X-pand into the Future

eurex *circular 183/11*

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Eurex Technology Roadmap and Eurex Release 14.0: Extended Information

Related Eurex circular: 155/11

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

Summary:

Together with the implementation of Eurex Release 14.0, which is scheduled for **November 7, 2011**, the Eurex Exchanges will lay the foundations for the next phase of its Technology Roadmap pursuing the Deutsche Börse Group IT strategy for the implementation of a new trading and clearing infrastructure. The new infrastructure will ultimately replace VALUES API and the MISS-based architecture in the mid-term.

The next phase of the Eurex Technology Roadmap consists of a number of components which not only include technical and functional changes to the existing Eurex® system and its interfaces but also introduces new interfaces, additional connectivity options and also encompasses infrastructure changes. In this circular Eurex provides Members with more detailed information on the following roadmap components:

- Decommissioning timeline for trading and clearing functionality from VALUES API
- Eurex interface and service portfolio
- Extension of the Eurex network connection portfolio
- Interface pricing scheme
- Consolidation of the Eurex data centres and co-location

The primary objectives of the next phase of the Eurex Technology Roadmap are to facilitate a smooth migration to the new trading and clearing infrastructure. The new concept for Member interfaces not only provides a more flexible access to the Eurex® system in terms of connectivity options but will also enable a seamless integration of the new interfaces into Members' existing trading and clearing system landscape.

The use of new state-of the-art hardware for the Eurex matching engines and the implementation of a new high-speed network infrastructure in the co-location facility will provide latency-sensitive applications with unprecedented access to the Eurex® trading system and significantly improve overall latencies.

Eurex Technology Roadmap and Eurex Release 14.0: Extended Information

1. Decommissioning of trading and clearing functionality from VALUES API

In 2006 Eurex began with the implementation of a new generation of high-performance socket-based interfaces providing basic trading functionality for order and quote management "Enhanced Transaction Solution" and market data distribution "Enhanced Broadcast Solution" without the necessity for the VALUES API and/or MISS infrastructure. Since their initial introduction, Eurex has continued to enhance these interfaces providing new trading functionality based on them. In addition, a real-time risk data distribution service "Enhanced Risk Solution" has also been provided as a separate socket-based interface.

Together with Eurex Release 14.0, Eurex will introduce two further trading interfaces "Eurex FIX Gateway" and "Eurex Market Data Interface", and a new clearing interface "FIXML Clearing API". The purpose of these interfaces is to facilitate complete replacement of the current VALUES API interface and the MISS infrastructure in the medium term.

To ensure a smooth migration to the new interfaces a step-by-step decommissioning of both trading and clearing functionality from VALUES API will begin shortly after the introduction of Eurex Release 14.0. The roadmap for the decommissioning of both trading and clearing functionality is as follows:

1.1. Trading functionality

Eurex plans to decommission the trading functionality from VALUES API in three separate phases. The exact dates will be provided at a later date.

Phase 1

After the introduction of Eurex Release 14.0, the Eurex® system will no longer send a quote confirmation broadcast for single quote entry or deletion for options and price time futures. In Q1/2012 the decommissioning of the VALUES API quote maintenance functionality is planned. Some examples of the requests to be decommissioned include "Enter Single/Double Leg Quote", "Delete Single/Double Leg Quote", "Enter Mass Quote" and "Delete Mass/All Quotes". A full list of the requests to be decommissioned will be provided at the appropriate time.

All Members making use of the quote maintenance functionality either via a VALUES API-based third-party vendor application or an in-house application will be required to migrate to the Enhanced Transaction Solution interface. Members using third-party vendor applications should contact their vendors concerning the availability of an Enhanced Transaction Solution-based solution.

Please note that the quote maintenance functionality via the @X-ceed Trading GUI and quote request functionality via the GUI and via VALUES API is not affected.

Phase 2

In the second phase scheduled for Q4/2012, decommissioning of further trading functionality such as order maintenance, is envisaged. It includes but is not limited to the requests "Enter Single/Double Leg Order" or "Modify Single/Double Leg Order". Similar to the decommissioning of the quote maintenance functionality, a full list of requests to be decommissioned will be provided at the appropriate time. All Members making use of the order maintenance functionality either via a VALUES API-based third-party vendor application or an in-house application will be required to migrate to either the Enhanced Transaction Solution interface or the Eurex FIX Gateway.

Please note that the order maintenance functionality via the @X-ceed Trading GUI will not be affected.

