar day driven.

3.2.4 Inquiry of Stop Limit of a Trailing Stop Order

Members are increasingly using intelligent order types offered via FIX. Presently it is not possible for the Members to inquire the current Trailing Stop Limit of Trailing Stop Orders. Xetra Release 14.0 will enable inquiring the Trailing Stop Limit through an internet based solution.

More details will be available in the near future. For questions in advance please contact mail@scoach.com.

3.3 Enhanced Broadcast Solution Interface

The most important changes to the Enhanced Broadcast Solution interface are described in this chapter. Further changes and more details on all the enhancements can be found in the document "Enhanced Broadcast Solution – Interface Specification Modification Announcement".

3.3.1 Packet Header

3.3.2 Value of the template ID (TID) is changed to "32".Instrument Reference Data

The market maker protection flag (see above 2.2) will be available in the instrument reference data. It will be transported within the field "indicators" of the reference data message.

3.3.3 Delta/incremental message

The field "priceTypCod" in the sequence "EntriesTrade" will be moved into the embedded sequence "EntriesTradePrices". This allows assigning a price type to every single price in the sequence since they might result from different actions.

If a price within this sequence is an auction price, then it will be always the last entry in the list, and the number of the following prices is restricted to 19, instead of 20 in all other cases.

3.4 Xetra Market Data Interface

The most important changes to the Xetra Market Data Interface are described in this chapter. More details can be found in the document "Xetra Market Data Interface – Interface Specification Modification Announcement".

3.4.1 Packet Header

The template of the version message is increased by one, new is 36.

3.4.2 Price Without Turnover Message

The field "TradeCondition" is added to the template "Price Without Turnover Message" with Xetra 14.0. The value "V" in this field indicates prices determined in Special Auction. This is used e.g. for Federal Goverment Bonds when prices are determined with Bundesbank participation. The Special Auction was already introduced with Xetra 13.0.

3.4.3 Order Book Snapshot Message

With Xetra 14.0 the new field "RefreshIndicator" is added to the template "Order Book Snapshot Message". If this indicator is set, new values are sent within the respective snapshot and the data sent in this message is mandatory to use. Otherwise it can be discarded.

4 Technical Implications

Xetra Release 14.0 will be a mandatory release without backward compatibility.

Please be aware that all Members have to install the (update) kits on their existing and new MISS servers or workstations. By means of these kits, the Xetra Release 14.0 software with the latest version of the Xetra J-Trader GUI will be installed.

For Xetra Release 14.0, installation of GATE 3.5 is required, as has been for Xetra Release 13.0.

Existing own or third-party applications using VALUES API, Enhanced Transaction Solution interface, FIX Gateway, Enhanced Broadcast Solution interface or Xetra Market Data Interface have to be adjusted.