X-pand into the Future

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⚠ **High priority**

Introduction of new Eurex Trading Architecture in Q4/2012

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Content may be most important for:	**Attachments:**
Ü All departments	none

Summary:

Eurex is continuously improving and extending its exchange infrastructure. In 2012, Eurex will go a considerable step further by introducing a completely **new Eurex trading architecture** for derivatives trading.

Subject to the required legal approvals the production launch of the new Eurex trading architecture is scheduled for **December 3, 2012**, followed by a product migration phase during which products will be moved in a stepwise approach from the current Eurex® system to the new trading platform.

The new platform is designed to meet the highest demands for throughput, reliability and ultra-low latency and offers a number of functional enhancements and extensions. The new trading platform will also introduce a new interface landscape replacing the existing trading interfaces while proven design concepts will be kept.

This circular provides participants with information on the major concepts of the new Eurex trading architecture and the high-level implementation plan:

- Functional overview of the new trading platform
- New trading interface landscape
- Data centers and connectivity
- Simulation phases for the new trading platform
- Production launch, product migration topics
- Communication schedule

Introduction of new Eurex Trading Architecture in Q4/2012

1 Introduction

In 2006, Eurex started with the implementation of a new generation of socket-based interfaces, such as the Enhanced Broadcast Solution, the Enhanced Transaction Solution and the Enhanced Risk Solution. Implementation of these interfaces laid the foundation for a new interface landscape without the need for a MISS-based trading infrastructure and VALUES API.

In 2011, with Eurex Release 14.0, three additional interfaces were introduced, the Eurex FIX Gateway, the Eurex Market Data Interface and the Eurex Clearing FIXML Interface. These new interfaces together with the Common Report Engine and the WebTrading solution create a higher level of independence from the MISS infrastructure.

In 2012, Eurex will go a major step further by introducing the new Eurex trading architecture for derivatives trading. The new trading platform will be based on the technology used for the new trading system of the International Securities Exchange (ISE) which is known in the market for its high throughput and low latency processing.

Subject to the required legal approvals the production launch of the new Eurex trading architecture is scheduled for December 3, 2012. The new trading platform will be launched in phases in which products will be migrated in a stepwise approach from the current Eurex® system to the new trading platform. The product migration is expected to require three to six months.

The new Eurex trading architecture will completely replace the current Eurex® trading system and Eurex trading participants must migrate to the new platform to trade products moved to the new system.

A new interface landscape will be introduced with the new trading platform, replacing the existing interfaces. Legacy concepts such as the MISS infrastructure and VALUES API will no longer exist. Therefore, depending on the type of access currently used, considerable effort might become necessary for participants in 2012 to prepare for access to the new trading platform.

Eurex will provide participants with the opportunity to test access to the new trading architecture for Eurex during simulation phases prior to the production launch.

Eurex highly recommends that exchange participants start preparing for the new Eurex trading architecture early in 2012 and/or to contact their Independent Software Providers and Multi-Member Service Providers to evaluate the impact and to agree individual software test and migration strategies.

To ensure effective information distribution, we kindly ask participants to register contact persons in the Member Section on www.eurexchange.com for the implementation of the new Eurex trading architecture. Please register both a project coordinator and a technical contact for the Eurex Technology Roadmap.

Eurex is committed to providing participants with information updates throughout the migration process in order to support adequate planning and to ensure successful transition to the new trading architecture for Eurex. Documentation and webinars, complemented by workshops for participants, will be offered in the course of the system implementation.

In parallel to this circular, a set of documents describing functional and technical aspects of the new trading platform have been made available. For a detailed overview of the planned communication for the implementation of the new trading platform, please see the Communication schedule in chapter 4.

2 Functional and technical overview

The new trading architecture for Eurex will mark an important milestone in Deutsche Börse Group's IT strategy. The architecture combines state-of-the-art technology both on a hardware and software level. This includes a highly flexible operating system, an internal high-performance messaging architecture for minimum latency, high-speed communications and reliable database systems.

With its flexible design, the new trading platform will provide a wide range of benefits for participants:

- Enhancements in functionality, e.g. for strategy and spread trading.
- Massively reduced transaction latency and substantially increased message throughput rates.
- Improved standardization and backward compatibility of new trading interfaces to reduce participants' efforts for software updates in the future.
- Leverage existing connectivity and co-location concepts.

The entire new trading platform is not only designed for highest performance in the current environment, but is also best suited to cover increasing requirements in the future thanks to its inherent capabilities for highest scalability.

2.1 Eurex trading and clearing services

The new Eurex trading architecture will replace the current Eurex® system for trading services, whereas Eurex Clearing will continue to use the current system. Technical separation of the two systems will simplify the development of extensions and enhancements in the future, enabling Eurex to react quickly to future market demands.