During Phase 2, Eurex also plans to decommission distribution of trading and clearing reports to the MISS-based report nodes. From this point onwards, trading and clearing reports will only be available via the Common Report Engine which was introduced in April 2011 with Eurex Release 13.1. More details regarding this service can also be found within this circular.

Following the completion of Phase 2, trading via VALUES API-based third-party vendor applications or in-house applications will no longer be possible.

Phase 3

In the third and final phase scheduled for Q2/2013, full decommissioning of VALUES API and the MISS infrastructure is planned. From this point onwards, access to the Eurex® system will only be possible via the socket-based interfaces and/or via the WebTrading service offered by Eurex. More details regarding this service can also be found within this circular.

1.2. Clearing functionality

With Eurex Release 14.0, Eurex Clearing, the leading European clearing house for securities and derivatives transactions, will offer a new open standard interface for clearing functions and OTC trading "FIXML Clearing API".

The FIXML Clearing API will provide Eurex Clearing Members with a highly flexible, market-standard compliant and cost-effective way to enter, access and modify clearing data. Based upon and compliant to the widely used FIX standard, the interface will allow Members to choose and deploy their own operating systems and access interfaces. A message-independent technical layer will be used. For the initial introduction, the industry standard **A**dvanced **M**essage **Q**ueuing **P**rotocol (AMQP) will be the basis.

The FIXML Clearing API will contain functions which are currently frequently used by automated Member applications. Together with Eurex Release 14.0, the technical infrastructure for the new clearing interface will be introduced together with the FIXML support for the most frequently used clearing-related transactions. In May 2012, Eurex intends to introduce support for further transactions used in a straight-through processing mode. To ensure timely and seamless migration towards the future technology, Eurex strongly advises Members to start the migration process to the new FIXML Clearing API by this time at the latest.

Introduction of the new interface enables the replacement of the current VALUES API implementation. Step-by-step decommissioning of the VALUES API interfaces will begin in Q2/2012, when the following services and functionality will have been be removed:

- Intra-day risk report distribution (i.e. RPTCI042)
- The VALUES API-based interface for risk management
- Collateral management service-related VALUES API requests.

Decommissioning of VALUES API-based services for clearing functionality is planned to be finalized in Q2/2013. Further details about the new FIXML Clearing API have been provided in Eurex circular 155/11 (Eurex Release 14.0: Preliminary Documentation).

The following table provides a complete overview of the timeline for the individual decommissioning phases for both trading and clearing functionality in Eurex.

Decommissioning of Functionality from VALUES API	Q4/2011	Q1/2012	Q2/2012	Q3/2012	Q4/2012	Q1/2013	Q2/2013
Phase 1							
Decommissioning of the quote confirmation broadcast on single-leg quote entry/deletion for options and price-time futures	☑						
Decommissioning of Quote Maintenance functionality from VALUES API		☑					
Phase 2							
Decommissioning of Intra-day risk report distribution (i.e RPTCI042)			☑				
Decommissioning of the VALUES API-based interface for risk management and collateral management related VALUES requests			☑				
Decommissioning of further trading functionality (e.g. Order Maintenance)					☑		
Decommissioning of trading and clearing report distribution via the MISS					☑		
Phase 3							
Full decommissioning of VALUES API trading, clearing and administration functionality							☑
Full decommissioning of the MISS infrastructure							☑

2. Eurex interface and service portfolio

To support the decommissioning of trading and clearing functionality from VALUES API and to enable participants to fully decommission the MISS-based architecture, Eurex will extend its existing portfolio of socket-based interfaces and services. A complete overview of these interfaces and services is provided below.

2.1. Eurex Release 14.0 – New socket-based interfaces

In this section an overview of the new interfaces to be introduced with Eurex Release 14.0 is provided. For full details of the functionality provided by these interfaces, please refer to the Functional Release Notes, Technical Release Notes and the Member Interface Specification published in the Member Section of the Eurex website under the path:

www.eurexchange.com > Member Section > Releases > Eurex 14.0

For easier access to the documents, click on one of the following links:

https://www.eurexchange.com/members/releases/eurex14/software_changes_en.html

https://www.eurexchange.com/members/releases/eurex14/manuals_technical_en.html

2.1.1. Eurex Market Data Interface

Eurex Release 14.0 will introduce a new Market Data Interface for the dissemination of price level aggregated, netted depth data via multicast. The netted market data interface will be encoded using the FIX Adapted for Streaming (FAST) protocol and will have low bandwidth requirements. The market data provided will be the same as the market data available via VALUES API, that is, order book depth of 10 for some futures and top of book for all other futures and all options products. Cross and quote request information will also be included in the new interface.