To use both Eurex trading and clearing services, participants require access to both systems:

- For on-exchange trading of products, access to the new trading platform will be necessary.
- For clearing purposes (trade maintenance, position management, etc.) access to the current Eurex® system must be maintained.
- EurexOTC Trade Entry services as well as OTC trade reporting will continue to be processed by the current Eurex® system. However, OTC trades can also be entered in the future using the new Eurex Trader GUI, but no data related to OTC transactions will be delivered by the new trading platform (for instance via the new Eurex Enhanced Market Data Interface).

2.2 Major functional changes

A number of functional concepts will be streamlined in the new Eurex trading architecture, allowing for faster reaction to market demands and more flexible handling of market requirements in the future, for example addition of new product and instrument types or integration of potential new markets. The most important functional changes include:

- Improvement of options strategy concepts for on-exchange trading by extending the existing concept of template-based strategies (standard options strategy), providing more flexibility in the creation of strategies (non-standard options strategy).
- Trading of all possible calendar spreads for futures products and a fully integrated spread matrix with implied-in and implied-out matching will be supported.
- Unified market model concept for options and futures enabling simplified trading across different options and futures markets. For instance, the new concept offers identical Market Maker protection functions for both options and futures products.
- Definition of instrument statuses in order to allow more granular control of the market. Please note that the term "instrument" is used for both options series and futures contracts on the new platform.

- Introduction of new order types, such as the stop limit order and the book-or-cancel order, and a more flexible assignment of order types to specific markets.
- New entitlement concept with pre-defined roles will replace the existing concept of Resource Access Levels (RAL) to support a simplified and streamlined assignment of rights to users.
- New hierarchical structure of participants and business units facilitates improved logical separation of trading units within a participant organization in the future.

Eurex does not intend to activate the majority of new or extended functionality the moment the new trading platform will be launched in Q4/2012. These functions will be introduced over time, during or after the product migration period. A more detailed introduction schedule for functionality will be provided at a later date.

However, fundamental functional changes will be active as of the launch date, as the underlying concepts are inherent to the new Eurex trading architecture. In particular, the new entitlement concept, as outlined above, will impact participants starting with the production launch.

2.3 New trading interface landscape

Access concepts for the new Eurex trading architecture will be similar to the current system: Gateways will serve as entry points for transactions, market and reference data will be distributed using multicast. In parallel, Eurex will continue to provide a GUI solution for participants. However, the new trading platform will introduce new message-based interfaces for participants, replacing or extending the existing interfaces.

Please note that the new trading platform will not operate with the common MISS infrastructure and that VALUES API will no longer be supported.

The new interfaces will be based upon industry standards such as FIX and FAST, facilitating faster implementation by participants. In addition, Eurex intends to ensure a high degree of backward compatibility for the new interfaces, whereby participants will be able to leave their trading applications unchanged in the future if they do not intend to use functionality introduced in future Eurex releases.

The following figure illustrates the interface landscape of the new Eurex trading platform.



2.3.1 Access to GUIs and reports

Before, during and after the introduction of the new Eurex trading architecture, Eurex will continue to provide a GUI solution for the participants. Reports and files will be distributed via the existing Common Report Engine.

- Participants who are using the current trading GUI of Eurex can choose to use the new Eurex Trader GUI for trading purposes and the Eurex Admin GUI for administration services. The new GUI solutions will be based on web technology and local installation of front-end software is not necessary. Access will be possible via Internet and leased line connections.
- The Common Report Engine, introduced with Eurex Release 13.1, will be the sole source for end-of-day trading reports and files in the future, as the MISS infrastructure will not be part of the new trading platform. All participants who have already established access to the Common Report Engine can continue to use this access for reports and files of the new trading architecture.

2.3.2 Transaction interfaces

All transaction interfaces of the new trading platform will be message-based. Participants currently using VALUES API for their trading applications must replace it with the new message-based interfaces.

- The Eurex FIX Gateway was introduced with Eurex Release 14.0. This interface may be suitable for those participants who focus on trading and where quoting functionality is not necessary. The Eurex FIX Gateway supports the FIX standard version 4.2 and 4.4. Participants who are already familiar with the current Eurex FIX Gateway should expect minor modifications to support the additional functionality of the new trading platform. The Eurex FIX Gateway will connect to both the new trading platform and the current Eurex® system; however, separate FIX sessions are necessary to connect to each system.
- The new Eurex Enhanced Trading Interface (Eurex ETI) will replace the existing and technically similar Eurex Enhanced Transaction Solution for full trading and quoting functionality. This new interface is ideally suited for participants that are currently using the Eurex Enhanced Transaction Solution. Although both the new Eurex Enhanced Trading Interface and the current Eurex Enhanced Transaction Solution are message-based, participants must expect significant differences in both the message layout between the new and the existing interface and the session and gateway concepts.