Please note that to ensure low bandwidth requirements, the Eurex Market Data Interface will not provide reference data, in contrast to the Enhanced Broadcast Solution. Instead report TA111 can be used as an appropriate reference data source.

2.1.2. Eurex FIX Gateway

The FIX protocol has become the new standard of the financial industry for pre-trading and trading communication.

Together with Eurex Release 14.0, Eurex will offer a standard FIX interface “Eurex FIX Gateway” supporting FIX versions 4.2 and 4.4.

The Eurex FIX Gateway will mainly support the following three functional blocks:

- Order handling
- Strategy creation
- Trade confirmation at the member level (back-office session)

Participants will use dedicated FIX sessions in the context of order handling (including strategy creation) and back-office.

2.1.3. FIXML Clearing API

To enable Eurex Members to access the relevant post-trade services independent of the MISS-based Member architecture, an optional FIXML-based API will be developed with Eurex Release 14.0. The new FIXML Clearing API will encompass those VALUES API requests which are currently accessed by Eurex Members or third-party software vendors via automated applications. The new FIXML connection will use FIXML-based messages over the industry standard AMQP, introduced with the existing Enhanced Risk Solution interface.

2.2. Existing socket-based interfaces

In addition to the new interfaces to be provided with Eurex Release 14.0, existing socket-based interfaces will further be enhanced. More details of these enhancements can also be found in the Functional and Technical Release Notes. An overview of the existing interfaces is provided below:

2.2.1. Enhanced Broadcast Solution

The Enhanced Broadcast Solution is a high-performance, market information broadcast interface. This service features the dissemination of un-netted public market data using the IP multicast protocol. The interface offers:

- Order book depth for options products (up to five prices)
- Order book depth for futures products (up to twenty prices for benchmark futures)
- Individual subscription model allowing the selection of product groups
- Trade volume reporting that includes reporting of single, double leg and strategy trades
- Reference data

2.2.2. Enhanced Transaction Solution

The Enhanced Transaction Solution provides Members with faster, streamlined access to the Eurex® system for high-frequency trading strategies, focusing on core trading activities like order and quote entry as well as maintenance functionality.

The Enhanced Transaction Solution is a session-oriented interface, which means that a session is the basic context of the interaction with the Eurex® system. A session is initiated when an application connects and continues until the connection is interrupted. Several trader subgroups may share a single session, but any session may only be used once. A given Member has a set number of sessions (in future a maximum of 50), depending on his technical requirements.

The Enhanced Transaction Solution allows usage of so-called “order attributes”. Members can select whether their orders will be backed up in the event of a system failure. Persistent orders will stay in the order book after a trading interruption, whereas non-persistent orders will be deleted automatically.

Trading functionality provided with the Enhanced Transaction Solution:

- Enter, modify, inquire and delete orders (persistent and non-persistent) and quotes for:
  - Options (single leg)
  - Futures (single leg)
  - Futures time spreads
  - Option strategies
- Mass quote entry function also for strategies
- Mass delete all orders (persistent and non-persistent) and quotes
- Provision of order-/quote-related status data (i.e. execution)
- Bi-directional heartbeat at a session level
- Setting/inquiry of Market Maker protection limits

2.2.3. Enhanced Confirmation Solution

The Enhanced Confirmation Solution provides Members with a means to receive confirmation information independent from the MISS infrastructure. Members are able to subscribe to streams using a broadcast session, just as they are able to subscribe to the streams via the MISS. The FIX-compatible interface is based on similar technology as the other optional socket-based interfaces offered by Eurex.

From Eurex Release 14.0 onwards, a generic subscription mechanism enables Members to subscribe to all trade confirmation broadcasts for which they are eligible with a single request. Clearing Members can use this mechanism to subscribe to the broadcasts for their Non-Clearing Members and other Members for whom they are authorized to receive the broadcast.

The Enhanced Confirmation Solution is focused on recoverable trade confirmations. Please do not use the interface to receive position changes, not due to trades in the order book, e.g. give-up. In case you are interested in a socket interface delivering full position transaction information (e.g. OTC trades, trade adjustments or position adjustments) please use the FIXML Clearing API.