2.3.3 Market and reference data

Market and reference data will be provided using multicast interfaces. As VALUES API will no longer exist, participants using VALUES API must migrate to the new multicast interfaces to receive market data.

- The Eurex Market Data Interface (Eurex MDI) for netted price-level aggregated market data, introduced with Eurex Release 14.0, will continue to exist on the new trading platform. However, participants should expect some conceptual changes in the new version, such as a new instrument reference data structure, new messages, inclusion of additional fields and different multicast IP addresses.
- The new Eurex Enhanced Market Data Interface (Eurex EMDI) will be the sole source for un-netted price-level aggregated market data. The interface will replace the current Eurex Enhanced Broadcast Solution. The new interface will use similar message layouts to the Eurex Market Data Interface. However, participants must expect major conceptual changes and different message layouts for the current Eurex Enhanced Broadcast Solution.
- The new trading platform will introduce a new interface for reference data, the Eurex Reference Data Interface (Eurex RDI). This interface will deliver reference data in message format.
- Alternatively, Eurex will provide a file-based solution for start-of-day reference data as well as intra-day updates.

Please note: The trading and market data interfaces of the new Eurex trading architecture are not identical with interfaces used by ISE.

2.4 Data centers, co-location and connectivity

The new trading platform will continue to follow the concept of a primary and a disaster recovery data center. Eurex will continue to use the existing data centers for the new trading platform. Participants who are currently taking advantage of the Eurex co-location services do not need to move their trading infrastructure to another facility in order to be closest to the matching engines of the new trading platform.

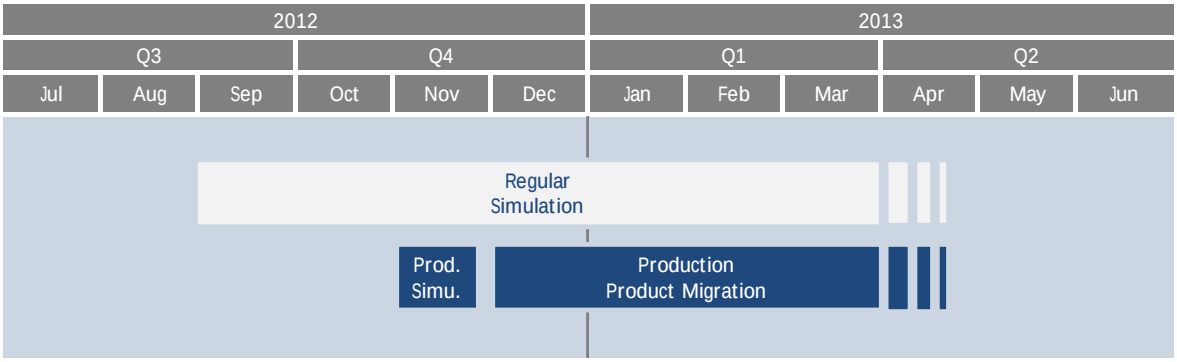
All participants, whether they use the Eurex co-location service or not, should expect increased network bandwidth requirements for receiving market data, in particular once the majority of products has been moved to the new trading platform. Eurex will provide details about the connectivity requirements at a later date.

3 Implementation schedule

Subject to the required legal approvals the production launch of the new Eurex trading architecture is scheduled for December 3, 2012. As of this date, products will be moved consecutively from the current Eurex production system to the new trading platform in production. The product migration is expected to take between three and six months.

As known from previous software releases, Eurex will provide a dedicated regular simulation environment for participants to support comprehensive testing of the new Eurex trading architecture. In addition, a simulation phase called “production simulation” will be run on the future production platform in order to enable testing of connectivity and functionality and for a basic functional set-up in the real production environment.

The following figure gives an overview of the schedule for the simulation and production launch phases.



Please note that all dates are preliminary and subject to change.

3.1 Regular simulation

The regular simulation period is currently scheduled to start on September 3, 2012. For regular simulation, Eurex will provide a dedicated environment running the new Eurex trading architecture in order to give participants the opportunity to perform comprehensive testing of their trading applications, independent from the Eurex production environment. The regular simulation environment will be available prior to the production simulation start and will continue to be accessible to the participants during the product migration phase.

3.2 Production simulation

The production simulation phase, currently scheduled to start approximately one month prior to the production launch, will enable participants to access the new production environment prior to the production launch. Eurex intends to test live operations during this phase together with the participants. Participants will benefit from this period through testing of their applications in the real production environment.

3.3 Product migration

During the product migration period, when products are moved consecutively from the current Eurex® production system to the new trading platform in production, a specific product will only be active in one system. Any product activated in the new trading platform will no longer be tradable (on-exchange) in the current Eurex® production system.