2.2.4. Enhanced Risk Solution

The Enhanced Risk Solution enables Members to receive their intraday and, where applicable, end-of-day risk and position data in real-time allowing them to monitor developments in risk as they happen. For all Member types, including NCMs, the Enhanced Risk Solution interface provides an important additional tool which can either be used independently or in conjunction with existing in-house risk management systems to monitor risk exposure.

The Enhanced Risk Solution also enables very efficient use of collateral and can provide indications of intraday margin calls as risk managers can monitor margin surpluses/shortfalls in real time.

The Enhanced Risk Solution interface uses FIXML-based messages over the industry standard AMQP.

2.3. Additional services

Besides support for the front-end components of exchange applications such as the @x-ceed trading GUI or VALUES API-based third-party applications, the MISS infrastructure also provides the basis for transfer of trading/clearing reports and clearing-related files such as theoretical price files.

To continue to provide participants with access to the Eurex GUIs either for trading, clearing or administrational purposes and to provide participants access to trading/clearing reports and clearing-related files without the necessity for a MISS server, additional services have been established.

2.3.1. WebTrading

WebTrading offers internet-based access to Deutsche Börse Group's trading systems via the Eurex Trading and Clearing GUIs from any location by means of a standard web browser thereby removing the necessity for a MISS server, software installation by customers and any system-administrative tasks. The WebTrading solution plays an important role in Deutsche Börse Group's IT strategy for the future.

WebTrading is based on state-of-the-art network and hardware technology and internet bandwidth of 1 Mbit/s is sufficient for low to average trading volume. High security levels are achieved by means of a two-tiered authentication procedure with a token login and trading system login. 1024 bit connection encryption guarantees the highest possible level of security.

File import/export between trading application screens and a local drive is supported for file up-/downloads in TXT, XLS or CSV format and local printing directly from the trading application is supported.

Receipt of reports via the Internet and SFTP/certificate (to static IP-address or hostname) is also provided as part of the current WebTrading service. Clearing-related files such as theoretical price files, are not available. Instead, these files can be retrieved via the Common Report Engine. Please note that distribution of reports via the WebTrading service will ultimately be replaced by the Common Report Engine service.

2.3.2. Common Report Engine

The Common Report Engine is a service available since the introduction of Eurex Release 13.1 enabling Members to retrieve trading/clearing reports and clearing-related files without the necessity for maintaining a MISS infrastructure. As a result, Members are free to select their own hardware platform and operating system.

The Common Report Engine also plays an integral role in Deutsche Börse Group's IT strategy and system landscape and represents the mechanism by which reports and files are disseminated to Members, currently as an optional service, and in the future as the sole mechanism for report/file distribution.

All reports are generated automatically for all Members without the necessity for Members to select the reports in advance. Compared to the current MISS-based service, a history of at least ten business days is available on the server.

The Common Report Engine can be accessed via Internet and/or leased line connection thereby providing Members with the flexibility to access the Common Report Engine from a variety of different locations. Security of data is ensured via SSL, Members need to provide a dedicated IP-address and certificate to access their reports.

Please note that public files such as theoretical price files will be available via the Common Report Engine with Eurex Release 14.0 from November 2011 onwards. As the Common Report Engine will be the sole mechanism for report/file distribution following the decommissioning of the MISS, Eurex strongly recommends Members to start their migration activities to this service with Eurex Release 14.0.

3. Extension of the Eurex network connection portfolio

To provide Members with the maximum flexibility and efficiency with the implementation of multiple connections to Eurex and to ease migration to the new interfaces, Eurex will provide Members with the ability to reuse their current VALUES connectivity.

From July 2011 onwards, Eurex Members will be able to convert their existing dedicated 1 Mbit/s and/or 10 Mbit/s VALUES API connectivity (either leased line or Internet) to a **Multi-Interface Channel** at no additional cost. The conversion can be ordered via the Tickets and Requests service in the Member Section of the Eurex website under the path:

www.eurexchange.com > Member Section > Technical Services

For easier access, click on the following link:
https://business.eurexchange.com/irj/portal/

Please note that for technical reasons a Multi-Interface Channel can only be configured on dedicated leased lines (non-consolidated) and internet connections. Logical channels on a consolidated bandwidth connection cannot be converted.

The Multi-Interface Channel will provide access to the following interfaces:

- Market Data Interface
- FIX Gateway
- MISS/VALUES
- Enhanced Transaction Solution / Enhanced Confirmation Solution
- FIXML Clearing API

To control the network performance, the “traffic shaping” quality of service mechanism will be applied to Multi-Interface Channels. Following the conversion of an existing 1 Mbit/s and/or 10 Mbit/s connection, Members will be required to perform a separate connection test.

Members making use of the Multi-Interface Channel must ensure that sufficient bandwidth is available to accommodate the individual interfaces required and also ensure that the interfaces do not have a negative impact on one another (e.g. via simultaneous subscription to broadcasts via the Market Data Interface and VALUES API).

Besides the existing leased-line connectivity options, Eurex will also provide additional bandwidth options of 2 Mbit/s (Europe) and 1.5 Mbit/s (USA) to its connectivity portfolio to provide further capacity for the definition of a Multi-Interface Channel. For these new connection alternatives additional monthly charges will apply. Dedicated 1 Mbit/s / 10 Mbit/s VALUES connectivity will no longer be provided in the future. All new 1 Mbit/s, 2 Mbit/s (Europe), 1.5 Mbit/s (USA) and 10 Mbit/s leased-line connectivity will be provided on the basis of a Multi-Interface Channel.

In addition to the Multi-Interface Channel, which provides access to the five above-mentioned interfaces via dedicated leased lines, the channel concept will also be applicable for a **FIX Channel**. In contrast to the Multi-Interface Channel, the FIX Channel can only be provided on a consolidated bandwidth connection, and the interfaces the FIX Channel provides access to are limited to the FIX Gateway, VALUES and FIXML Clearing API interface.

Please note that the consolidated bandwidth connection is also referred to as the Enhanced Broadcast Solution connection.

The following table provides an overview of the Eurex connectivity options:

Network Connection Options	Available Bandwidth	Dedicated Leased Line Connection	Consolidated Bandwidth Connection	Internet
Eurex Multi-Interface Channel • Enhanced Transaction Solution / Enhanced Confirmation Solution • FIX Gateway • FIXML Clearing API • Market Data Interface • VALUES API	1 Mbit/s; 1.5 Mbit/s (USA); 2 Mbit/s (Europe); 10 Mbit/s	✓	×	✓ (1 or 2 Mbit/s)
Eurex FIX Channel • FIX Gateway • FIXML Clearing API • VALUES API	1 Mbit/s; 2 Mbit/s; 10 Mbit/s	×	✓	×
Enhanced Transaction Solution / Enhanced Confirmation Solution	1 Mbit/s	×[1]	✓	×[1]
Enhanced Transaction Solution / Enhanced Confirmation Solution	10 Mbit/s	×[1]	✓	×
Enhanced Transaction Solution (co-location only)	10 Gbit/s	✓	×	×
Enhanced Broadcast Solution (non Proximity)	10-30, 50-70 & 600 (Lon. only) Mbit/s	✓	✓	×
Enhanced Broadcast Solution (Proximity)	10-30, 50-70, 100, 120, 600 Mbit/s and 1 Gbit/s	✓	✓ (except 1 Gbit/s)	×
Enhanced Broadcast Solution (Co-location only)	10 Gbit/s	✓	×	×
Enhanced Risk Solution	1 Mbit/s	✓	×	✓

×[1] Enhanced Transaction Solution services with a bandwidth of 1 or 10 Mbit/s via a dedicated leased line connection will be provided on the basis of a Multi-Interface Channel.

Please note that the technology to be chosen for the dedicated leased line connection (non-consolidated) will be either E1 (2 Mbit/s in Europe), T1 (1.5 Mbit/s in USA) or Ethernet, in accordance with the required bandwidth and the availability of data communication circuits.

4. Interface pricing scheme

To coincide with the introduction of the new interfaces and extension of the connection portfolio, changes to the pricing model for the technical connection to Eurex is required. Whilst the prices for existing connections remain unchanged, additions to the current price list for the introduction of the additional 2 Mbit/s (Europe), 1,5 Mbit/s (USA) and 10 Gbit/s cross connects (co-location only) are required. Additionally, changes to the session pricing for the Enhanced Transaction Solution interface will be made and the session pricing for the FIX Gateway will be introduced.

Please note that all modified and new prices, as mentioned in this circular, will be valid as of October 2011. A modified price list to the “Agreement on the technical connection and the utilization of the Electronic Trading System Eurex” will be provided with respective lead time.