Eurex intends to start with a particular set of products when launching the new trading platform. Remaining products will be migrated in a stepwise approach. A detailed migration schedule for the products will be provided prior to the production launch date.

Exchange participants should consider the following points for the product migration period:

- Participants will be required to connect to both the new trading platform in production and to the current Eurex® production system in order to ensure that the whole range of Eurex products can be traded during the product migration period.
- The new GUIs and interfaces will be dedicated to the new trading platform and existing interfaces and GUIs can only be used to access the current Eurex® system, with the following exceptions:
  - The Eurex FIX Gateway will connect to both the new trading platform and the current Eurex® system. However, separate FIX sessions for each system will be required.
  - The Common Report Engine will provide reports for both the new trading platform and the current Eurex® system separately.
- Once the product migration is complete, access to the current Eurex® production system will no longer be required for on-exchange trading.

Please note: Eurex Clearing services and trade maintenance for products moved to the new trading platform still require access to the current Eurex® production system (e.g. via the Eurex Clearing FIXML Interface). This applies also to EurexOTC Trade Entry services, except for using the new Eurex Trader GUI for OTC.

3.4 Migration of trader accounts

Existing trader accounts will be migrated to the new trading platform. The migration process will transform the user rights (RAL) of the current Eurex® system to user roles of the new trading platform.

Participants are required to validate the results of the migration process and, if necessary, to modify the role assignments to meet their individual requirements. More details about the new entitlement structure and the migration approach will be published in separate documents prior to the start of the simulation phases.

4 Communication schedule

The following table provides an overview of the documentation to be delivered by Eurex in the course of the implementation of the new Eurex trading architecture.

Please note that the list of documents is preliminary. Should the necessity for additional documents or document updates become obvious during the implementation, Eurex will deliver them accordingly.

New Eurex Trading Architecture	Q1 2012			Q2 2012			Q3 2012			Q4 2012		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Initial Communication												
Functional and Interface Overview		u										
Eurex FIX Gateway – Introduction		u										
Eurex Enhanced Trading Interface - Introduction		u										
Eurex Market Data and Reference Data Interfaces - Introduction		u										
Documents for preliminary information												
Functional an Interface Overview (update)				u								
Eurex Trader/Admin GUI - Introduction				u								
Eurex FIX Gateway version 4.2 and 4.4 – Manual (preliminary)				u								
Eurex Enhanced Trading Interface – Manual (preliminary)				u								
Eurex Market and Reference Data Interfaces – Manual (preliminary)				u								
Documents for regular simulation												
Eurex Functional Reference							u					
Eurex FIX Gateway version 4.2 and 4.4 – Manual (simulation)							u					
Eurex FIX Gateway version 4.2 and 4.4 – Fiximate (simulation)							u					
Eurex Enhanced Trading Interface – Manual (simulation)							u					
Eurex Market and Reference Data Interfaces – Manual (simulation)							u					
Eurex Trading + Admin GUI – Manual (simulation)							u					
Eurex Trading + Admin GUI – Installation Manual (simulation)							u					
Eurex XML Report Reference Manual (simulation)							u					
Eurex Network Access Manual (simulation)							u					
Eurex User Setup Manual							u					
Eurex Member/User Migration Guide (simulation)							u					
Eurex Regular Simulation Guide							u					
Eurex Functional / Technical Release Notes (simulation)							u					
Eurex List of known limitations for simulation									u			
Documents for production simulation and the production launch												
Eurex FIX Gateway version 4.2 and 4.4 – Manual (production)										u		
Eurex FIX Gateway version 4.2 and 4.4 – Fiximate (production)										u		
Eurex Enhanced Trading Interface – Manual (production)										u		
Eurex Market and Reference Data Interfaces – Manual (production)										u		
Eurex Trading + Admin GUI – Manual (production)										u		
Eurex Trading + Admin GUI – Installation Manual (production)										u		
Eurex XML Report Reference Manual (production)										u		
Eurex Network Access Manual (production)										u		
Eurex Member/User Migration Guide (production)										u		
Eurex Functional / Technical Release Notes (production)										u		
Eurex Production Simulation Guide										u		
Eurex Production Introduction/Rollout Guide										u		
Eurex Product Migration Plan										u		
Eurex Connection Test Information											u	
Eurex List of known limitations for production												u

5 Contacts

In case of questions or for further information, please contact the Markets Services Team, on tel. +49-69-211-1 31 18 or via e-mail to: technology.roadmap@eurexchange.com. Alternatively, please contact your Technical Account Manager using your VIP number or the Eurex Customer Technical Support on tel. +49-69-211-1 12 00 or via e-mail to: cts@deutsche-boerse.com.

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