4.1. Connection to the Eurex Exchange via a Multi-Interface Channel

For the connection to Eurex via a Multi-Interface Channel, Members can choose between a bandwidth of either 1 Mbit/s, 1.5 Mbit/s (USA only), 2 Mbit/s (Europe only) or 10 Mbit/s. For the different connection alternatives the following monthly charges apply:

- Each 1 Mbit/s leased-line: **EUR 750** for the first two connections and **EUR 2,000** for each additional connection (unchanged)

- Each 1,5 Mbit/s (USA only) or 2 Mbit/s (Europe only) leased-line: **EUR 1,250** for the first two connections and **EUR 2,500** for each additional connection
- Each 10 Mbit/s leased-line: For 10 Mbit/s Enhanced Broadcast Solution connections (consolidated bandwidth connection), please see the document "Agreement on the technical connection and the utilization of the Electronic Trading System Eurex" available on the Eurex website under the path:

  www.eurexchange.com > Documents > Forms > Trading Derivatives > Single Forms > Membership > Member Application

  For direct access to the document, please click on the following link:
  http://www.eurexchange.com/documents/forms/trading_derivatives/single/membership/memberapplication_en.html

- Each 1 Mbit/s Internet Connection: **EUR 500** (unchanged)
- Each 2 Mbit/s Internet Connection: **EUR 750**

4.2. FIX Channel on consolidated bandwidth connection

For the connection to Eurex via the Eurex FIX Channel based on a consolidated bandwidth connection, Members can choose between different channel capacities. For the alternatives, the following monthly charges apply[1]:

- Each 1 Mbit/s channel: **EUR 700**
- Each 10 Mbit/s channel: **EUR 1,400**

4.2.1. Session pricing for the Enhanced Transaction Solution and the Eurex FIX Gateway

To provide Members with a higher degree of flexibility in choosing the appropriate infrastructure best suited to their trading models, Eurex will introduce an additional Enhanced Transaction Solution session type. Whilst maintaining the identical functionality as existing sessions, the new session type will have a lower throttle setting of 50 transactions per second. The new session type will be offered at a reduced price and the price for existing sessions (150 transactions per second) will be reduced.

Prices for trading and back-office sessions required for the Eurex FIX Gateway are aligned with the new Enhanced Transaction Solution session with a reduced throttle and existing Enhanced Confirmation Solution sessions.

For the different session types the following monthly charges apply:

4.2.2. Trading sessions

- Enhanced Transaction Solution trading session (150 txn/s): **EUR 600**
- Enhanced Transaction Solution trading session light (50 txn/s): **EUR 250**
- Eurex FIX trading session (50 txn/s): **EUR 250**

Please note that in future Eurex will no longer provide any trading sessions free of charge. On the basis of the revised price list, Members will receive a rebate of up to a maximum of EUR 1,200 (equivalent to two full Enhanced Transaction Solution sessions) on the total number of trading sessions purchased.

4.2.3. Back-office sessions

- Enhanced Confirmation Solution session: 2 free, **EUR 100 from third**
- Eurex FIX back-office session: 2 free, **EUR 100 from third**

[1] The price for the 2 Mbit/s FIX Channel option will be provided by the end of August 2011.

4.3. 10 Gbit/s connectivity in the co-location facility

Prices for dedicated 10 Gbit/s Enhanced Broadcast Solution and Enhanced Transaction Solution cross-connects in the Equinix data centre will be provided by the end of August 2011. For details on 10 Gbit/s cross-connects please refer to chapter 5.2.

5. Consolidation of the Eurex data centres and co-location

The Eurex matching engines are currently distributed between two separate data centres and operate in a "hot-hot" configuration. Transfer of data between the data centres currently adds additional latency to Eurex processing times. As Eurex participants are currently unable to locate their infrastructure in the same data centres as the Eurex matching engines, additional latency is incurred.

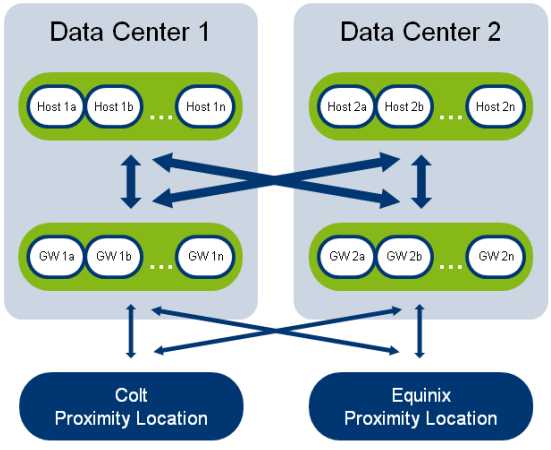
Following on from the migration of the proximity gateways for the Enhanced Transaction Solution interface to the Equinix data centre, which was performed in June 2011, Eurex is planning two further infrastructure initiatives which will lead to further significant overall reduction in latency.

5.1. Data centre migration

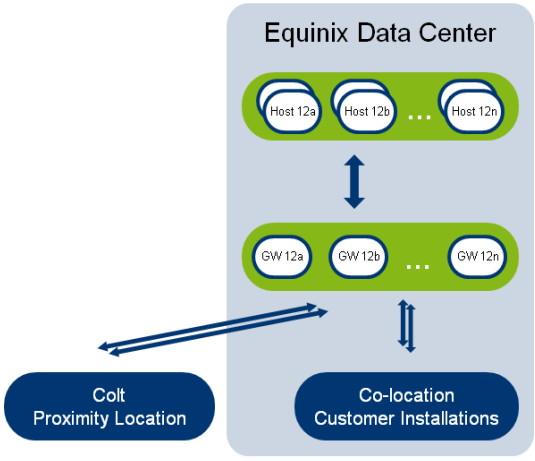
Eurex will migrate its matching engines to new state-of-the-art servers in the Equinix data centre. The migration is currently scheduled to take place in October 2011. The consolidation of all the active Eurex production hosts in one location will reduce latency for data transfer between hosts to the possible minimum.

Eurex Members who are already located in the Equinix facility will benefit from the migration and be provided with a true co-location service without any further activities being necessary.

Eurex participants in the Colt proximity will also benefit from the data centre migration as the distance to the Eurex® production system will be reduced. The following diagramme provides a simplified representation of the current proximity location setup and the future situation.



Existing Proximity Concept



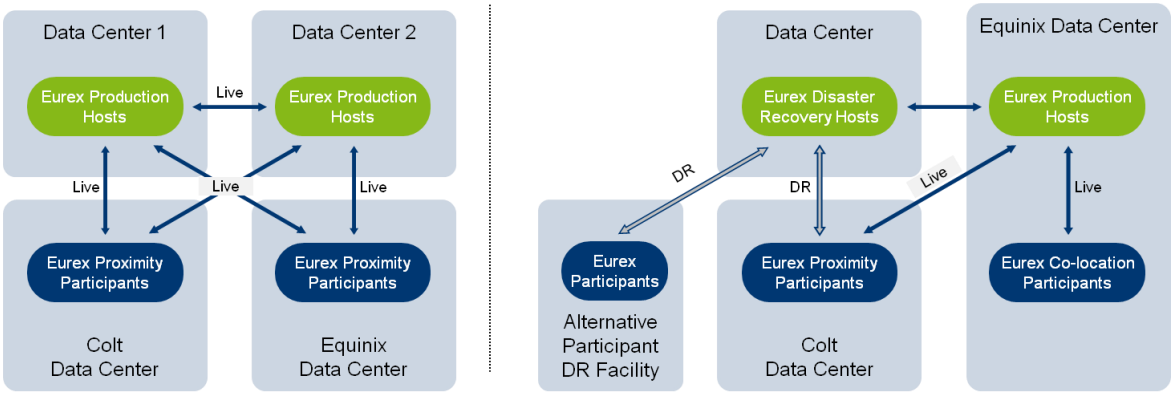
New Proximity / Co-Location Concept

For disaster recovery purposes, additional matching engines (hosts) will be provisioned in a second data centre. In the unlikely event of a complete loss of the Equinix data centre facility, an automatic failover mechanism will assign the products to the matching engines in the second data centre using a mechanism similar to the current Eurex® production system.

Redundant data storage in both data centres will ensure that there will be no loss of persistent data. Similar to the current approach following the failure of a matching engine, non-persistent data will not be recovered.

In the event of a complete loss of the Equinix data centre facility the proximity gateways for the Enhanced Transaction Solution interface cannot be used any longer. Access to the Eurex disaster recovery hosts via the Enhanced Transaction Solution will be available via gateways located in the second data centre. More details concerning the infrastructure setup for the disaster recovery location will be provided at a later date.

The following diagramme provides a simplified representation of the disaster recovery setup following the migration of the Eurex hosts to the Equinix data centre.

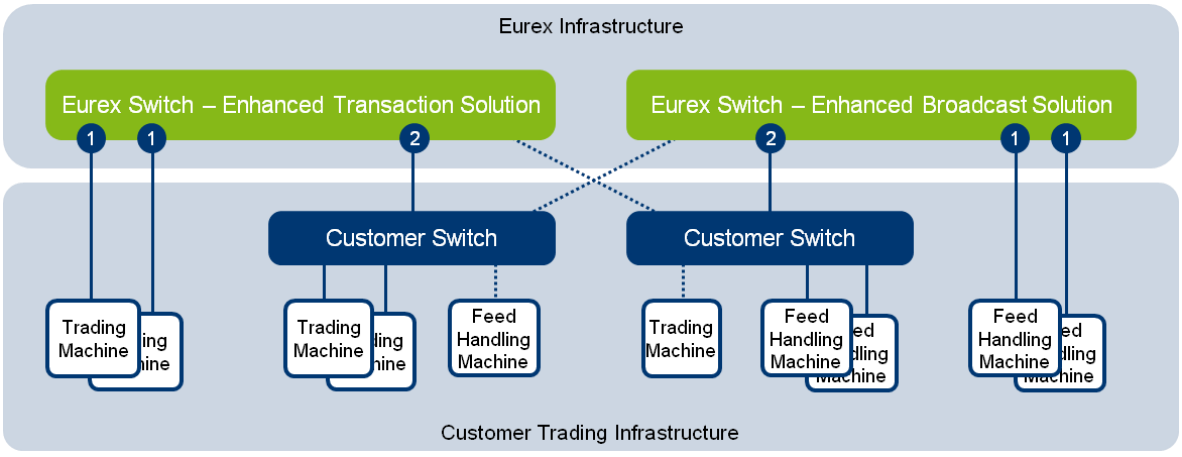


Present Situation *Future Situation*

5.2. 10 Gbit/s connections in co-location

To complement the migration of the Eurex matching engines and provide latency-sensitive applications with the fastest possible connection to the Eurex® trading system, 10 Gbit/s dedicated cross connects will be offered in co-location. In addition, the infrastructure for the 10 Gbit/s market data interface (Enhanced Broadcast Solution) and transaction interface (Enhanced Transaction Solution) will be segregated. Separate cross connects for market data and transactional data will be required.

Eurex participants will be able to order dedicated 10 Gbit/s cross connects to each interface and operate them as a ❶ "direct port" or ❷ "switch port" connection. The fundamental difference between the different options is represented in the following diagramme:



Regardless of the location of customer's infrastructure within the co-location facility, all 10 Gbit/s cross-connect cables will have a normalized length. Eurex will not make any requirements with regard to network equipment and participants will be free to choose their own network hardware vendor.

Eurex plans to launch the 10 Gbit/s infrastructure in production on December 12, 2011. More details regarding a connection test scheduled for December 10, 2011 will be provided at a later date. The 10 Gbit/s cross-connects can be ordered via Tickets and Requests service in the Application Portal of the Member Section on the Eurex website under the path:

www.eurexchange.com > Member Section > Technical Services

For easier access, click on the following link:
https://business.eurexchange.com/irj/portal/

Eurex guarantees that all orders received by October 17, 2011 will be delivered no later than December 12, 2011.

6. Registration of Contact Persons

In addition to existing documentation and the documentation to be published within the scope of Eurex Release 14.0, as previously announced in the information calendar, Eurex also plans to provide more information on the topics presented within this circular via webinars and customer presentations.

To ensure pinpoint information distribution and communication during the migration phase, Eurex requests that all participants make use of the electronic registration facility for their **Technical Roadmap Contacts**. Please register both a **Project Coordinator** (from the business side) together with a **Technical Contact** (for technical implementation) in the Application Portal of the Member Section on the Eurex website. Contact data entered for previous releases as well as the option to enter additional contact persons can be found under the path:

www.eurexchange.com > Member Section > Contacts & Communication > Contacts > Release Contacts > Release / Technical Roadmap Contacts

For easier access, please click on the following link:
https://business.eurexchange.com/irj/portal

7. Contacts

If you have questions or require further information regarding the contents of this circular, please contact the Markets Services Team, at tel. +49-69-211-1 31 18 or via e-mail: technology.roadmap@eurexchange.com. Alternatively, please contact your Technical Account Manager using your VIP number.

If you have any questions about access to the Member Section on the Eurex website, please contact the Service Point Team on tel. +49-69-211-1 78 88 or send an e-mail to servicepoint@deutsche-boerse.com.

July 11, 2011